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INVESTMENT &  
INNOVATION IN  
THE BALTICS



FOREIGN INVESTORS  
COUNCIL IN LATVIA

*IN COLLABORATION WITH*



**RBS**

RIGA BUSINESS SCHOOL  
*Riga Technical University*

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## Foreword

In an era defined by rapid technological change, shifting geopolitical realities, and intensifying global competition, innovation has become the principal currency of national competitiveness. Countries that invest systematically in their capacity to generate, absorb, and commercialise new knowledge are those that raise living standards, attract talent, and build resilient economies. For Estonia, Latvia, and Lithuania – three small, open economies on the north-eastern edge of the European Union – these stakes have never been higher, and the opportunities have never been more tangible.

This research brings together the perspectives of foreign investors and researchers across the three Baltic States, drawing on first-hand accounts of what it means to operate within these investment and innovation ecosystems. It offers a view from the inside: from the scientists trying to bridge the laboratory and the market, to the investors assessing where to place their confidence and how to convert research, scientific, and technological achievements into market value. Taken together, these voices form a picture that is frank and genuinely instructive.

The current edition of the FICIL Sentiment Index presents a combined analysis of Latvia's investment climate and of the Baltic innovation ecosystem, highlighting innovation-driven investment opportunities across Estonia, Latvia, and Lithuania, and proposing policy instruments that would help unlock both the investment and innovation potential of all three countries.

For the second year in a row, the research explores the case for stronger Baltic collaboration, but this time through the lens of innovation. The three countries share a historical experience that has forged a particular kind of pragmatic resilience, one that shapes their priorities, industrial base, and cultural relationship with risk and change. In light of a new geopolitical reality, the terms of that collaboration must be revisited. Deeper integration is no longer a choice. It is a strategic necessity.

The central ambition of this research is to build a bridge – between the Baltic States themselves, between the researchers who generate knowledge and the investors who allocate capital, between the unfulfilled potential that exists across the region and the reality of what has so far been achieved. This is not a straightforward bridge to build. It demands ambition, courage, and genuine collaboration. It requires thinking and acting beyond borders – beyond cultural and psychological constraints, beyond structural and institutional inertia – towards the future the Baltic States have the capacity to create.

Foreign investors in Latvia are sending a clear message to national, Baltic, and EU policymakers, and to all innovation-related stakeholders: let us not waste the opportunities that can be generated if we work together; let us stop wasting potential! The opportunities identified in this study are real and time-sensitive. The countries and ecosystems that act with focus, commitment, and coordination across borders will be the ones that emerge with competitive positions worth holding. This research is offered in the spirit of urgency and in the conviction that Estonia, Latvia, and Lithuania, and their innovation ecosystem stakeholders, acting together, have more to offer the world than the sum of their individual parts.

Reinhold Schneider

*FICIL Chairperson of the Board*

## Executive Summary

The assessment of Latvia's current investment climate by the foreign investors indicates a moderately positive, but increasingly polarised outlook, combining recognition of progress with growing frustration over unresolved structural challenges. The investment climate is primarily shaped by five factors: geopolitical risks, weak policy implementation, political instability, insufficient institutional coordination, and Latvia's structural strengths. Geopolitical concerns continue to negatively affect the investment climate, with the war in Ukraine and Latvia's proximity to Russia continuing to affect long-term investment decisions, especially in capital-intensive sectors.

Human capital remains the most urgent concern. Education and requalification, labour availability, and demographic decline were identified as the key priorities requiring immediate policy attention. Investors expressed growing dissatisfaction with limited progress in these areas, while progress in defence and investment incentives was viewed more positively.

Despite concerns, investors continue to recognise Latvia's core advantages, including political and macroeconomic stability, competitive taxation, good infrastructure, technological capabilities, quality of life, and a skilled workforce. Compared to previous years, greater emphasis is now placed on digital infrastructure, technology, and know-how, while low labour costs have become less important due to increasing labour shortages.

Looking ahead, investors identified the following priorities for the next government: strengthening human capital and education, improving defence and regional security cooperation, maintaining a predictable tax policy, reducing bureaucracy, ensuring political stability, supporting energy independence, and delivering major infrastructure projects effectively.

A key warning sign is the decline in future investment intentions. Only 47% of foreign investors stated they plan to increase investment in Latvia, which is the lowest level since 2016. Future investment decisions will largely depend on geopolitical developments, policy predictability, economic conditions, and the government's ability to implement credible long-term reforms.

In the view of both foreign investors in Latvia and the Baltic research community, the Baltic States reveal a significant innovation potential, supported by strong digital infrastructure, skilled talent, emerging technological capabilities, and growing activity in sectors such as information and communication technology (ICT), manufacturing, defence, energy, life sciences, and bioeconomy. However, several challenges halt the development of the Baltic innovation ecosystem and foster greater fragmentation: namely, weak governance and regulatory barriers, risk-averse innovation culture, insufficient collaboration between business, academia, and government, human capital shortages, low visibility of innovation achievements, limited access to finance for innovation, publication-driven academic evaluation systems, and weak commercialisation mechanisms at research institutions. As a result, the foreign investors and the researchers exist in two separate worlds, wasting opportunities and resources, which limit innovation, competitiveness and economic growth.

To address these challenges, respondents strongly support policy instruments focused on cluster/network-based ecosystem development, targeted funding for high value-added product development, stronger science commercialisation and technology transfer systems, innovation

scale-up and export support, regulatory sandboxes, and strategic investment in STEM education and human capital development. Large companies are viewed as critical anchors for innovation ecosystems, due to their ability to integrate SMEs, universities, startups and other stakeholders across the supply chains into scalable industrial platforms.

There is a strong convergence between investors and researchers regarding the industries with the highest innovation potential in the Baltic States and the sectors that would benefit most from stronger pan-Baltic collaboration. ICT, professional and scientific services, health and life sciences, agriculture and forestry, manufacturing, defence, energy, and environmental solutions consistently emerge as priority sectors. Both groups of respondents emphasise that data and new technological capabilities untap innovation opportunities in these industries, if powered through collaborative networks, and indicate that innovation priorities should be grounded in existing capabilities, human capital, and resource endowments rather than attempting to replicate models from larger economies.

A stronger Baltic cooperation is considered strategically important, as it could significantly improve competitiveness through greater scale, resilience through joint initiatives, efficiency through shared capabilities and knowledge sharing, and help to develop a strong international brand, such as "Baltic digital tigers", which would raise the stakes for the three countries. Many respondents highlighted that the Baltic region is viewed as a single entity from the outside, namely, by investors, by international partners, and by European institutions, which fosters greater inter-Baltic competition for resources than joint action. Among other key barriers to regional collaboration is a lack of political incentives, which favour national visibility over regional coordination.

The shared diagnosis of the Baltic investment and innovation ecosystem is not a shortage of ingredients, but the absence of a system that connects those ingredients with sufficient focus, speed, trust and scale. Latvia's next development phase should therefore be built around impact-oriented research and ecosystem orchestration, thereby moving beyond general calls for more innovation towards focused Latvian and Baltic sectoral verticals, where global demand, regional economic strengths and research capabilities overlap, transforming resilience into productivity, research into market value and Baltic cooperation into a platform for internationally competitive innovation.

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## Introduction and methodology

Launched in 2015 by the Foreign Investors' Council in Latvia (FICIL), in cooperation with the Stockholm School of Economics in Riga (SSE Riga), the Sentiment Index serves as a platform to capture and reflect the views of long-term foreign investors. The Sentiment Index aims to foster evidence-based policy decisions and promote a favourable investment climate by summarising the key concerns and suggestions of the foreign investors, specifically companies that have chosen to invest and operate in Latvia.

For the second year in a row, the Sentiment Index research expands its geographic scope by collecting data across the three Baltic States – Estonia, Latvia, and Lithuania. Specifically, besides collecting views of the foreign investors on the investment climate in Latvia, the current edition introduces the voice of the research community in all three Baltic States. Such an approach has been selected to examine the innovation ecosystem in the Baltic States from both perspectives – from the perspective of the foreign investors and of the research community. Both types of stakeholders play a critical role in the development of science, technology and innovation, and, thereby, in boosting economic competitiveness and development. The effectiveness of collaboration between the two types of stakeholders determines whether generated knowledge transforms into innovation – product, service, process or other type of innovation, and whether it creates value for the economy and society.

In view of this, the current report focuses on two topics, which are presented in separate chapters. The first one is the traditional analysis of the investment climate in Latvia, which, given the Parliamentary elections in the autumn of 2026, includes suggestions on priorities for the new government. The second part of the report focuses on the analysis of innovation ecosystems in the Baltic States and presents the views of both the foreign investors and of the research community representatives.

The research methodology has been developed in collaboration with several notable researchers and innovation experts, namely Claudio Andres Rivera, Director of Undergraduate Programs and Assistant Professor in Leadership at RTU Riga Business School, Līga Žūka, former Director of Rīga Stradiņš University Innovation centre, Dins Šmits, Founder & CEO at MeDi Group and Co-Founder & Board Member at Professor Skride Heart Clinic, Dace Kārkle, Director of Latvian Institute of Organic Synthesis, Jānis Ločs, Council Member and Leading Researcher at Rīga Technical University, as well as Arnis Sauka, Director of the Centre for Sustainable Business, and Anders Paalzow, President and Rector at SSE Riga.

The research had a mixed-method approach, consisting of a survey and in-depth interviews, conducted with the top-level managers of the foreign-owned companies operating in Latvia, and with the key specialists responsible for R&D&I activities in the Baltic research organisations.

To ensure that the research collects views of the foreign investors that have made a significant contribution to the economies of the Baltic States, eligibility criteria have been applied. Participating companies were required to confirm that the foreign capital represents at least 50% of total investment in a Baltic State and indicate that their annual turnover exceeds EUR 145,000. The survey has been distributed to the FICIL members and other investors in the FICIL database, the foreign chambers of commerce in Latvia, and to the database of foreign investors, provided by the Investment and Development Agency of Latvia (LIAA). In addition to completing the survey, participants were invited to take part in follow-up interviews to

provide deeper context and qualitative insights. The selection of interviewees was based on the diversity of industries in which foreign investors operate.

In total, 63 foreign investors in Latvia have participated in the study and 16 of them participated in the interviews. Table 1 presents statistics on respondents, based on their type of economic activity. Given that companies in the manufacturing, information and communication industries dominate in the survey, the analysis might include a small bias in terms of industries, which respondents identify as having high innovation potential. This will be noted later in the analysis.

**Table 1: Foreign investor companies by the type of economic activity (based on NACE Rev. 2)**  
(n=63)

Industry	Percentage
Manufacturing	30%
Information and communication	13%
Transportation and storage	8%
Real estate activities	8%
Other service activities	8%
Electricity, gas, steam and air conditioning	6%
Financial and insurance activities	5%
Professional, scientific and technical activities	5%
Human health and social work activities	5%
Agriculture, forestry and fishing	3%
Wholesale and retail trade, repair of motor vehicles and motorcycles	3%
Education	3%
Construction	2%
Administrative and support activities	2%

The selection of research organisations, which have been invited to participate in the research, was based on the desk study – mapping of key research organisations in Estonia, Latvia, and Lithuania, as well as suggestions of the consulted researchers and innovation experts mentioned earlier. The directors/rectors in each identified organisation have been approached with a request to share the survey with key specialists responsible for R&D&I activities in the Baltic research organisations. In cases of non-cooperation, the FICIL team identified key researchers and innovators in the mapped organisations and approached them directly with a request to complete the survey. Following survey completion, the interviewees have been selected on the basis of their organisational profiles (i.e. thematic focus, geographical location within a Baltic State, organisational size) with the purpose of ensuring their diversity. In total, 36 research community representatives from Latvia, 35 from Lithuania, and 26 from Estonia completed the survey. In each Baltic State, 5 interviews have been conducted.

Data collection has been conducted between March and May 2026, while data analysis was performed in April and May 2026. Selected quotes of survey/interview participants are presented throughout the report, while all quotes can be found in Appendix 1 (quotes of the foreign investors in Latvia) and Appendix 2 (quotes of the research community in the Baltics). To maintain confidentiality, all quotes are anonymised. In the case of foreign investors, quotes

are attributed only by the sector in which a company operates. In the case of research community representatives, quotes are attributed only to a country where a respondent's organisation is based and where he/she resides. To help readers distinguish between perspectives from different countries, quotes are visually marked with colour-coded boxes: blue for Estonia, red for Latvia, and yellow for Lithuania. These excerpts appear throughout the report to provide additional context, highlight recurring themes, and give voice to the individual experiences of foreign investors.

In cases where a year is indicated in figures or tables, it refers to the year of analysis or the year of published data. To facilitate reference to the research community representatives in the analysis, they are referred to as “researchers” or “research community” interchangeably.

As mentioned earlier, Appendices 1 and 2 present full quotes of respondents. Appendix 3 lists foreign investors that took part in the research, while Appendix 4 provides a list of research organisations in the Baltics, which contributed to the study. Appendices 5 and 6 present research guidelines for the foreign investors in Latvia and for the Baltic research community respectively.

## Chapter 1: Foreign investment climate in Latvia

The current chapter provides the analysis of survey and interview data on the investment climate in Latvia, collected from the foreign investors in Latvia. It presents findings on the overall assessment of the investment climate, key challenges and advantages of doing business in the country, outlines key priorities for the new government and highlights further investment plans.

### 1.1. Assessment of the investment climate and of the work of public sector officials in Latvia

When the foreign investors in Latvia were asked to assess the current investment climate in Latvia on a 5-point scale, on average, they estimated it at **3 (moderate)**. The distribution of responses and the mean and median values are displayed in Figure 1 and Table 2. Overall, this highlights a slight improvement in sentiment over the last two years **and a rather positive assessment**, given that it is the highest value since 2019. However, if we compare the assessments conducted in 2025 and 2026, the distribution of responses shows a greater polarity of views this year.

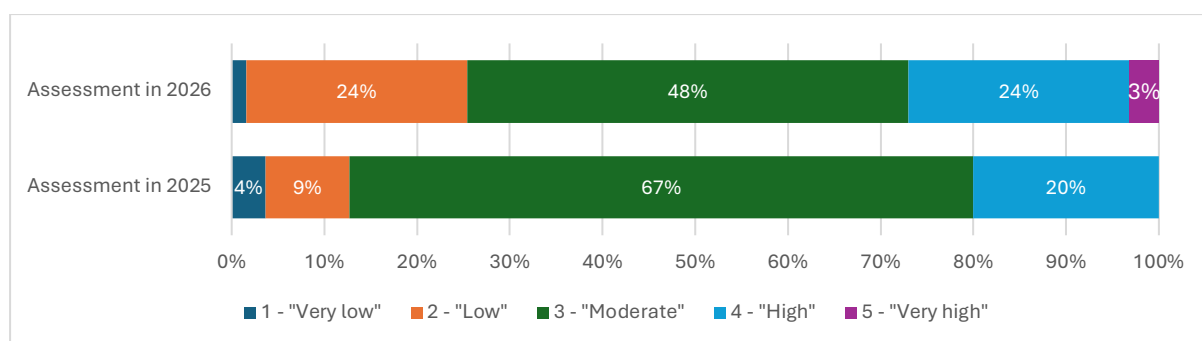
**Table 2: Foreign investors' assessment of the investment climate in Latvia (2019–2026)**

*Scale 1–5, where '1' means very low investment attractiveness and '5' means very high investment attractiveness from your company's perspective*

Year	Assessment <sup>1</sup>
2026	3.0/5 (mean = 3, median = 3)
2025 <sup>2</sup>	3.0/5
2023	1.9/5
2022	2.3/5
2021	2.9/5
2020	2.7/5
2019	2.6/5

**Figure 1: Overall, from the perspective of your company, what is the current investment attractiveness of Latvia?**

*Scale 1–5, where '1' means very low investment attractiveness and '5' means very high investment attractiveness from your company's perspective (n=63)*



<sup>1</sup> FICIL. Sentiment Index

<sup>2</sup> Prior to 2025, the foreign investors were asked to assess the investment climate during the previous 12 months, but since 2025 the assessment focused on the current situation. Thus, it seems that data is missing for 2024.

A more mixed sentiment of the foreign investors is confirmed through the analysis of the interview data – it ranges from a recognition of improvements to a perception of stagnation and decline. Such sentiment is driven by several factors: geopolitical concerns, the gap between plans and execution, general political environment during the election year and coalition instability, lack of institutional coordination and transparency, and, on a positive side, Latvia's structural strengths.

### ***Geopolitical concerns***

Geopolitics remains a major determinant of the investment climate in Latvia. The proximity to Russia and the ongoing war in Ukraine are the most cited factors shaping investor sentiment. Several investors note that while geopolitical uncertainty has in some ways become "normalised" over four years, it continues to weigh heavily on long-term investment decisions, particularly in sectors requiring large capital commitments, such as construction, real estate, and infrastructure.

### ***The gap between plans and execution***

The foreign investors point to the disconnect between announced reforms and actual delivery. Broader government coordination is seen as lacking; cross-ministerial action requires Prime Ministerial backing that, in practice, is absent. The interviewees refer, for instance, to the port reform, which has not materialised, and to the defence industry, education, climate and energy-related plans, which remain on paper.

### ***Political environment and coalition instability***

The internal conflicts within the governing coalition over the past year have raised concern. The approaching parliamentary elections, in the view of investors, have certainly stalled progress and decision-making, and harmed the overall perception of a stable and investor-friendly political environment. Despite that, some investors have acknowledged the political will to make positive changes in the country and the contribution of Prime Minister Evika Siliņa in managing a difficult coalition.

### ***Institutional coordination and transparency***

Multiple investors highlight a structural problem: insufficient collaboration between institutions and duplication of functions. This slows reform implementation and creates unpredictability. In addition, the defence sector is flagged for opacity and lack of transparency, with restricted tender access and a level of classification that contrasts unfavourably with Estonia and Lithuania.

### ***Latvia's structural strengths***

The foreign investors that have provided a positive assessment of the investment climate referred to Latvia's genuine structural advantages: political and macroeconomic stability, a sound tax system, good infrastructure, educated workforce, and a high quality of life. In addition, they reflected on the impressive progress of the country's development since regaining independence. LIAA data on record high investments in 2025 has also been cited as an encouraging signal.

### ***Quotes of respondents/interviewees from Latvia***

***Financial and insurance activities*** – *I would say the investment climate has improved, actually. I think my personal perception is a lot of that is down to Siliņa, to the Prime Minister, and I think*

*she's personally managing the coalition the best she can, which is likely very difficult circumstances. So, I would say she's having a good personal impact on the investment climate. I also saw some data from LIAA on investments. I think we're at record levels, which is clearly a good sign. I would say over the last year, 12 to 18 months, it improved my sentiment of the investment climate.*

**Information and communication** – *Latvia has a relatively good investment climate. There was great scepticism when we came to the Latvian market, but with years we see that the country provides many advantages – stable political and macroeconomic situation, stable policymaking, smart people, good infrastructure, good tax system, great place to live and work.*

**Manufacturing** – *In terms of progress of development of Latvia - maybe we would like to be faster, but overall progress is great. I am very proud of Latvia, it has so many achievements over the last 30 years and let's be honest – the neighbours in the East are not a gift, the country does not have gold or oil or gas, therefore all its achievements have been the result of a hard work and dedication. So, I am proud of Latvia and of the Baltics generally.*

**Real estate activities** – *On the one hand, there have been some positive steps, mainly from the Ministry of Economics. In April 2024, an action plan was adopted to improve the investment climate, particularly in the real estate development and construction sector. It includes 62 measures, with a clear plan and responsible persons assigned. From that perspective, everything looks quite positive, and the Ministry itself is active in this area. On the other hand, the execution of these 62 measures is largely not happening. Only a few are moving forward, while most remain at a preparation stage. To implement these changes, involvement from other ministries is required, such as the Ministry of Finance and others, and this is only possible with real support from the Prime Minister. While publicly there appears to be support, in practice it is not there. This is the biggest disappointment. Across the economy, there are many plans and programmes, but in reality, nothing is happening.*

**Construction** – *There is a political will to improve things – this is appreciated. But the conflict within the coalition last year was concerning. I see that some reforms (e.g., laws on climate) are moving forward, the defence efforts, defence industry development - the drone coalition is moving forward. The Latvian government has made a lot of efforts to be heard at a regional and EU level and this improves security of the country.*

**Real estate activities** – *In the defence sector, although funding is increasing, the system is highly opaque. Information about projects is not accessible, even for relatively simple construction projects. Access to tenders is restricted to a small group of pre-selected companies, and new entrants face a circular barrier, where participation requires prior involvement, but there is no way to enter the system initially. Compared to Estonia and Lithuania, where only specific elements are classified, Latvia applies a much broader level of secrecy, which limits participation and transparency.*

**Transportation and storage** – *Nothing has changed in terms of the investment climate. There is a lack of collaboration between institutions, and some functions are being duplicated. There is a lack of a change. For example, where is the port reform? We have not seen it in practice.*

**Financial and insurance activities** – *Geopolitics still is a big factor for business. Construction sector has a lot of challenges, they are not persuaded that it is a safe region and they need to make*

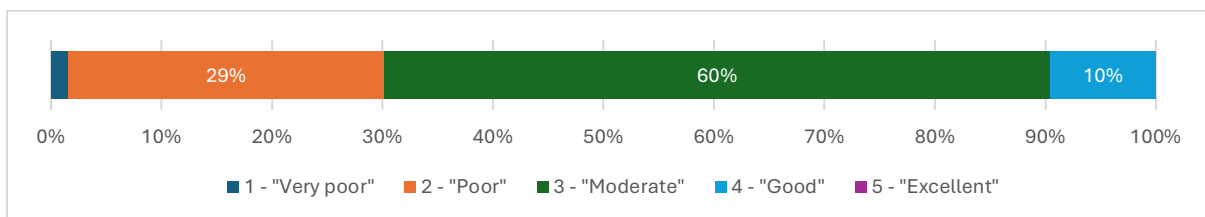
*long-term investments. People get used to the situation with geopolitics – forever unknown, forever threat. There are some signs that Russia is weak, Ukraine managed to get some achievements. After 4 years the geopolitical uncertainty and a lack of safety has become a norm, therefore we feel relatively safe.*

**Other service activities** – *Latvia’s investment climate has changed over the past year primarily because of geopolitics and the war in Ukraine. Foreign investors have become much more cautious when selecting locations. Even if they do not always say it openly, security concerns are clearly part of their decision-making, especially because Latvia and the Baltic States are close to Russia. A lot still needs to be done to reassure investors that the region remains secure. Compared with four years ago, the situation is not better. Compared with two or three years ago, there is not a major difference either. Many investors remain in a waiting position, looking for signals that the situation could stabilise or improve before making decisions. News about possible security threats in the Baltics can strongly discourage investment decisions. The level of perceived political risk is not reflected in costs. Investors may be willing to accept higher political risk if there is a cost advantage, but in Latvia that trade-off is often unclear. Real estate and other costs have not fallen because of the war, and in some cases prices have increased. As a result, investors may compare Latvia with other markets where investment costs are similar, but perceived risk is lower, which makes Latvia less competitive.*

**Information and communication** – *The geographic location is a big negative factor. Despite greater stability and predictability of the policymaking still at times there are government decisions, which revert investments. We have mobilised resources and then suddenly there is a change of decisions or a lack of implementation on the government side. Business needs to trust the government and believe in stability of their decisions, as it will affect medium to long-term plans*

When the foreign investors in Latvia were asked to assess the work of Latvian public sector officials to improve the investment climate **over the last year – in 2025**, on average, they assessed it as **moderate** – 2.8 (mean value) and 3.0 (median value). This question was skipped in the research conducted in 2025; however, Table 3 illustrates the comparative data since 2016. Overall, for the period of 2016 – 2025 the assessment of the public sector officials’ work is rather stable – approaching “moderate”; it has slightly improved since 2022, while being most positively assessed in 2019-2020. This quantitative assessment is in line with the above-presented analysis of the interview data, pointing to a lack of institutional coordination and sub-optimal speed of the policy implementation processes.

**Figure 2: Foreign investors’ assessment of the Latvian public sector officials’ work to improve the investment climate in Latvia over the last year**  
 Scale 1–5, where ‘1’ means “very poor” and ‘5’ means “excellent”  
 (n=63)



**Table 3: Comparison of 2016 – 2025 data on foreign investors’ assessment of the Latvian public sector officials’ work to improve the investment climate over the last year**

*Scale 1–5, where ‘1’ means “very poor” and ‘5’ means “excellent”*

2016: n = 30; 2017: n = 42; 2018: n = 40; 2019: n = 47; 2020: n=44; previous 4 years (2018–2021): n=54; 2022: n=55; 2023: n=66; 2025: n=63

Year of analysis	Mean value
2025	2.8
2023	2.4
2022	2.7
2021	2.9
2020	3.1
2019	3.1
2018	2.9
2017	2.9
2016	2.3

## 1.2. Key challenges of the foreign investors in Latvia and progress in addressing them

Table 4 provides an insight into top-3 challenges of the foreign investors in Latvia in 2019–2025. While there are small differences across years, access to labour or demography is consistently selected by the foreign investors. In addition, given Russia’s war of aggression against Ukraine, **defence and geopolitics** have been the key concerns of the foreign investors since 2023.

**Table 4: Key challenges of the foreign investors in Latvia (2019 – 2025)**  
(n=63)

Year of analysis	Latvia
2025	Defence Availability of labour (‘hands’) Investment incentives
2023	Geopolitics Domestic market size Availability of local skilled labour
2022	Demography Access to labour Level of education and science
2021	Demography Access to labour Uncertainty
2020	Demographics Uncertainty Tax system
2019	Demographics Quality of education & science Availability of labour

This year, when the foreign investors were asked to select three areas which, in their view, require urgent attention of the policymakers in Latvia, the following list of Top-7 priorities has

been formulated (Table 5). Most respondents once again selected the **human capital-related areas** – education and requalification (39% of respondents) and availability of labour (29% of respondents), followed by **defence** (29% of respondents). Besides what could be coined as “traditional challenges”, the innovation ecosystem (cooperation between government, business and universities), tax system, productivity and healthcare system have become more prominent areas of concern, as compared to the previous year. This points to insufficient progress in the human capital-related areas, remaining concerns about the geopolitical situation and the defence capabilities of Latvia, and consistency in terms of priorities of the foreign investors in Latvia.

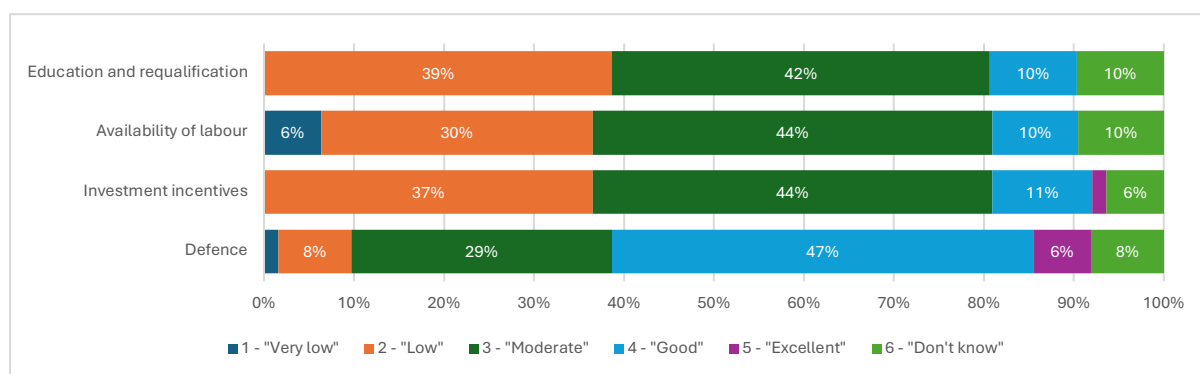
**Table 5: Top-7 key areas that require urgent attention of the policymakers in Latvia**  
(n=63)

Area	Percentage of respondents in 2026	Percentage of respondents in 2025
Education and requalification	39%	26%
Availability of labour ('hands')	29%	28%
Defence	29%	31%
Innovation ecosystem – cooperation between government, business and universities	26%	17%
Tax system	26%	3%
Productivity	24%	14%
Healthcare system	21%	6%

When this year’s respondents were asked to assess progress in the Top-4 areas of concern mentioned last year (namely, defence, availability of labour ('hands'), investment incentives, education and requalification), 47% of foreign investors indicated that **good progress** has been achieved in the area of **defence**, while progress in other areas has been mostly assessed as low or moderate (Figure 3). It is important to note that around 10% of respondents struggled to assess the progress, which might point to a lack of information to formulate an opinion.

**Figure 3: Foreign investors’ assessment of the progress achieved in addressing challenges in key areas**

*Scale 1–5, where ‘1’ means very poor progress and ‘5’ means very high progress in addressing challenges in the following areas*  
(n=63)



The combined data on challenges and progress in addressing them points to a **growing dissatisfaction** of the foreign investors with a lack of human capital availability and education/requalification initiatives. In contrast, over the year, the **progress in the defence**

**and investment incentives** areas has been noticed (last year, 28% of respondents argued that investment incentives is an area that requires urgent attention of the policymakers, while this year only 16% of respondents selected it).

When the foreign investors were asked to explain their assessment of progress over the last year, the following trends were observed:

- **Remarks about defence focused on** increased political attention towards the defence sector, funding and supportive initiatives, different assessments of progress, and on presented opportunities for industry in this sector;
- **Availability of labour, education and requalification** have been mentioned in a negative context, pointing towards a lack of initiatives and information on how the government will address these challenges;
- **Comments on investment incentives have been associated with the work of LIAA**, which has been positively assessed by some foreign investors.

## Comments on defence

### *Quotes of respondents/interviewees from Latvia*

**Professional, scientific and technical activities** – *We serve defence companies and we see much larger orders recently, from much more innovative companies.*

**Electricity, gas, steam and air conditioning supply** – *There have been some serious attempts to increase targeted Defence spending and attempts to negotiate with Defence sector investors. However, in Investment incentive side it must be said that 'green corridor' is not really working. Special Economic Zones are still in development stages. Other incentives are very localized and are targeted to specialize on local investors, rather foreign investors and new sectors. On top of that, the investment climate in renewables is not supported enough.*

**Real estate activities** – *Allocation to defence is important to build international support. Poor performance on competitiveness, necessary reform and efficient public administration.*

**Information and communication** – *It's good that state investment into Defence has increased and reached one of the biggest % in the EU. However, the efficiency and speed of those investments are lagging behind. Nothing much impactful was seen to improve availability of labour, education and requalification. Investment incentives generally stayed at the existing levels, from one side helping to attract new investors, from another side, not much motivating existing ones to invest even more.*

**Transportation and storage** – *Latvia has been more active in building international collaborations and partnerships, especially in the areas of defence, economic collaboration generally. This is good news.*

**Professional, scientific and technical activities** – *Progress with defence is too slow, civil defence is invisible (non-existent), lack of transparency of defence spending, slow decision-making.*

**Education** – *There has been a lot of discussion about the investments in defence and rightly so.*

**Information and communication** – *Latvia's defence industry must boom. Instead, we see small initiatives. The country should use the geopolitical challenge as a strategic advantage to attract as much investments as possible. Defence industry is a big sector.*

## Comments on availability of labour and quality of education

**Information and communication** – Software Development is highly impacted by Artificial intelligence, and we see drop of demand for talent. It will continue impacting IT roles and will be rightsizing during this and coming years.

**Real estate activities** – A lot of plans but no results, the highest personal income tax in Baltics- challenge to attract high educated working forces.

**Wholesale and retail trade; repair of motor vehicles and motorcycles** – Labour pool has not increased & investments have decreased.

**Human health and social work activities** – Availability of labour: Progress has been limited, as no tangible improvements were made in addressing critical healthcare workforce shortages, which continue to constrain system capacity for innovation uptake.

**Human health and social work activities** – I am not following activities outside our scope of work, but employment tax issue is the most important.

**Administration and support service activities** – I have news about the defence investments, but no information about efforts to improve the labour market and availability of labour.

**Information and communication** – Limited progress related to human capital availability and development.

**Manufacturing** – Demographics - very low progress, poor tax policies.

**Education** – I still see a lack of forward-thinking approaches towards education and requalification. Not enough is being done to keep students in Latvia for university. Not enough is being done to support adult education in the areas where Latvia needs investment.

**Information and communication** – Still very little progress in the areas of demography/education/migration/labour availability. This is not sustainable for the country in so many ways - not for business, not for society, not for government. Some investment incentives for entrepreneurs have been offered - this is good, more could be done.

## Comments on investment incentives

**Financial and insurance activities** – LIAA has worked to attract significant foreign direct investment, whilst start up incentives appear to have improved.

**Manufacturing** – Large investment grant program is what makes the difference.

**Manufacturing** – One of the positive elements is the work of LIAA.

**Manufacturing** – Latvia is lagging back in overall performance, if compared to other Baltic countries, in terms of bringing foreign investments.

**Human health and social work activities** – Despite ongoing dialogue, no new measures were introduced that would materially improve incentives for innovation-driven healthcare investment, leaving key barriers such as reimbursement predictability and long-term funding stability unchanged.

### 1.3. Key advantages of investing in Latvia and drivers of Latvia’s competitiveness

Over the period of 2019–2025, the foreign investors have been pointing to several advantages of doing business in Latvia, such as a good attitude towards foreign investors, efficiency and availability of labour, tax and legal systems, high standards of living/quality of life, digital and physical infrastructure, and logistics & connectivity (Table 6).

When the respondents were asked about the strengths of Latvia’s investment climate this year, they identified a largely similar set of advantages, led by **digital infrastructure**, although with a few additions – talent pool, technology and know-how, proximity to markets (Table 7). The comparison of responses between 2026 and 2025 reveals that currently the foreign investors place a greater emphasis on the **infrastructure-related advantages, improvements in technology and know-how, and in taxation**. In contrast, labour costs, which had been at the top of the list of Latvia’s strengths in recent years, have dropped to fourth place in 2026.

Despite an apparent and growing dissatisfaction of the foreign investors with the human capital-related aspects, when listing other factors that make Latvia an attractive destination for investment the foreign investors still mention a good work ethic, multiculturalism and the intelligence of Latvian people.

**Table 6: Top-3 perceived advantages of the investment climate in Latvia (2019–2025)**

Year of analysis	Latvia
2025	Digital infrastructure Labour costs Physical Infrastructure, Logistics & Connectivity
2023	Availability of labour Standard of living Legal system
2022	Standard of living Attitude towards foreign investors Tax system/Legal system
2021	Attitude towards foreign investors Standard of living Tax system/Legal system
2020	Standard of living Attitude towards foreign investors Efficiency of labour
2019	Standard of living Attitude towards foreign investors Efficiency of labour

**Table 7: Top-8 current strengths of the investment climate in Latvia**  
(n=62)

Key strengths	Percentage of respondents in 2026	Percentage of respondents in 2025
Digital Infrastructure	45%	43%
Physical Infrastructure, Logistics & Connectivity	39%	31%
Quality of Life	35%	26%
Labour Costs	32%	43%

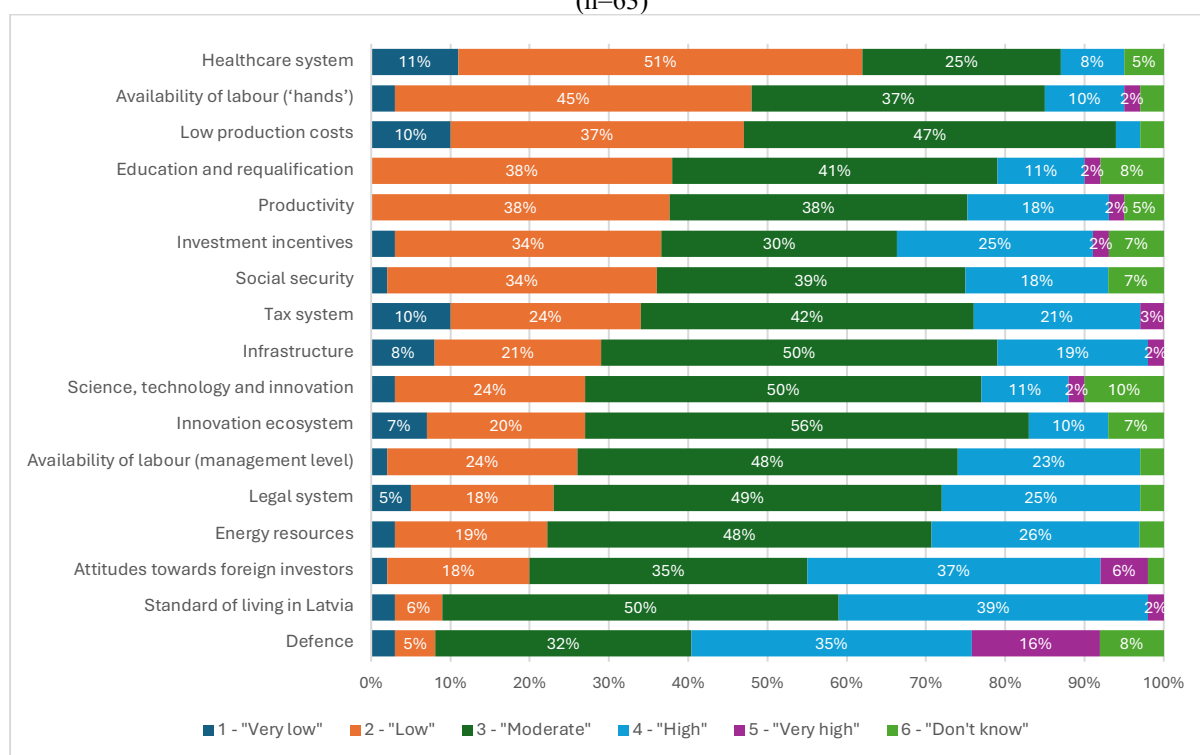
Talent Pool	27%	24%
Technology and Knowhow	26%	17%
Proximity to Markets	23%	31%
Taxation	21%	10%

Besides identifying Latvia's strengths, the foreign investors were asked to assess the progress of the main drivers of Latvia's economic competitiveness over the last 4 years. Over 25% of respondents pointed towards high or very high progress **in the areas of defence, standard of living, attitudes towards foreign investors, energy resources, legal system and investment incentives** (Figure 4). In contrast, in view of the foreign investors, the lowest progress has been observed in the following areas: healthcare system, availability of labour ('hands'), low production costs, education and requalification, and productivity. These findings once again point to dissatisfaction of the foreign investors with progress in areas related to human capital.

**Figure 4: Foreign investors' assessment of progress of the main drivers of Latvia's economic competitiveness over the last 4 years**

Scale 1–5, where '1' means very low progress and '5' means very high progress in driving Latvia's economic competitiveness over the last 4 years

(n=63)



#### 1.4. Key priorities for the new government to improve the investment climate in Latvia

In view of the upcoming parliamentary elections, during interviews the foreign investors have been asked to indicate what should be the **key priorities for the new government** to (further) improve the investment climate in Latvia. Without a surprise, the foreign investors pointed to the following areas (listed in hierarchical order from most frequently mentioned to least frequently mentioned):

- Human capital, education and demographics
- Defence and regional security cooperation

- Tax policy
- Political stability, predictability and accountability
- Energy independence and competitive energy prices
- Reducing over-regulation and the administrative burden on business
- Infrastructure and large strategic projects
- Attracting foreign investment more effectively

### ***Human capital, education and demographics***

This is the single most frequently raised priority among all interviewed foreign investors. They are alarmed by a lack of commitment to address fundamental challenges, such as a lack of labour availability, declining demographic indicators, and a labour market mismatch between what Latvia's education system produces and what the economy needs. The absence of strategies in these areas is seen as an existential risk to economic development. Investors call on the government to treat human capital development as a core state mission rather than a burden to be shared with the private sector. Smart, targeted immigration policy, including streamlining residency processes and actively attracting skilled professionals, is seen as an essential complement to domestic education reform. Moreover, the pre-election political discourse, which features nationalistic tendencies, is considered dangerous and harmful to the attraction of foreign investment and for the economy generally.

#### ***Quotes of respondents/interviewees from Latvia***

***Transportation and storage*** – Human capital availability and development remain a key concern.

*At the moment, the education sector keeps producing humanitarian professionals - lawyers, marketing specialists, psychologists etc., while Latvia needs people with STEM knowledge and skills. Yet not many students are studying these subjects. As a result, there will be a labour market mismatch or a mismatch between what the Ministry of Economics writes in their strategic economic development papers with the reality. No people – no economy. This has been highlighted over and over, but does not seem to get through to the politicians. Building human capital is extremely investment-intensive exercise. Companies should not bear all the costs and reskill people. Instead, the government, the education sector should realise that it is their key mission. People build the country, therefore human capital availability and development should be taken seriously!*

***Construction*** – Education should be more targeted towards needs of investors/business in Latvia.

*The labour market mismatch should decrease and education should become a priority. Smart people are useful for all economic sectors. Dual education, vocational schools should be supported. The Human Development Council should get more power – it seems that there is a political crisis, as the three ministries cannot agree on what should be done and how to manage activities. There should not be an internal conflict between the three ministries. Plus, funding is very limited for human development.*

***Financial and insurance activities*** – We cannot sustain a country without people. It is not sustainable for the public sector and for the private sector. Labour force availability is absolutely critical. Latvia needs smart migration. The government should define sectors, where we could or should attract skilled labour. Of course, companies that can offer high salaries can find a way to attract labour, but currently it is costly, and for small companies in Latvia labour availability is

*becoming an increasing struggle. I hope the government will be smart enough to support AirBaltic – it is one of our key advantages, it is important for the entire economy.*

**Education** – *The focus should be on attracting people from countries, where immigration genuinely benefits the host country, rather than drawing in populations, where a significant share of income is sent back abroad. English-speaking countries are a natural target, partly because Latvians are so strong in English, which means having English speakers here would not create much concern or friction. From my own experience running a school, attracting teachers from the UK, the US, and other countries has become increasingly difficult and stressful. Every employee at our company earns at least €50,000 a year, and the tax contribution from that is significant. They are also unlikely to ever draw a Latvian pension. So, it is clearly a net benefit. Most people only come for a period of time, but they contribute to the social security system and probably never draw from it. The annual immigration renewal process for our employees is a real problem. It is a waste of money and time for both the country and the individuals going through it, and it makes Latvia look unnecessarily unwelcoming. I think this is an area, where Latvia could genuinely stand out from many other European countries. It is increasingly hard for non-EU nationals to live anywhere in Europe, yet every country needs them.*

**Other service activities** – *A key priority is demographics. Without a clear plan to address population decline, Latvia will struggle to develop. This requires a serious demographic programme that includes immigration. The issue is well known, and there are already examples from other EU countries showing both what works and what should be avoided. At present, however, there is no clear policy, only fragmented and politically driven decisions. This creates uncertainty for investors. There have already been cases where Latvia signalled openness to relocating specialists, but later reversed the course, because of domestic political pressure. That undermines trust and raises doubts about Latvia's reliability as a partner.*

**Other service activities** – *Latvia has a competitive offer in higher education, particularly for foreign students studying in English at a comparatively affordable cost. This creates an opportunity to attract and retain talent, but the country is not using this potential fully. Instead of a clear system for identifying which students could stay and contribute to the economy, there is no coherent policy, only reactive debates around politically visible issues. From an investor perspective, the problem is not only demographics itself, but the absence of a credible plan to address it.*

**Information and communication** – *There should be a greater engagement with the business sector, with more support for business development and less focus on political manoeuvring. Currently, there is a strong emphasis on defence and cybersecurity, but expectations are that the focus should be broadened beyond these areas. A key priority should be human capital. At present, the responsibility for talent development and skills largely falls on companies themselves. There is a need for more active involvement from the state in this area. In practice, the organisation's activities in the local market have been limited in recent years, apart from workforce-related aspects.*

**Human health and social work activities** – *Healthcare has to be a top priority. Population health outcomes are significantly weaker than in much of the EU, and that has long-term consequences not only for individuals, but also for the economy. When people become chronically ill earlier and spend fewer years in good health, it reduces their ability to remain active in the labour market and adds to the broader fiscal burden. The second priority is the investment climate, which is closely*

*linked to the first. If Latvia does not take a more proactive approach to attracting investors and reducing regulatory friction, it will continue to miss opportunities in health innovation and the wider economic activity that comes with it. The third priority is education, particularly the development of skilled human capital. The issue is not the number of structures or initiatives on paper, but whether they actually lead to meaningful capability-building. These three areas, healthcare, the investment climate, and education, are closely interconnected.*

### ***Defence and regional security cooperation***

Defence is consistently named as a top-tier priority, not only as a matter of national security but also as a precondition for investor confidence. Investors are dissatisfied with the lack of coordination between Latvia and its Baltic neighbours, and between NATO and EU defence frameworks. They call for a concrete, operational defence plan and urge closer collaboration with Estonia, Lithuania, Finland and Poland. The Rheinmetall deal and the Baltic defence cooperation initiative are cited as positive starts, but real action is seen as limited.

### ***Quotes of respondents/interviewees from Latvia***

***Manufacturing*** – *A key priority is a defence. I don't understand the strategy of NATO and of the EU – do they work together? In case of an actual war in the Baltics, there should be a clear plan at the NATO, EU, Baltic level. This is where the Baltics, Finland and Poland should collaborate very closely – I believe more in the regional collaboration, as the EU institutional processes are extremely lengthy. The defence plan should not be just on paper, but in reality, and it should focus on prevention, not letting Russia in.*

***Construction*** – *Defence is still a priority. We need to finalise a deal with Rheinmetall and cooperate more with the Baltic countries. We started last year with the FICIL initiative and the ministries of economy across the three Baltic States showed interest in collaboration, but as I understand real action is limited. The defence strategies of the three Baltic countries are very different, there should be more coordination and alignment with investors in that field. We all have a border with Russia and Belarus – it does not make sense to work in silos. If we or our neighbours do not consider something related to defence, it will become a problem for all of us, and for the entire Europe.*

### ***Tax policy and competitiveness***

In this context, the key message of the foreign investors is to avoid changes to the tax policy and additional tax burdens, which would harm the economy. Overall, tax policy is highlighted as a critical competitive tool of Latvia, with several investors warning that changes, particularly to personal income tax, could erode Latvia's attractiveness relative to Estonia and Lithuania. The corporate income tax system is viewed positively, and investors urge the government not to change it. Real estate tax is flagged as significantly higher than in the neighbouring countries. The broader message is that the tax system should be designed to stimulate business activity and investment, not to maximise short-term revenue.

### ***Quotes of respondents/interviewees from Latvia***

***Real estate activities*** – Tax policies are very important. I see some risks in Latvia, compared to other Baltic States. The corporate income tax system is quite good at the moment and we hope it will stay in place. This is an important competitive tool. In addition, personal income tax – there were suggestions to increase a progressive tax. This might decrease attractiveness of Latvia. It certainly depends where to set a headquarter, where investments are made, where expats are attracted to. The government should understand that the current tax system is a competitive tool and any changes will have a long-term impact on the economy. No change something is the best decision.

***Real estate activities*** – Tax policy is a key element. In many cases, reducing tax rates can result in higher overall tax revenues, as higher taxes push part of the economy into the grey zone or reduce activity. There are examples where lowering tax rates increased total tax collection.

***Real estate activities*** – Currently, Latvia has some of the highest tax rates in the Baltic region. Real estate tax is significantly higher than in the neighbouring countries, despite Latvia being smaller than Lithuania. Estonia collects even less tax, partly due to long-term stability in cadastral values and a clear policy objective to support residents.

***Real estate activities*** – Personal income tax is also relatively high, especially for higher value sectors, such as IT, making Latvia less competitive for attracting such businesses. As a result, companies often choose Estonia or Lithuania for higher value activities. Overall, the tax policy should be designed to encourage business activity and investment, rather than focusing on short-term revenue increases.

### ***Political stability, predictability and accountability***

The foreign investors highlight the importance of consistency of the political course and of genuine commitment to execution/implementation. Predictability of political direction is essential for long-term investments, while a lack of policymakers' accountability — conflicting political messaging, reversals of earlier commitments, and a pattern of promising before elections and delivering little afterwards — is associated with noticeable frustration of the foreign investors.

### ***Quotes of respondents/interviewees from Latvia***

***Other service activities*** – Priorities for the next government – make Latvia's economy more competitive, therefore invest in the development of the innovation ecosystem, invest in infrastructure, and ensure stability of the political environment. If we have such instability given the geopolitical situation then at least internally, we should stay sober and smart.

***Real estate activities*** – The Baltic political direction has been stable, has been correct – pro-cooperation, rule of law, and this really helps business. The cooperation between the Baltic countries is also important, as large investors are interested in stability and prosperity of this region. Stability and predictability of the political situation could be a political advantage of the

*Baltics, given all changes in the world. Political stability is extremely important for business. The international political environment is becoming very challenging.*

***Human health and social work activities*** – *The main issue is accountability. Too often, there is a cycle of promises before elections and very little delivery afterwards. There should be stronger mechanisms to hold elected officials responsible for inaction during their term, rather than allowing a long period without meaningful consequences.*

***Financial and insurance activities*** – *A clear alignment on priorities is needed. There should be greater consistency in political messaging and direction, as differing answers from politicians create uncertainty and weaken confidence in the overall investment environment.*

***Transportation and storage*** – *The expectations for a new parliament and government would centre on having a clear plan and long-term strategy, and, more importantly, actually following through on it. Some degree of predictability and continuity of direction is what matters most. The situation is not entirely negative, but there is clearly room for more consistent follow-through on the strategic course that has been set.*

### ***Energy independence and competitive energy prices***

Energy is considered an enabler of industrialisation and large-scale investments, especially for data centres, innovative and resource-intensive industries. The reliance on energy supply from other countries is seen as both a national security vulnerability and a commercial risk. The green transition, in principle, has been supported, yet the foreign investors stress the need for a clear, credible roadmap to boost investor confidence.

### ***Quotes of respondents/interviewees from Latvia***

***Construction*** – *Energy independence and competitive energy prices should be the priority. This is linked to all large investments (any new industries, technologies, data centres etc.). Without energy accessibility and energy price competitiveness, no real manufacturing or large-scale production is possible.*

***Electricity, gas, steam and air conditioning supply*** – *Speaking from the energy sector perspective, the clearest priority is energy independence. Latvia has been structurally reliant on gas for base capacity electricity production for many years, with very limited alternatives. This is both a national security question and a significant operational problem for district heating in Riga specifically. Whenever gas or oil prices spike, the effect is felt directly by the end users. In the regions, the transition away from gas towards biomass as the primary fuel source has largely been completed. In Riga, however, gas dependency in district heating remains a major and unresolved issue.*

***Electricity, gas, steam and air conditioning supply*** – *The priority is renewables. However, there appears to be no clear political consensus yet on how to approach the green transition. Latvia's energy strategy is explicit about the destination, but the path to get there remains contested. The market urgently needs a clear signal from policymakers about the direction of travel, so that investors can plan with confidence.*

### ***Reducing over-regulation and the administrative burden on business***

Many investors point to an overly controlling, suspicious attitude of the state toward the private sector. Thus, the foreign investors call for a reduction of bureaucracy, streamlining of administrative processes, and greater trust towards business.

#### ***Quotes of respondents/interviewees from Latvia***

***Information and communication*** – *The government should not replace the private sector. Latvia's effectiveness is a joint effort of the public and private sector – why does the government tries to reinvent the wheel, to replace the market? Companies could provide services, which the government currently tries to replace. The government is a very bad businessmen, therefore please let businesspeople do business. It will do good for both sides. The government tries to control a lot of e-service provision, but cannot manage them well. The government should do only that what they must do, where market cannot replace them. The government should say – let's create an open competition and then the government will free up resources for other critical priorities – defence, education, economic development incentives. We have to take painful decisions, otherwise, we will not move forward.*

***Human health and social work activities*** – *There is also a broader problem in how the state treats businesses. Too often, companies are approached with suspicion, as if they must constantly prove they have done nothing wrong. That mindset is deeply demotivating and does not create a supportive environment for entrepreneurship or investment.*

***Human health and social work activities*** – *Another major priority is reducing the disproportionate burden on small businesses. A very small company should not be expected to meet the same administrative requirements as a much larger enterprise. That creates unnecessary pressure and discourages initiative.*

***Transportation and storage*** – *A related concern is over-regulation and the slow pace at which legitimate business initiatives move through the system. A straightforward legislative change related to ship operations, one that would have significantly reduced port turnaround times and made Latvia more competitive as a location for shipping, took several years to push through, because every ministry needed to be consulted and reassured. Latvia needs to keep the businesses that are still choosing to operate here. Not every proposal from the private sector needs to be approved, but ideas should not be left unresolved for years. A more competitive and less suspicious approach to entrepreneurial initiatives is needed.*

### ***Infrastructure and large strategic projects***

Major infrastructure investments, particularly RailBaltica and energy infrastructure, are seen as both symbolically and practically important. Delays and public failures in flagship projects, such as RailBaltica, are damaging to Latvia's reputation, reinforcing perceptions of poor planning and possible corruption. Investors call for a more effective approach to project implementation, including learning from the experience of other countries.

### ***Quotes of respondents/interviewees from Latvia***

***Real estate activities*** – Defence and large infrastructure projects should remain priorities for Latvia. The timing of this is very important. There should be ways to implement the RailBaltic project. Latvia has not been able to find ways to develop such an important infrastructure project and I wonder why other countries do not share their experience to boost efficiency and effectiveness of project implementation? This should be encouraged.

***Other service activities*** – Reputation also matters. Large public failures such as Rail Baltica damage confidence, because they reinforce concerns about poor planning and possible corruption, even if this is not always said openly. There also needs to be much greater clarity on what Latvia can concretely offer investors in each sector. In some industries, the offer is relatively clear, such as location, office availability, skilled people, and infrastructure. But even where the fundamentals are there, the question remains how to reach the right investors in a more focused and convincing way.

### ***Attracting foreign investment more effectively***

Despite critical remarks about Latvia's investment climate, many foreign investors recognise the country's strengths and call for a better investment promotion strategy for Latvia. Reliance on exhibitions and general visibility alone is seen as insufficient for attracting major international corporations. A more targeted, direct outreach model with a clear value proposition tailored to specific investors and sectors is recommended. Latvia's quality of life, safety, natural environment and cost advantages are seen as underutilised selling points, particularly for attracting international talent and their families.

### ***Quotes of respondents/interviewees from Latvia***

***Other service activities*** – Another priority is improving the effectiveness of investment promotion. Latvia is visible through exhibitions and general promotion, and that can work in some sectors, especially where existing investors already create recognition. But if the goal is to attract major international companies, a more targeted approach is needed. Large corporations are not usually reached through exhibitions alone. A more effective model would involve identifying specific target investors and approaching them directly with a clear value proposition, including tax conditions, real estate options, and other practical advantages.

***Real estate activities*** – The main priority should be attracting the foreign investment. The current geopolitical situation is challenging, but all Baltic countries are in the same position. Relying on internal funding alone will not lead to meaningful economic development. Without foreign investment, it becomes increasingly difficult to finance healthcare, defence, and other public needs. At present, Latvia relies heavily on international funding, around €2 billion per year, which is not a sustainable long-term strategy. Public debt is approaching 50% of GDP, and borrowing costs will increase.

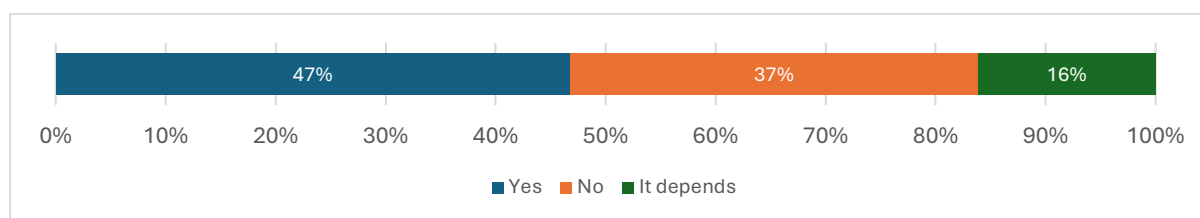
***Education*** – Workforce is clearly important, and so is the cost of employment, because those are what make a location attractive in the first place. Whatever company you set up, you need your workforce, but you also need people who can afford what you sell. So, ultimately it comes down to showing foreign investors that Latvia is still a growing economy. And I think Latvia could still be

*marketed more effectively than it currently is. Latvia could market itself very strongly, particularly to families looking for safety, security, and a good quality of life, including those working in management and business roles. There are many people in that situation who could no longer afford a comparable lifestyle in their home country, but who could have very high quality of life in Latvia. The quality of life comes from the quality of the natural environment, the beauty, the low crime rates, rich culture, relatively good salaries for the management level employees - all of these are genuinely compelling. But this requires a government that is committed to an immigration policy that actively welcomes people, who are not Latvian.*

### 1.5. Further investment plans of the foreign investors in Latvia

When the respondents were asked whether they plan to increase investment in Latvia, only 47% confirmed that they did (Figure 5). This is the **lowest value since 2017, pointing towards a downward trend since 2022 and to an increasing uncertainty among the foreign investors** (Table 8). Those respondents that selected the answer option “it depends” clarified that their decision to invest would depend on geopolitical circumstances, clarity of the political agenda, economic developments in the country, market conditions (demand), predictability of policies, availability of financing mechanisms, particularly for innovation support, and internal company decisions.

**Figure 5: Does your company plan to increase investment in Latvia?**  
(n=63)



**Table 8: Statistics on the percentage of foreign investors that plan to increase investment in Latvia between 2017 and 2026**

Year when the question was posed	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Yes, plan to increase investment	50%	57%	55%	64%	68%	65%	79%	67%	50%	47%
No, we do not plan to increase investment	31%	24%	35%	25%	27%	20%	15%	24%	40%	16%
It depends/Not sure	19%	19%	10%	11%	5%	15%	6%	9%	10%	37%

## Chapter 2: Innovation ecosystem in the Baltics

The current chapter provides the analysis of the innovation ecosystem in the Baltics. First, it presents views of the foreign investors (chapter 2.1), while the perspective of the research community representatives in the Baltic States is reflected in chapter 2.2.

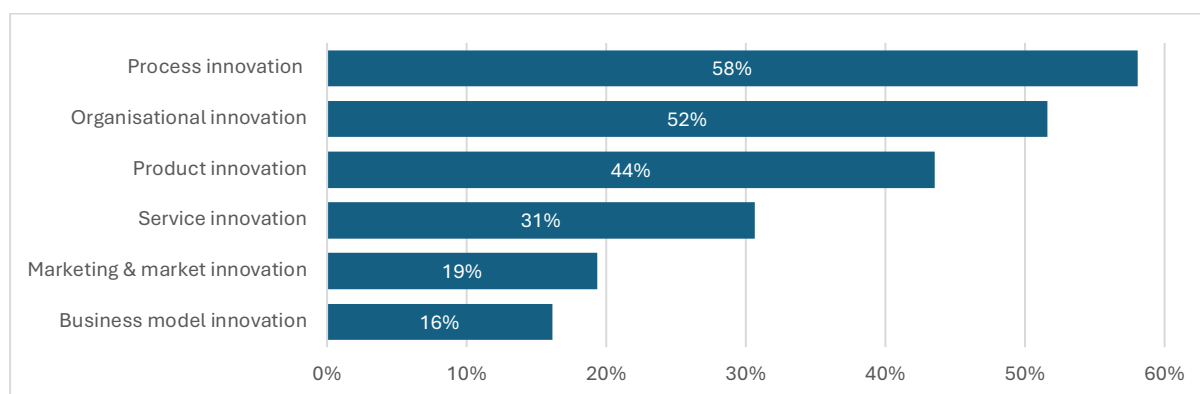
This chapter touches on different topics – R&D&I activities of respondents, assessment of the innovation ecosystem, innovation-driven investment opportunities, and policy instruments, which would untap innovation potential of the Baltics.

### 2.1. Perspective of the foreign investors in Latvia

#### 2.1.1. Foreign investors' R&D&I activities

Prior to the assessment of Latvia's innovation ecosystem, the foreign investors were asked a few questions about the R&D&I activities that they have been conducting over the previous 4-5 years. It is interesting to note that all foreign investors that participated in the survey conducted at least one type of innovation over the designated period. Figure 6 reveals that over 30% of investors have been introducing process, organisational, product and service innovation. In contrast, marketing & market innovation and business model innovation are less common.

**Figure 6: Type of innovation(s) the foreign investors' companies have introduced over the previous 4-5 years**  
(n=62)



During interviews, the foreign investors were asked to elaborate on key R&D&I activities that their company had implemented during the last 3–5 years and share some good practices. The key innovation patterns mentioned by interviewees are highlighted below.

#### ***AI and data analytics***

AI adoption is the single most dominant theme across all sectors and company sizes. Investors describe AI not as a future aspiration, but as an operational tool already embedded in products, processes and workflows. Applications range from customer-facing automation to internal process efficiency, pricing, content creation, and clinical decision support. Several companies note that AI is now a prerequisite for employment — staff are required to complete AI training before they can perform their roles.

### ***Quotes of respondents/interviewees from Latvia***

***Other service activities*** – AI technologies are replacing young labour force. We've hired significantly less employees last year, especially those with limited knowledge and work experience. AI training is a must at our company. You cannot work unless employees have completed the trainings.

***Financial and insurance activities*** – In terms of data analytics, we're implementing a new data warehouse. We're really trying to automate as much as we can. When customers submit applications through an app, we put money into the customer's bank account within 11 seconds.

***Information and communication*** – The main focus has been on process automation and the use of artificial intelligence. Several internal teams have been tasked with automating at least two processes each.

***Human health and social work activities*** – Virtually every core internal business process has been upgraded in recent years, including AI-supported internal workflows.

***Real estate activities*** – We are integrating AI and many other technologies. This affects user convenience, improves business processes and efficiency, increases sustainability and helps to meet several targets at the same time.

### ***Process automation and operational efficiency***

Closely linked to AI adoption, process automation is cited across manufacturing, financial services, logistics, healthcare and professional services. The common driver is the need to process greater volumes with the same or fewer people, by eliminating bottlenecks, removing unnecessary steps, and digitising previously manual workflows.

### ***Quotes of respondents/interviewees from Latvia***

***Manufacturing*** – We are working with the automation of processes. We have robots and automatic conveyors. We use EU funding for the last couple of years.

***Other service activities*** – The pressure is to process more volume with the same number of people, so the main solutions have been automation, process improvement, and review of workflows to remove unnecessary steps and bottlenecks.

***Electricity, gas, steam and air conditioning supply*** – A key example is the implementation of digital twin technology, where approximately 6,000 operational signals are generated from across the facility at any given time. A digital twin system processes all signals simultaneously and makes real-time, informed adjustments to plant operations, resulting in substantial efficiency gains.

***Other service activities*** – The main focus has been on process innovation, automation, and the use of AI and machine learning to improve back-office operations, including IT, finance, logistics, documentation, and legal functions.

***Real estate activities*** – Our company has implemented several process and operational innovations, particularly in the digitalisation of construction processes. This includes the use of BIM and other planning tools to improve construction efficiency and coordination.

### **Digitalisation of products and services**

Beyond internal process improvements, some foreign investors describe significant investment in digitising the products and services they deliver to customers. This includes digital customer platforms, mobile-first service interfaces, personalised service packaging, and AI-driven client tools.

**Human health and social work activities** – *Our main innovation has been the introduction of a digital registration and ordering platform for clients. Now clients can review options, build a personalised service package, and assess suitability remotely and at any time. This significantly improved accessibility and simplified the customer journey.*

**Human health and social work activities** – *One solution supports primary care practices in managing preventive screening more effectively. Another uses combined data from different parts of the healthcare system to help identify patients who may not be meeting treatment targets.*

**Information and communication** – *The organisation has developed an AI selection tool specifically for the Latvian market, which has also been publicly presented. It also provides customised AI solutions tailored to client needs, as well as isolated AI environments to ensure secure and controlled use.*

### **Green and sustainability innovation**

Environmental innovation has been mentioned by many foreign investors, working across the energy, transportation, manufacturing and construction industries. The foreign investors describe a gradual, test-and-learn approach to green innovation, with investments in alternative energy sources, sustainable resource use, and emissions reduction.

#### **Quotes of respondents/interviewees from Latvia**

**Transportation and storage** – *We have introduced some green innovations in our company. It is a step-by-step process. We test one thing, then introduce another. It takes years to decide what and how to integrate, how to innovate.*

**Construction** – *We have developed more sustainable resource hubs, invested in new labs structure with new testing facilities. We have a technology test centre to improve our production processes.*

**Transportation and storage** – *Despite operating in the oil sector, there is active thinking about how to green operations. We have engaged in collaboration around fuel efficiency, operational optimisation, and the exploration of alternative energy sources.*

**Electricity, gas, steam and air conditioning supply** – *The second area of innovation involves the use of residual material from specific production processes, tested for application in forest fertilisation — a practice already established in Finland. This required regulatory changes at the national level.*

**Transportation and storage** – *The company is currently constructing a biogas facility that will use the latest available technology and will be the most innovative solution of its kind in Latvia at the time of completion.*

### Service innovation and customer experience

Several investors, particularly in the education and healthcare industries, describe innovation focused on expanding and enhancing the range of services offered to customers and clients. These innovations are often driven by a detailed understanding of the target audience's needs and behaviours and aim to add genuine value beyond the core offering.

**Education** – We offer around 50 additional activities and services. These include things like scuba diving in our swimming pool where students can earn their PADI certificate, as well as roller skating, biking, and driving theory preparation.

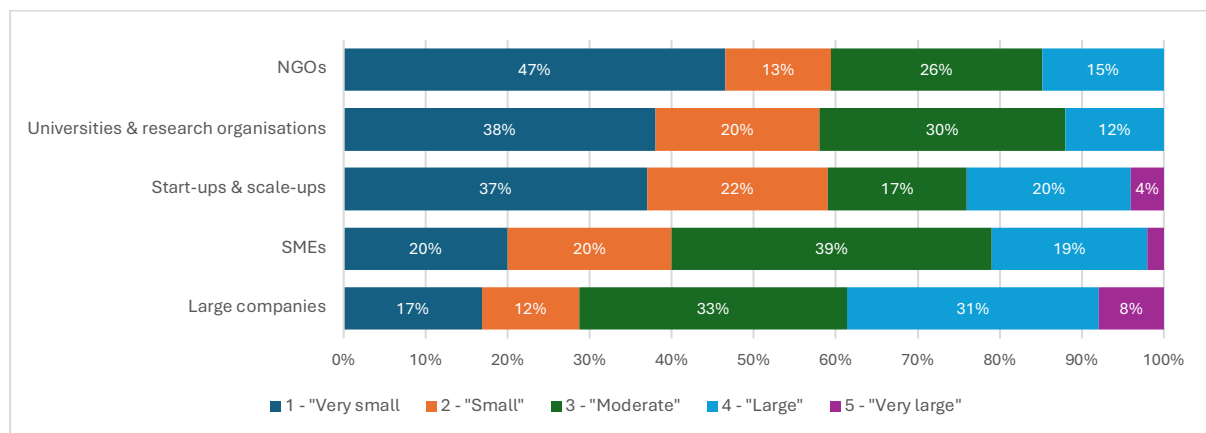
**Education** – We are currently developing a partnership with a local tennis academy to create an elite sports performance programme. Student athletes would train at the academy for the first two hours of the day, then attend school later with a coordinator who plans their lessons around their training schedule.

**Human health and social work activities** – We have changed our approach to communication. This includes a more structured use of social media, the introduction of educational video content, and the adoption of AI tools to support content preparation and meeting planning.

When the foreign investors were asked about the **types of innovation stakeholders** that have been critical for improving innovation in their company over this period, **39% of respondents pointed to a large/very large role of large companies** (Figure 7). Small and medium-sized enterprises (SMEs), start-ups and scale-ups have also been identified as important innovation partners for over 20% of respondents, yet experiences differ among the foreign investors. However, for almost 60% of respondents the role of universities, research and non-governmental (NGO) organisations is considered small/very small. Such results point towards a tendency of the foreign investors to conduct innovation activities in collaboration with other private sector actors.

**Figure 7: Foreign investors’ assessment of the extent to which the following types of innovation stakeholders have been critical for improving innovation in their company over the previous 4-5 years**

Scale 1–5, where ‘1’ means very small and ‘5’ means a very large share in improving your company’s innovation  
(n=62)



Based on the interview data, several foreign investors **describe sustained, long-term investment in building internal R&D capacity**. This includes dedicated R&D departments, data analytics teams, patent development, and internal innovation processes embedded in day-to-day operations. These companies treat innovation as a routine business function rather than a special project, reflecting a fundamentally different organisational culture from those that innovate only when external funding is available.

University-business collaboration features in multiple responses, but the **picture is mixed**. Where collaboration has worked well, it has delivered practical value, such as machine learning solutions and data science capacity. However, a recurring frustration is the cultural and motivational gap between academia and business: researchers are primarily oriented toward publications rather than commercial application, making it difficult and time-consuming to align interests. The most successful collaborations tend to be those where universities proactively approach companies with concrete, practical offers.

#### *Quotes of respondents/interviewees from Latvia*

**Financial and insurance activities** – *Our company collaborates with universities on R&D&I, but the academic world does not see their mission as being useful to the private sector. If research institutions are funded by taxpayers' money, they have to be useful. We pay a lot of taxes, we want to develop new competitive products, and our research institutions have smart people and facilities. Why don't they want to collaborate?*

**Manufacturing** – *For decades, we have been growing R&D&I competences internally and now we have an in-house R&D&I department. In addition, we have some patent innovation that we do on the group level.*

**Information and communication** – *We have been working with several research institutes. It took half a year to align interests and, in the end, it did not make sense for us. Researchers simply want to produce research publications, they want to test theories. Tilde managed to find a good match between research and business — this is a good practice.*

**Other service activities** – *A local university contributed data science capacity, and together a machine learning-based solution was developed around potential business use cases. Collaboration with universities has generally been useful, especially where they actively approach companies with practical offers.*

**Other service activities** – *We help other companies and develop modern solutions, therefore innovation is part of what we do and part of how we live. We innovate each year, and it is a norm. I do not even think about it.*

**Financial and insurance activities** – *We've also strengthened our data analytics team and expanded their area of responsibility. That team itself is expanding in number, but also in capability. It's really quite a growth area for us.*

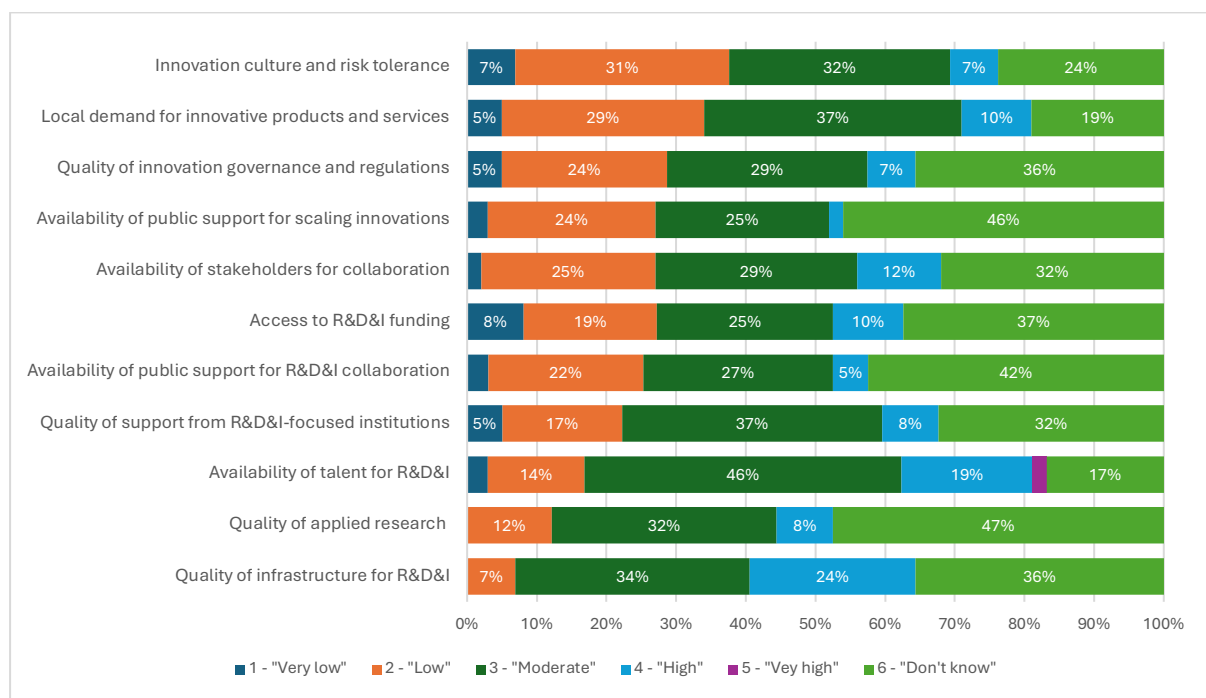
**Manufacturing** – *For some of our projects, we have been collaborating with RTU. It was a good experience.*

**Electricity, gas, steam and air conditioning supply** – *Most of our R&D&I activities are conducted through external partnerships rather than purely in-house. The broader digitalisation work requires data science expertise that is not typically available within the company, which makes collaboration with external specialists essential.*

### 2.1.2. Assessment of Latvia’s innovation ecosystem by the foreign investors

The foreign investors were asked to assess different aspects of Latvia’s innovation ecosystem. Figure 8 indicates that respondents **most positively assess** (from “moderate” to “high” and “very high”) **the availability of talent for R&D&I, quality of infrastructure for R&D&I, quality of applied research, and quality of support from R&D&I-focused institutions**. In contrast, the following aspects of Latvia’s innovation ecosystem have received the lowest assessment: innovation culture and risk tolerance, local demand for innovative products and services, and quality of innovation governance and regulation. However, it is striking that a large number of respondents **struggled to assess most aspects of the innovation ecosystem**, particularly the quality of applied research and the availability of public support for scaling innovations.

**Figure 8: Foreign investors’ assessment of aspects of Latvia’s innovation ecosystem**  
*Scale 1–5, where ‘1’ means very low and ‘5’ means very high in Latvia’s innovation ecosystem.*  
 (n=59)



The interviews with foreign investors revealed that they see Latvia’s innovation ecosystem as **promising, but fragmented**. They have made many positive remarks about the human capital, digital infrastructure, growing technological capabilities, local universities and research institutions, emerging start-up culture, and strategic opportunities in IT, defence, AI, manufacturing, pharmaceuticals and other industries. Moreover, many investors noted that Latvia has made **considerable progress over the last 20–30 years** in terms of innovation and is increasingly comparable with neighbouring Baltic countries. Some highlighted that the ecosystem is “growing stronger” and becoming more visible internationally through initiatives such as startup events and innovation forums.

Nevertheless, most interviewed foreign investors believe that the **innovation ecosystem’s potential is being constrained** by an unclear national innovation strategy, limited coordination and fragmentation of efforts, weak communication on progress, opportunities or achievements,

and a risk-averse culture. While the foreign investors recognise the presence of R&D&I institutions and activities, collectively they do not seem to be working as a well-functioning and well-coordinated ecosystem that capitalises on synergies and multi-stakeholder collaboration, with components reinforcing one another for maximum benefit. Moreover, the interviews revealed that investors are not aware of policy instruments that would foster the creation of such ecosystems.

When the foreign investors were asked to name Latvia's key scientific/technological achievements or innovation-related success cases during the last 4 years, most of them noted that they are not sufficiently informed about them and struggled to respond. This once again confirms a **lack of general awareness of Latvia's innovation ecosystem**, its key achievements and, as a result, potential opportunities. Those respondents who attempted to point to recent scientific/technological achievements or innovation-related successes referred to the development of defence and drone technologies, adoption of AI or development of language technologies, growth of IT and digital services, successful and innovative companies, such as Printful or MikroTik, and praised the work of some universities.

#### *Quotes of respondents/interviewees from Latvia*

**Other service activities**— *Latvia has many promising industries, many promising start-ups. But the number of unicorns in Estonia and Lithuania is higher. This depends on how the government, and all stakeholders are stimulating innovation. This is a question of innovation strategy. The Latvian government is not paying sufficient attention to stimulating innovation, innovation ecosystem development, and is afraid to support a specific industry to boost its innovation potential. But without prioritising one, two or three industries, investors see no clear opportunities in the country.*

*It is a too blurred picture currently – invest in everything, means invest in nothing. Markets, investors need a clear sign – here is an opportunity, come and take it. Once one industry develops, it will boost other connected industries. Not supporting any industry is worse than selecting even the wrong one. I understand it is a difficult political decision, but politicians are paid for making decisions and solving problems, instead of avoiding them.*

**Manufacturing** – *At first glance, the innovation ecosystem is difficult to fully assess—we only scratched the surface. Still, certain patterns are already visible. There is a foundation in place. Startups can access support, guidance, and even funding if they are capable and well-connected. Universities are playing an active role: they are testing technologies, building prototypes, and providing access to design and testing labs. RTU is doing incredible job by the way in helping start-ups. Overall, for those who know how to navigate the system, opportunities exist. At the same time, there is clear untapped innovation and investment potential in Latvia. Many production facilities could significantly improve efficiency through automation and streamlined processes. In some sectors, valuable materials are simply discarded, even though they could be reused in other industrial processes. These missed opportunities highlight a gap between what exists and what could be achieved.*

**Construction** – *LIAA has improved its work in recent years, we see a lot of good initiatives and good communication. Perhaps LIAA should be more active in promoting success stories of Latvia and establish innovation clusters, innovation valleys – ecosystems, where there are multiple actors*

*working in the same field and building synergies. We need such systems, innovation needs an exchange of ideas, alignment, resources, joint infrastructure.*

**Financial and insurance activities** – *We have many companies, organisations and people that innovate, but I would not say that they work in an integrated system, which could be called a functioning ecosystem. Information on who does what is very limited and sometimes it seems that nothing is happening, while then suddenly you go to a conference and find out that Latvia has so many great achievements. It is surprising sometimes, but I wish to be more pleasantly surprised, so it would be perceived as a norm. The Latvian “everything bad.lv” (visslikti.lv) is a bad joke, but very telling about the local mentality.*

**Information and communication** – *Latvia could position itself as an innovation hub, but Latvia needs a success story of innovation – this will create an international brand. Printful is not enough. We try to follow Estonia, but we are terrible at marketing. We have many successes, which we do not know about and terribly communicating. Mikrotik and other companies are doing a great job. LIAA is not communicating enough about success stories. We need a book with such stories.*

**Financial and insurance activities** – *Latvia’s innovation ecosystem is growing, it's becoming stronger. And it feels like, a couple of years ago we were behind our Baltic neighbours, both Estonia and Lithuania. And I think we're at least level with them now, possibly even ahead. Startup organisations are doing good work. TechChill has become quite a big, high profile annual event. There was the recent AI event held at Hanzas Perons with the high-level speakers, which has put Riga on the map. So, I think we're moving in the right direction there.*

**Education** – *Latvia and Estonia - the two countries diverged significantly depending on the paths they chose. Latvia took the more traditional route, while Estonia was far more willing to take risks. And I think that risk aversion is still very present in Latvia today. You see it in the banking sector, for example, which is extremely conservative about lending and very focused on making sure every box is ticked.*

**Transportation and storage** – *The innovation ecosystem in Latvia shows signs of developing. One positive example involves a former lecturer from the Maritime Academy, who began researching ship measurements as part of his teaching work and has since moved to doing this at a commercial level. It is a very specific niche, but it illustrates that something is happening – people build knowledge in academic and commercialise ideas or continue their R&D&I activities in the private sector. More investment for R&D&I is always possible, and more resources could be directed to this, but the picture is not entirely negative in Latvia. I am optimistic about progress and potential.*

**Real estate activities** – *There is a good innovation potential, particularly in collaboration with institutions such as Riga Technical University, where there are ongoing developments and research activities. However, there is a lack of incentives for businesses to invest in innovation. There are no meaningful tax benefits or support mechanisms for companies that invest in R&D. At the same time, there are concerns about the effectiveness of public funding. There is a perception that funds are sometimes allocated without sufficient oversight or quality control, leading to low-value outputs. This reduces trust in the system. As a result, private businesses are hesitant to invest in innovation. This is further compounded by low profit margins in sectors, such as construction and high overall tax burdens, which limit available resources for innovation activities.*

**Human health and social work activities** – *What is missing the most is stronger communication of success stories. Too often, achievements remain fragmented, unknown, or under-promoted. A more visible and accessible platform for highlighting innovation, research, and applied success cases would increase awareness and help connect actors that currently remain isolated from one another.*

When the foreign investors were asked about the **quality of support of R&D&I-focused organisations**, such as clusters, incubators, technology transfer offices (TTOs), the assessment was mixed, ranging from positive examples to suspicions of sub-optimal effectiveness. For many investors it was difficult to assess their work, due to limited experience or information on the outcomes of their work. The dominant perception is that the support organisations do exist, they are visible, yet the **results of their work/contribution are not known**. In view of this, some investors called for a **formal evaluation of their work** to ensure that the government supports only effective structures and concentrates resources where impact is generated.

#### **Quotes of respondents/interviewees from Latvia**

**Other service activities** – *I don't have enough experience about the quality of support of R&D&I-focused organisations in Latvia. But I also don't see their results. What happened to some sandbox initiatives we had? I suspect they try/tried to do something, but this something is simply not enough to ensure that Latvia has great unicorns, innovative projects between the public and private sector.*

**Manufacturing** – *Latvia's innovation ecosystem is very fragmented. There are a lot of institutions, and I am not sure they coordinate well and are well-aligned. In fact, I seriously question if they are aligned. There are some efforts here and there, but it does not seem there is a logic, strategy behind all these institutions. Why do they exist? What do they do? What have they produced over the last 5 years? I think there is a need for a thorough analysis of who does what and why, and then the government should decide where it makes sense to invest.*

**Construction** – *I think the quality of the R&D&I institutions is overall good. There is a technology transfer centre at the University of Latvia. They are working on a technology that we were not aware of, but we were working on a similar technology. Sounds good what they are doing, but they should have been more vocal about it. It could have been a key technology for us. Communication is key. Communication is missing often on who does what, what are opportunities for collaboration.*

**Financial and insurance activities** – *I don't see results of these incubators. I know they create networking opportunities, but I question if they really stimulate innovation. It is critical for start-ups to feel even psychological support, but I would rather vote for a few really strong incubators with great expert support, network to investors etc. than many small and rather useless organisations.*

**Information and communication** – *R&D&I organisations are important, but in the business world it is essential to get a result. Current organisations should be measured by the outcome – where is it? Where are Latvia's unicorns? They are framework organisations, which spend money, they*

*delegate functions, but in essence they request national or EU funding and spend it. No result, no impact.*

**Financial and insurance activities** – *In terms of good R&D&I organisations in Latvia, I immediately think about RTU. My perception is that RTU does some quite interesting work. I'm probably not that qualified to answer this question in detail, but my perception is that we're reasonably well-placed and we're getting stronger in this area.*

**Education** – *I see a lot of activity in the innovation space, including conferences, focus groups, and frequent discussions about innovation. It feels like the infrastructure exists and that things do come out of it. But I cannot point to specific concrete outputs. I know there are various support agencies, and that they are not particularly well funded, but they do exist. The fact that I miss information about their results is worrying me – either there is nothing to report or it is poor communication.*

**Other service activities** – *Support has come only from the academic environment, through information or proposals related to possible innovations and solutions. Nothing comparable has been experienced from other R&D&I organisations or the state side. This seems to reflect a broader issue of unclear state priorities. Some sectors appear not to be seen as strategically important, even when they can bring strong long-term value. For example, service-based operations are sometimes still viewed too narrowly, despite their role in retaining young talent in Latvia and offering international-level work experience without people having to leave the country. There is a need for a clearer government approach to where support should be directed and which sectors should be actively promoted.*

**Information and communication** – *The quality of support depends largely on universities. However, Latvian universities have been declining in international rankings, which is closely linked to human capital challenges. Talented individuals tend to leave for countries offering better salaries and opportunities. In Latvia, it is relatively difficult to build a sustainable career in research, which contributes to talent outflow. The organisation's experience with incubators has been limited, mainly restricted to networking events related to startups. I wish incubators provided more technical expertise and mentoring.*

**Transportation and storage** – *The innovation support infrastructure exists in a modest, but developing form, with individual academics and researchers beginning to commercialise their work. The general impression is that collaboration happens in isolated pockets, driven by motivated individuals, rather through well-structured support institutions.*

**Human health and social work activities** – *In practice, the existing support mechanisms are not especially relevant for this kind of business. What is needed is not small-scale incentive support, but a functional regulatory framework for secondary health data use, together with a clear pathway for procuring and scaling validated pilot solutions.*

Based on the assessment of the innovation ecosystem in Latvia, the survey respondents were asked to suggest **improvements in two aspects of the ecosystem**, which they considered critical. Their suggestions for these critical aspects are set out below.

### ***Innovation culture and risk tolerance***

Most respondents focused on the weakness of Latvia's innovation culture at the level of individuals, businesses, institutions, and the state. Investors point to risk-aversion, scepticism towards experimentation, and penalisation of failure. This cultural conservatism is seen as a fundamental barrier that no funding programme or policy initiative can fully compensate for. To change it, social, innovation and entrepreneurship initiatives are needed at every level: in schools, state institutions, large corporations, and public forums.

### ***Education, talent and skills***

The foreign investors emphasise that Latvia's education system is, to some extent, misaligned with the needs of a modern, innovation-driven economy. This is reflected in shortages of talent in AI, advanced IT, engineering and creative problem-solving. University curricula are seen as slow to update, given technological advancements and changing labour market needs, and there is a strong call for greater involvement of private sector professionals in teaching. The rise of AI and other software developments is flagged as an urgent inflection point — without rapid reskilling and upskilling, there is a risk of structural unemployment.

### ***Access to finance and capital markets***

Access to finance for innovative, high-risk projects is described as a critical bottleneck. Government institutions such as Altum, and commercial banks, tend to favour predictable, low-risk lending that is fundamentally incompatible with genuine innovation. Venture capital remains underdeveloped. In this context, the foreign investors call for a more active capital market ecosystem, better use of European funding instruments, and financial products for innovative businesses that cannot provide financial projections that traditional lenders require.

### ***Business-academia collaboration, ecosystem instruments and research commercialisation***

Overall, investors characterise Latvia's innovation ecosystem as fragmented, with a lack of information on who does what. Current funding structures are criticised for supporting individual organisations rather than ecosystem-building, and for failing to incentivise the cross-border partnerships that would make Latvian innovation more visible and competitive globally. Particular discontent is associated with Latvia's universities and research institutions that operate largely in isolation from the business community, producing research that has limited practical application. Hence, the foreign investors call for stronger mechanisms that would connect academic research with real industry challenges, through joint projects, innovation platforms or industry clusters. Technology transfer and the commercialisation of research outputs are seen as particularly weak.

### ***Strategic focus and effectiveness of R&D&I-focused institutions***

In view of the foreign investors, the lack of a coherent, long-term innovation strategy that would be connected to industrial, research, investment and other policy documents reflects a lack of commitment towards innovation and identification of priorities. Thus, the recommendation is to identify a small number of high-potential industries/sectors, define the barriers that hinder innovation in these industries, and pursue solutions with agility and accountability. In this context, several investors questioned the effectiveness of the R&D&I institutions and, given the closer link to LIAA, suggested reviewing the markets on which it focuses its efforts. The broader message is that support institutions should be proactive, strategically focused, and oriented towards markets where Latvian businesses have genuine potential.

### ***Reducing bureaucracy and regulatory friction***

Administrative complexity and excessive regulation are identified as significant barriers to innovation. Investors describe both national and EU-funded initiatives as bogged down in bureaucracy, and flag overregulation in emerging areas such as AI as particularly damaging — preventing businesses from exploring new technologies at the pace the market demands. The overall call is for a more permissive, results-oriented regulatory environment that enables experimentation rather than constraining it.

### ***Internationalisation and scaling***

Given the limited domestic market, the foreign investors emphasise that additional help in reaching international markets would be valuable to achieve the scale required for introducing innovative ideas and ensuring sustainable growth.

#### ***Quotes of respondents/interviewees from Latvia***

***Information and communication*** – *A lot of businesses are minimising the risk by applying already tried methods and technologies and avoiding investing into R&D themselves. I believe this comes from the lack of innovation culture and lower risk-taking tolerance. This could be influenced by building stronger startup & innovation culture, supported by public sector. Yet to kick this off, we need to make sure that the regulation is in place to support such. As currently even the relatively new areas of innovation like AI tend to be overregulated without giving businesses the possibility to start using it to the full extent.*

***Financial and insurance activities*** – *The education system is the most critical aspect here - we need smart and modern skills, to be able to tackle 'new normal' environment. And second is society's tolerance towards entrepreneurship in general which is very low - we need to admire each and every company which is developing new things, trying to produce something unique with all the support available.*

***Information and communication*** – *Talent availability - limited access to talent mastering AI, long change cycles for updating IT skills offered in universities, too little accent on boosting creative problem solving. More professionals from private sector should be motivated to lead university subjects that are critical to survive in fast paced IT environment and uncertainty driven world. Access to R&D&I funding - during last 10 years, we have not been able to find the EU funding that would match our company's needs. Other countries that have competence centres, for example, Slovakia has been supported by the state aid and has created much more new job positions than we in Latvia without support. Now the momentum has been lost as all IT positions get heavily impacted by AI and only those who master AI skills will remain in this industry going forward. Government should think of reskilling and upskilling initiatives for citizens to avoid having many unemployed citizens who had no access to the AI training and are lacking skills that are highly demanded in IT industry. We are entering an era when 1 Software Developer who masters agentic software development can lead 3-5 robots and get 3-5 times more productive. Those who will not master such skills will lose their jobs quickly. IT industry can be driving economy growth, if supported with skills required can easily add to the financial burden to the country if people will lack skills.*

***Administrative and support activities*** – *Neither banks, nor Altum, are useful. They prefer to credit business which can be budgeted over periods of five years ahead, which is not the case with true innovative projects.*

***Real estate activities*** – *Develop more active capital market ecosystem, supporting also venture capital. Cooperation between educational system and private capital.*

**Manufacturing** – 1. *Strengthening collaboration between business and academia Encourage closer cooperation between companies and universities through joint projects, internships, and research initiatives. Share real industry challenges so that academic research is more focused on practical application. Contribute to the development of innovation platforms and industry clusters.*

2. *Improving the business environment Provide preferential financing (low-interest loans) for companies implementing innovations. Introduce tax incentives to support investment in new technologies and innovation-driven activities.*

**Transportation and storage** – *We need more collaboration on innovation, as most funding is for individual organisations and not for ecosystem building. Synergies, collaboration, exchange of ideas is key. Given a small market, we need more support for internationalisation and initiatives that stimulate partnerships/joint projects, which would better integrate Latvia and boost its competitiveness. Innovation culture...we need to accept risks and experiment. IPR regulation is not sorted out!*

**Agriculture, forestry and fishing** – *Current R&D&I-focused institutions provide very limited actual support for R&D&I. They live on the EU money and do not very useful projects. They do not offer important services for the development of R&D&I and do not foster ecosystem collaboration, development. These institutions should be restructured, and more public resources should be devoted to them to make them truly effective. Otherwise, they just pretend to be useful. Next, support for scaling innovations is needed to access larger market than the Baltics.*

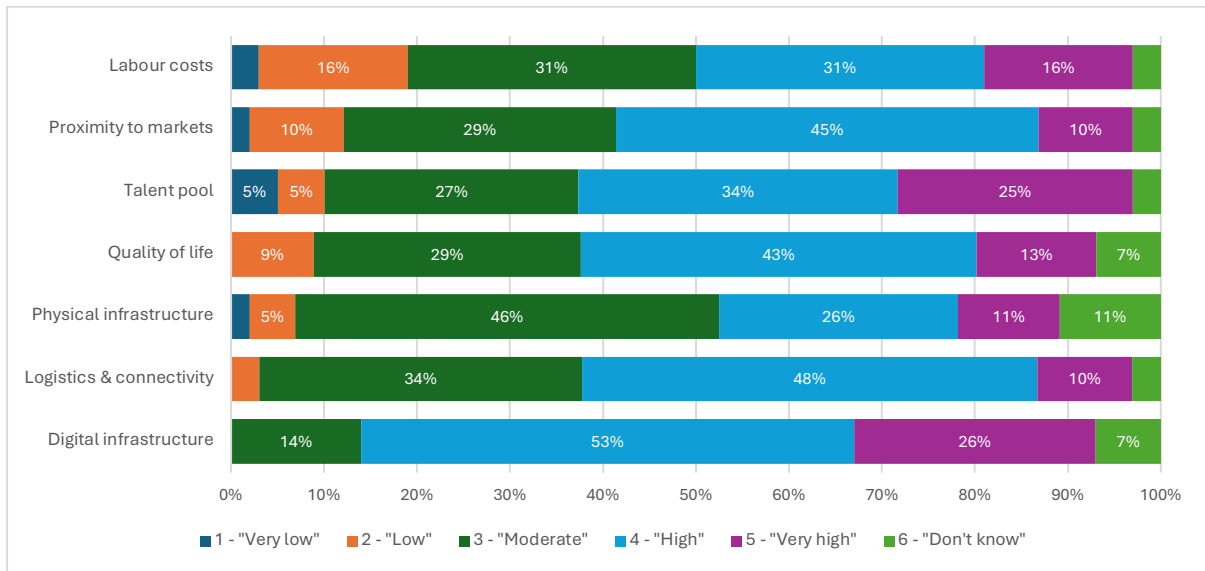
**Manufacturing** – *LIAA should focus on markets, where Latvia has a market and innovation potential. Do not invest in Dubai or other regions, where our products/services will not be competitive. Instead, focus on those, where we have historic ties and where companies are more likely to succeed.*

**Human health and social work activities** – (1) *Innovation culture and risk tolerance: Accelerate innovation adoption by fostering a more experimental, pilot-friendly culture in public institutions, reducing administrative caution, and enabling faster testing and scaling of new solutions. (2) Local demand: Increase demand for innovative solutions by strengthening partnerships in screening and early-diagnosis pathways, removing system bottlenecks, and enabling timely adoption of innovative medicines and technologies across the care.*

Given that in 2025 the foreign investors have selected Top-7 strengths of Latvia's investment climate (see Figure 91), this year they were asked whether these strengths contribute to strengthening the innovation ecosystem in the country. Based on the responses, over 50% of respondents indicated that **digital infrastructure, logistics & connectivity, quality of life, talent pool and proximity to markets** have a high/very high positive effect on the innovation ecosystem. This illustrates that factors which improve the investment climate are also contributing to the innovation ecosystem **in Latvia**.

**Figure 9: Foreign investors’ assessment of the extent to which the following top strengths of the investment climate in Latvia contribute to strengthening the innovation ecosystem**

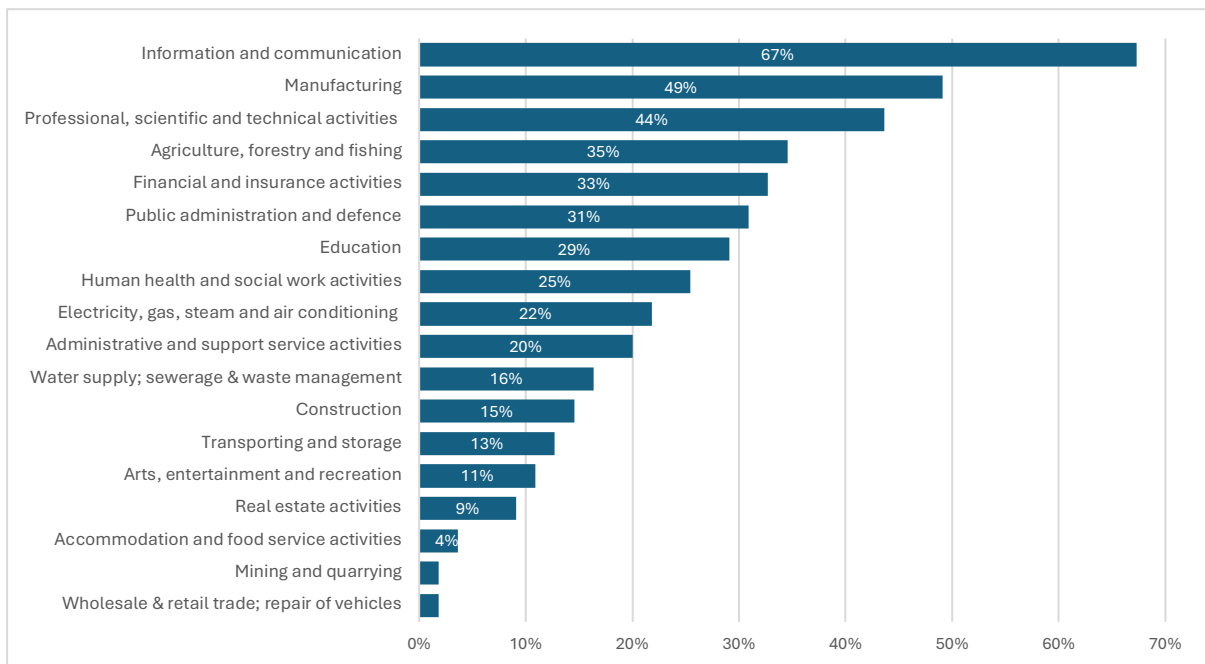
*Scale 1–5, where ‘1’ means very low and ‘5’ means very high impact on strengthening Latvia’s innovation ecosystem  
(n=62)*



### 2.1.3. Innovation-driven investment opportunities

During the survey completion, the foreign investors were asked to select at least three Latvian industries that, in their view, have the highest innovation potential. Figure 10 illustrates that over 30% of foreign investors believe in a strong innovation potential in the following six industries: **information and communication; manufacturing; professional, scientific and technical activities; agriculture, forestry and fishing; financial and insurance activities; and public administration and defence**. It is important to note that 30% of currently surveyed respondents operate in the manufacturing industry, while 13% operate in information and communication. Thus, a small positive bias is possible in terms of the identified industries. The distribution of responses across industries highlights that the foreign investors see investment opportunities in multiple industries and sectors, which is a positive sign.

**Figure 10: Latvia’s industries with the highest innovation potential, based on views of the foreign investors**  
(n=55)



The foreign investors were asked to elaborate on their selection of industries and outline the key current investment opportunities, such as high potential sub-sectors/emerging industries or types of products/services that could be developed in Latvia. The seven key types of investment opportunities suggested by the foreign investors are set out below:

***Defence and dual-use technologies***

Defence is the most frequently cited area of investment opportunity. Investors believe that the country could specialise in the development of drones, robotics, dual-use technologies, secure data systems, AI in defence manufacturing, and medical support solutions. The pan-Baltic dimension is repeatedly highlighted, with investors seeing the region as an emerging defence market with strong collaboration potential.

***Energy, green transition and climate technologies***

Energy is the second most cited cluster of opportunities, encompassing renewable energy generation, storage solutions, energy infrastructure, and the integration of new energy demand sectors. The foreign investors see Latvia's energy transition as a platform for broader innovation, connecting renewables with industries such as data centres, biomaterials, and advanced manufacturing. Offshore and onshore wind, solar, biogas, and battery storage are all specifically mentioned. In the view of respondents, investments in the energy sector are critical for the following reasons: the geopolitical urgency of energy independence, the availability of natural inputs (e.g., wind, solar, agricultural waste for biogas) as novel energy sources, and the fact that energy is an enabler of other industries, meaning its accessibility, cost and associated innovations are critically important.

***ICT, AI and cybersecurity***

In the view of the foreign investors, Latvia is already a European leader in digitalisation, with an advanced digital public services infrastructure, an established talent base, and demonstrated

success cases in both public and private sectors. Thus, the country has a strong foundation for expansion in AI, cybersecurity, fintech, and global business services. Investors highlight the transformative potential of AI across multiple industries, and point to digital health, data-driven services and AI-enabled analytics as particularly high-potential niches. In addition, govtech, edtech, medtech, biotech and defencetech have been repeatedly highlighted in combination with the ICT sector as areas where Latvia could become among the world-class leaders.

### ***Life sciences, healthtech, medtech and pharma***

Multiple investors identify Latvia as a Baltic leader in biotechnologies, health tech, pharma and biomedicine, and call for stronger commercialisation of what is described as a solid scientific base. Medical tourism, particularly dental, plastic surgery and wellness services, is highlighted as an already-functioning export opportunity that could be scaled further. Digital health and AI-enabled care solutions represent an additional opportunity. In the view of interviewees, the demand for products and services in these industries will continue to grow, given the ageing population not only in Europe but globally.

### ***Bioeconomy, agritech and natural resources with high value-added***

Latvia's natural resources (e.g., forests, agricultural land, clean water) have been praised across many interviews with a note that currently the natural riches are not being properly utilised and commercialised. The foreign investors pointed to the contrast between data-driven, efficiency-focused Dutch agriculture and the largely unrealised potential of Latvian farmland. Similarly, several interviewees questioned why Latvia exports raw wood and timber rather than furniture. Thus, the foreign investors call for a shift away from exporting raw materials towards developing value-added products. Agritech, novel food products, wood-based materials, and biogas are cited as specific opportunities. The agriculture sector is also seen as facing competitive pressure within the EU, making innovation and productivity investment a necessity rather than a choice.

### ***Education technology***

Edtech is mentioned by several investors as an underappreciated but strategically critical opportunity, combining Latvia's digital strengths with its higher education base and its need to address skills gaps. Several respondents indicated that edtech is critical for Latvia from two perspectives: first, it would improve the human capital productivity, and, second, it would attract and retain international students and talent as a deliberate migration and knowledge strategy.

### ***Advanced manufacturing and industrial innovation***

Manufacturing is cited as a sector requiring urgent productivity improvement to remain competitive within the EU. The foreign investors point to AI-enabled manufacturing processes, smart materials, photonics and semiconductor design as areas where Latvia has emerging capability.

#### ***Quotes of respondents/interviewees from Latvia***

***Electricity, gas, steam and air conditioning*** – *There is a lot of synergy potential in the defence industry between new companies being established here, existing large defence corporations elsewhere and R&D institutions. In the Baltics it is an emerging market that has not been there before.*

**Construction** – energy innovation ecosystem, bundle different energy related sectors and industries to innovation and investment clusters. Balancing new energy sources with energy storage and new energy demand sectors (e.g. biomaterials, datacentre, energy storage solutions innovation).

**Financial and insurance activities** – Electricity, gas, steam and air conditioning supply: wind energy (offshore and onshore), solar, energy storage solutions. Information and communication: Cybersecurity and Fintech, Global Business Services, Software and AI development Education: Higher education modernisation and digitisation.

**Information and communication** – Defence is a key pillar of the innovation in Latvia as well as has high potential for pan-Baltic collaboration due to very clear joint interest and importance. On top of that, culture sector via arts & entertainment has already delivered strong results (strongest from the Baltics for sure) about its potential including innovation & new technologies (AI). This gives an opportunity to build on the existing success.

**Human health and social work activities** – (1) Information and communication: Latvia can expand high-value opportunities in digital health, data-driven services, cybersecurity and AI-enabled analytics by simplifying compliance requirements, strengthening international AI partnerships, and supporting innovation hubs that connect business, academia and public institutions. (2) Professional, scientific and technical services: Opportunities exist in applied analytics, digital diagnostics support, science-based consulting and clinical-pathway optimisation, particularly where local expertise can link with regional and EU innovation ecosystems. (3) Human health and social work activities: Investment potential lies in strengthening early-diagnosis and screening pathways, expanding digital and AI-enabled care solutions, developing workforce-upskilling platforms, and supporting the adoption of innovative medicines and technologies through more predictable, investment-driven healthcare financing. (4) Defence: Latvia offers opportunities in dual-use technologies, secure data systems and medical-support solutions, which could expand through a more predictable and coordinated investment environment, streamlined permitting, harmonised certification and faster approval processes for strategically important defence and dual-use projects.

**Manufacturing** – Agriculture as very traditional industry is becoming less and less competitive in EU scale, which means to strengthen our regions that heavily depend on agriculture would require more and more subsidies, so innovation and investments would play a key role. The manufacturing sector as well should cope with the productivity levels of average EU member in order not to lose competitiveness in longer run.

**Real estate activities** – Energy production (especially green energy); AI-driven and/or quantum-driven data centres and cybersecurity solutions (especially hardware); drones and robotics; medical services for export (e.g. dental, plastic surgery, wellbeing); everything related to military / defence equipment and technologies that clearly benefit from ample testing opportunity at our military polygons and/or from being so close to the warzone in Ukraine.

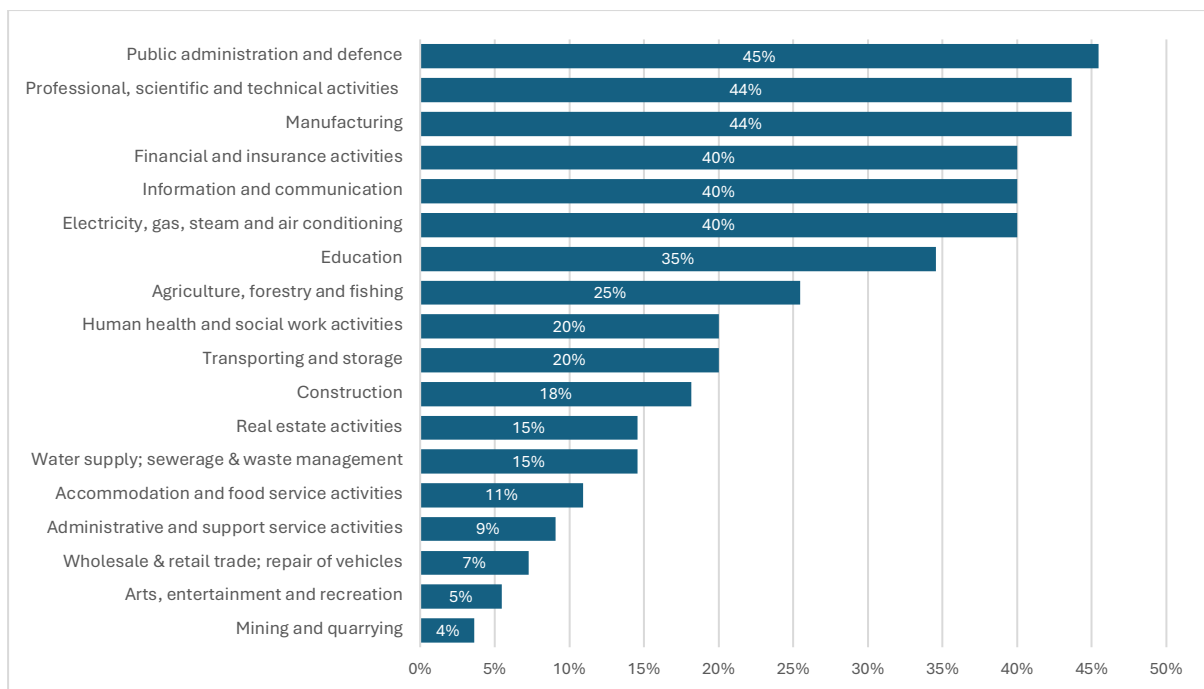
**Professional, scientific and technical activities** – Defence & Dual-Use Technologies is new high growth sector and opportunity. Photonics, Smart Materials & Advanced Manufacturing with such leaders as Light Guide Optics and Sidrabe, RTU is working on semiconductor design. Biomedicine & Pharma with strong science but needs stronger commercialization.

**Information and communication** – Agritech and novel food products (algae etc.), manufactured products from wood and other natural resources. Latvia should produce resources with the high value added. AI brings massive transformative potential to the IT and other industries. Latvia is a (potential) Baltic leader in biotechnologies and healthtech, Pharma. We should capitalise on it.

*Agriculture, forestry and fishing – Endless opportunities, hard to point to one concrete. Defence, med tech, medical tourism, bio economy, agriculture, forestry. Edtech - this is critical - super important combination - IT and education. This would boost Latvia's economic development and allow to uncap potential of young people (hopefully, they will stay here). Manufacturing is missing...Latvia could become an edtech, healthcare and bioeconomy centre of Europe.*

When the survey respondents were asked to select industries that would benefit from stronger R&D&I collaboration with the Baltic States, over 30% of respondents selected the **same five industries** although in a different order, namely public administration and defence; professional, scientific and technical activities; manufacturing; financial and insurance activities; and information and communication (Figure 11). In addition, the top-7 industries also included electricity, gas, steam and air conditioning; and education.

**Figure 11: Latvia’s industries, which would benefit from stronger R&D&I collaboration with the Baltic States from foreign investors’ perspective**  
(n=55)



During interviews, the foreign investors were asked to clarify why they believe the selected industries would benefit from stronger R&D&I collaboration with the Baltic States. In summary, the foreign investors mentioned various joint opportunities and outlined the benefits if synergies were built and forces were joined not only in the economic but also in the political area. Strong Baltic collaboration would credit the entire region with agility, a strong ability to build partnerships, a developing reputation for innovation, and strong human capital in IT. The interviewees have also commented on why, in their view, the collaboration has not materialised, despite obvious shared interests. Political incentives favour national visibility over regional coordination, while the spirit of competition seems to be stronger than that of collaboration. Based on their responses, the following messages emerged:

### ***Scale could boost competitiveness***

The single most prominent argument across nearly all respondents is that the three Baltic States are individually too small to meaningfully compete on a European or global scale in innovation, defence, or advanced industry. The logic is straightforward: collaboration enables scale, and scale enables competitiveness. This view is expressed across various sectors — manufacturing, fintech, IT, retail, logistics, real estate, and healthcare. Respondents from financial services frame it most directly: the ceiling for Baltic ambition, if operating separately, is winning against each other; if operating jointly, it is building a globally recognised brand.

### ***Defence collaboration could boost resilience***

Defence emerges as the most frequently cited sector for regional collaboration, cutting across manufacturing, services, financial, real estate, and utilities respondents. Arguments range from the strategic (a joint Baltic defence posture rather than uncoordinated national strategies, including on issues like land mine deployment) to the economic (defence investment as a regional economic multiplier). Given the geopolitical situation and a shared threat from Russia, collaboration would boost resilience. Multiple foreign investors argue that Russia's military threat creates the perfect condition for real collaboration. However, as noted by some interviewees, even in the face of an existential threat, until now the Baltics have failed to produce a single joint defence project. In addition, strengthening regional food security has also been mentioned by some interviewees as a currently missed opportunity.

### ***Energy and infrastructure would strongly benefit from regional collaboration***

The foreign investors point to various opportunities and benefits of collaboration in the energy and infrastructure areas. To illustrate, electricity grid harmonisation would reduce the significant price divergence across the three countries. In this context, the Baltic electricity interconnection with the EU mainland (desynchronisation from the Russian grid, completed in 2025) is seen as both an economic and security priority. Rail Baltica would boost economic competitiveness and support defence logistics. The border region between southern Latvia and northern Lithuania contains promising large-scale sequestration geology comparable to existing gas storage infrastructure. As offshore European CO<sub>2</sub> storage capacity is likely to become constrained within a decade, early investments in CO<sub>2</sub> storage, research and regulatory frameworks could place the Baltics ahead of the commercial curve.

### ***Baltic digital tigers as a possible international brand***

IT is widely recognised as the Baltic States' strongest shared asset. Multiple respondents argue it should be leveraged as a regional brand, such as "Baltic digital tigers" — a counterpart to the Nordic or East Asian innovation identities. In addition, fintech and cybersecurity are cited as fast-growing areas where combined Baltic capacity could produce world-competitive products.

#### ***Quotes of respondents/interviewees from Latvia***

***Other service activities*** – *Defence and defence innovation is critical for the Baltics. Politicians say – it is safe, it is safe. But let's better be ready for anything and invest in defence, defencetech development and collaborate. At the moment, Baltics do not collaborate enough, they could not create even one joint project, while investments in the defence industries could boost the regional economy and create a more collaborative environment. In addition, the Baltics should create a joint defence strategy, as it does not make sense to put land mines in one country and not to do it in other Baltic States.*

**Real estate activities** – Demography is the most important factor for the development. This is a big reason for investors to go to Lithuania. In Latvia, the market continues to shrink. Lithuania's growth is also rooted in entrepreneurial mindset – it is their cultural orientation. Defence sector cooperation is also critical, there are so many opportunities. We should attract investments as a region for the defence sector. We understand there are differences between the Baltic States, but still we should be partners rather competitors. Retail/wholesale needs scale, therefore Baltics should work together and innovate together. For retail to grow, to be productive and efficient they need scale. Manufacturing also needs access to labour, procurement – everything what goes into the value chain. Each Baltic can specialise in a specific thing, but together they create a strong, competitive and attractive region. For Latvia, it would create a lot of sense.

**Construction** – It would be good to have a common electricity grid, which should be connected to the EU mainland – Baltic interconnected. Now electricity costs are very different across the three Baltics. We should have a connection between the Baltics. Rail Baltica is important. It would affect the business environment, support the security efforts. Finance and insurance – there are different pension systems across the Baltics. There is not enough insurance to avoid poverty of old-aged people. Estonia has already released the second pillar of the pension system. There should be common products for the pension system and a unified approach. Real estate – industrial clusters across borders, electricity parks.

**Financial and insurance activities** – Each neighbour tries to be competitive, but we can work together in the face of joint challenges. Defence industry – we work alone, despite a joint threat. Why can't we buy munition together? Drones can be bought from Ukraine – they are testing technologies and know best how it works. Where is our Baltic collaboration? I think we can only dream about it. I know it is easy to say – go and collaborate, but best collaboration is when you have a lack of money and have a joint challenge. So, we have perfect circumstances, but still prefer to be stubborn and do it our own way.

**Financial and insurance activities** – IT is a Baltic strength, why not sell it as a regional advantage - Baltic digital tigers or something like this? Fintech is definitely growing in the Baltics – same principle. Why not create most competitive fintech products and services in the world. If we work together our ambition can be much higher. At the moment, our ceiling is competition at the Baltic level, which is wrong. If we, as Baltics, work together our target is to create a global brand for the Baltics. This is a win-win, but politicians don't think like businessmen, they like to complicate things and create artificial walls. Transporting and logistics have been historically the Baltic economic advantage, because of our geographic location. Why don't we continue?

**Electricity, gas, steam and air conditioning supply** – Contrary to some views, R&D&I is unlikely to be a primary driver of significant GDP growth for the Baltic states in the foreseeable future. The resources needed to compete at scale with the leading EU regions, the United States, or parts of Asia. More realistic outcomes would be incremental improvements to productivity and efficiency, and the development of exportable solutions in specific niche areas. That said, there is at least one area, where meaningful Baltic collaboration on R&D&I could have a genuine strategic value: CO<sub>2</sub> storage. There are promising potential storage sites in the border region between southern Latvia and northern Lithuania, suitable for large-scale CO<sub>2</sub> sequestration, comparable in concept to existing natural gas storage infrastructure. The CO<sub>2</sub> capture and storage sector is not yet commercially mature, but it is developing. Energy companies are already investing in capture technologies, and the question of where to store CO<sub>2</sub> will become critical within the coming decade. If Latvia and Lithuania do not develop the necessary research base now, they will be years behind when commercial activity begins. Offshore oil reservoir storage options around Europe will eventually run out, and the question of alternative storage locations will become urgent.

**Information and communication** – Although there is no direct organisational experience with Baltic cooperation, one key gap relates to device-level innovation. Cybersecurity is no longer limited to software, but increasingly involves hardware and devices. This is an area that requires

greater attention, as large manufacturers are currently facing significant challenges in finding qualified talent. Strengthening regional collaboration could help address these gaps. Latvia's key strength lies in its human capital, particularly in the IT sector. There is strong potential, a willingness to learn, and the ability to adapt quickly to new technologies. For example, technologies can be adopted within six months in Latvia, whereas in some other countries this process may take up to two years. Another strength is work attitude, with employees showing strong commitment and readiness to work.

**Transportation and storage** – The fundamental argument is one of the economy at scale: the larger the combined market, the better the outcome for everyone, regardless of the specific sector. A larger economy generates benefits across all participants. Food security is one area, where Baltic cooperation makes clear sense. Other sectors, where collaboration would be beneficial include insurance services, manufacturing, accommodation and food services, and transport and storage.

**Real estate activities** – There are areas, where cooperation could be significantly improved. Large infrastructure projects, such as Rail Baltica, are an example. There is limited coordination between countries, despite clear opportunities to standardise procurement and achieve economies of scale.

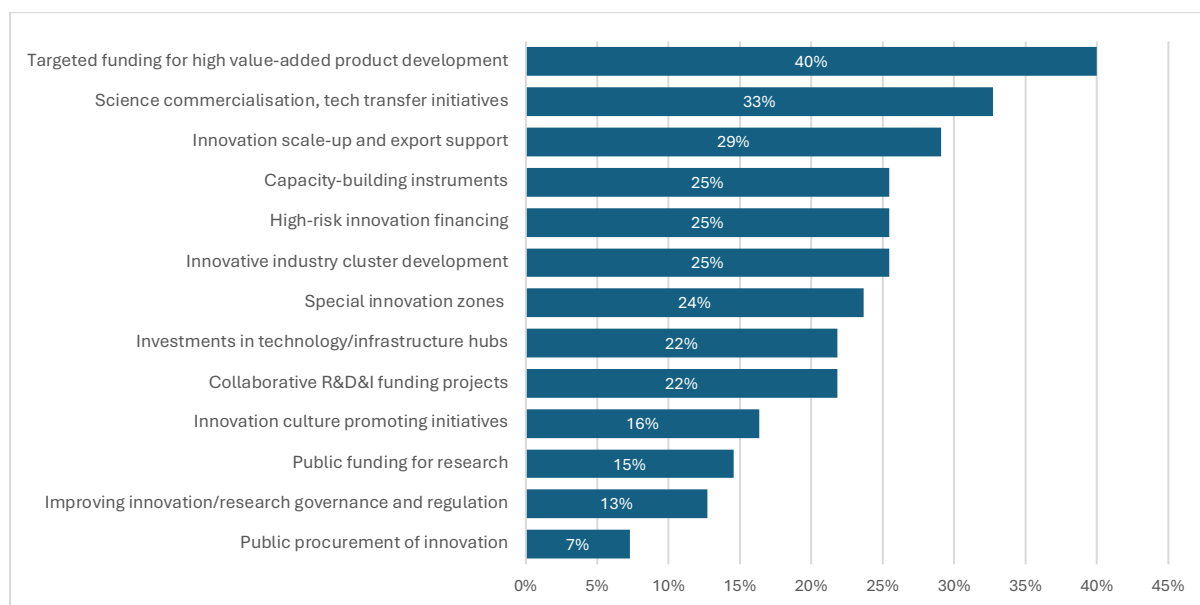
In addition, transparency is an issue. Key project information is often classified, limiting both public understanding and business participation. This reduces efficiency and trust. Overall, while there is both cooperation and competition between the Baltic States, there is untapped potential for more structured and effective collaboration across them. It would be beneficial for everyone, I am sure.

**Human health and social work activities** – Stronger Baltic collaboration could be valuable in many sectors, including manufacturing, medical services, ICT, and business services. The basic logic is that the three countries together create a more meaningful scale and could function as a stronger regional platform, especially in relation to the Scandinavian market.

#### 2.1.4. Policy instruments to untap the innovation potential

The foreign investors were asked to select three types of policy instruments that would unlock Latvia's innovation potential. In the view of respondents, the most effective instruments are: **targeted funding for high value-added product development; science commercialisation, knowledge and technology transfer initiatives; innovation scale-up and export support** (Figure 12). However, other types of initiatives, such as innovative industry cluster development, high-risk innovation financing and capacity-building instruments are also considered crucial by 25% of respondents.

**Figure 12: Types of policy instruments that would untap Latvia’s innovation potential from foreign investors’ perspective**  
(n=55)



When the foreign investors were asked to elaborate on their selection of policy instruments during interviews, the following themes emerged:

### ***Strategic direction and governance***

In the view of interviewees, no policy instrument will deliver results without explicit government priorities on prioritised industries, on innovation and competitiveness. Several note that Latvia suffers from a lack of ambition and competitive orientation, with too much emphasis on regulatory control rather than strategic positioning. Political accountability has also been mentioned: decision-makers should face consequences for prolonged inaction on structural barriers.

### ***Ecosystem development over isolated efforts***

The most widely shared view is that innovation policy must move away from siloed, project-by-project support towards building coordinated, multi-stakeholder ecosystems. The foreign investors consistently argue that innovation clusters that bring together large companies, SMEs, universities, and startups in integrated value chains are far more effective than supporting individual actors. Large companies are seen as the most capable drivers of such ecosystems, given their resources, networks, and risk tolerance. The Finnish model is cited as a concrete example, where government-backed ecosystems focused on R&D intensity and export have delivered results. Startups and universities alone are considered insufficient anchors for ecosystem leadership.

### ***Public funding for R&D and infrastructure***

Multiple respondents highlight Latvia's comparatively low public investment in R&D as a critical constraint. Without public funding to de-risk early-stage research, private investment will not follow. Collaboration between industry and academia is seen as particularly valuable, but it requires companies to bring real problems and data, and public funding to support the research side. Interviewees from the real estate, manufacturing, and transport industries point

to the need for stronger R&D infrastructure as a prerequisite for attracting foreign investment and positioning Latvia as a "smart region" rather than merely a low-cost production base.

### ***Talent, education and innovation culture***

Education and human capital are identified as foundational. Several respondents call for STEM education to be strengthened and for entrepreneurial and innovation thinking to be embedded in school curricula from an early age, noting that teachers are not yet equipped or motivated to deliver this. There is broad concern about Latvia's risk-averse culture: people are quick to criticise new ideas, and failure is poorly tolerated. Respondents argue this mindset must shift, and that it can be cultivated through education, business ventures, and deliberate collaboration platforms. Demographic challenges, such as emigration and a limited talent pool, are also flagged, with smart migration suggested as part of the solution.

### ***Regulatory reform and supportive frameworks***

Regulatory barriers are seen as a significant brake on innovation. The foreign investors call for proportionate regulation, particularly for smaller companies that should not face the same compliance burden as large enterprises. A trust-based regulatory culture is advocated. Regulatory sandboxes are mentioned by multiple respondents as a practical mechanism for allowing companies to test solutions without the full weight of procurement or compliance rules at the pilot stage. The Special Economic Zones (SEZs) with streamlined regulatory environments are also highlighted as an underutilised tool that could be repurposed to drive innovation rather than just manufacturing investment.

### ***Commercialisation, scale-up and export support***

Several respondents note a weak connection between academic research and commercial application. Thus, knowledge transfer mechanisms and science commercialisation support are seen as essential. Scale-up support is identified as a gap, with good ideas struggling to reach market without structured support for growth. In this context, public procurement has been flagged as an underused tool for supporting domestic innovation and helping validated solutions reach wider adoption. Given a limited local market, the foreign investors have been emphasising the importance of going beyond national boundaries, with a Baltic innovation corridor proposed as a way to address the region's scale limitations collectively, sharing infrastructure costs, and strengthening competitiveness relative to larger EU economies.

### ***Quotes of respondents/interviewees from Latvia***

***Transportation and storage*** – *I don't believe start-ups should be the cornerstones of innovation. You need the entire ecosystem activated to ensure innovation happens. Startups have limited experience and few resources, they are like kids that need to be helped. They have potential, but to utilise this potential they need a massive support system. When I think about a functioning innovation ecosystem I think about multiple types of stakeholders that are doing innovation in a coordinated way – they communicate, they collaborate, they achieve results together. Ecosystem is not just a bunch of actors, it is about a coordinated, targeted system of stakeholders. This is what the Latvian government should focus on, not on individual silo efforts. Investments are needed for the real ecosystem development, not just for small projects here and there.*

***Manufacturing*** – *Baltics are seen as a cheap production region. Cost-competitiveness is certainly an advantage, but the region could offer so much more than that. Latvia has smart people, who are willing to work, good logistics/connectivity, but this is something what should be promoted, and the government should invest in strengthening R&D&I capacities, infrastructure. Only then the government can "sell" Latvia or Baltics as a "smart region". Without public investments, the*

private investment will not come. Plus, innovation will not happen if Latvia will not bring more brains to the country. The world is fighting for talent. Majority of investors have offices in many countries. Thus, the local management should convince the headquarters to do innovation exactly in Latvia. So, the government should point to very concrete opportunities for that.

**Construction** – Innovation needs a certain critical mass of companies and technologies to boost innovation, so companies can benefit from each other. These companies could cooperate with universities and then develop the centres of excellence. Big core innovator/investor should become drivers of the innovation ecosystem, integrating smaller companies and universities into the value chain. In such situation, everyone will benefit and the big company, which has a capability to connect stakeholders, manage an innovation project/ecosystem, and take bigger risks, could drive innovation forward and build an ecosystem around itself. A small company or a start-up cannot do it. Such ecosystems work well in Finland: the government supported a creation of innovation ecosystems, which focused on R&D intensity and export. For example, for the development of battery technologies – you need a big investor, who would use it and connect smaller players.

**Electricity, gas, steam and air conditioning supply** – Latvia already has a national regulatory basis for Special Economic Zones (SEZs), with relevant provisions also at the EU level. SEZ could be a great innovation-driving instrument. Liepāja and Valmiera both have established SEZs that offer reduced tax rates and a more streamlined regulatory environment, supporting investment and creating synergies within those areas. To date, these zones have primarily been used to attract manufacturing investment.

**Education** – Looking at the current education curriculum, even with the 2030 plans for Latvian state education, there is still very little in this area, partly because teachers are not yet prepared or motivated to teach innovation. That kind of thinking is hard to cultivate if it does not start young. There is also something broader in the culture that needs to shift. People here can be very quick to criticise and be negative about new things. Rail Baltica is a good example: yes, there have been problems, but when it is finished, it will be remarkable. Rather than focusing on what went wrong, it would make a real difference if people got behind the vision. The same goes for other achievements that deserve recognition rather than criticism. There needs to be a broader cultural shift in how people relate to trying things and the possibility of failing.

**Other service activities** – There also needs to be much greater clarity about what exactly the state wants to support, in which areas, and how that support will be implemented in practice. It is not enough to define priorities on paper. There must be dedicated people working on them every day. If innovation is seen as a priority, then resources need to be assigned to identify the most promising areas, understand what companies need, connect the right actors, and provide ongoing support. Without that, companies and startups end up spending their own time trying to navigate the system and find relevant support.

**Information and communication** – A regional approach is also essential. The idea of a Baltic innovation corridor reflects the need to address innovation at the regional level, as the Baltic States currently lag behind countries such as Germany and France.

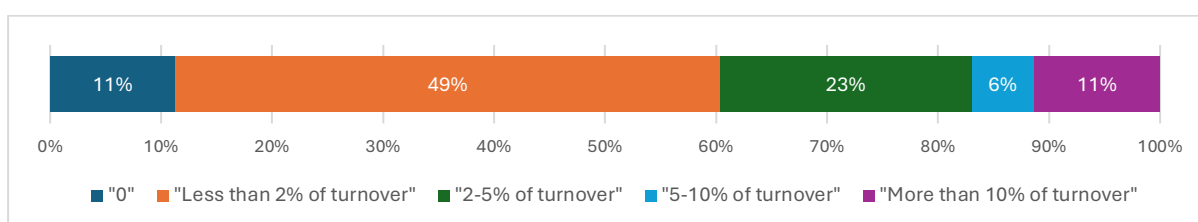
**Transportation and storage** – Science commercialisation and knowledge transfer is an essential instrument. The ship efficiency improvement project is a concrete illustration of how this works in practice. The research task came from the company, driven by its interest in reducing fuel consumption costs. Universities then developed models based on real operational data provided by the company. That data was crucial. For any meaningful innovation to happen, collaboration between industry and academic institutions is essential, and that collaboration requires industry to provide real problems and real data. There is an encouraging trend of researchers and lecturers proactively approaching companies with proposals for what they could investigate, and the model works when both sides engage.

**Real estate activities** – For sure, increased public funding for R&D&I would be very important. At the moment, the level of funding in Latvia is significantly lower than in the other Baltic countries, and this directly limits the development of new ideas and technologies. There is clear potential, for example, in cooperation with institutions like Riga Technical University, where new solutions are being developed, but without sufficient funding these opportunities are not fully realised.

**Human health and social work activities** – Collaborative R&D and innovation funding through co-financed projects is useful, as is investment in technology infrastructure. But the issue that underpins everything else is the governance and regulation of secondary health data use. This kind of innovation depends on data, and without a clear legal framework, projects remain difficult to scale. A regulatory sandbox is also needed, so that companies and their partners can test solutions in a defined environment without facing the full burden of procurement rules already at the pilot stage. At the moment, even when a pilot has been validated in practice, there is often no clear path for it to move into wider public adoption. That gap between successful testing and actual scale-up remains a major obstacle. Support for startups and smaller innovation partners is also important. Small-scale early funding can make a real difference in helping them test and develop solutions that could later be implemented more broadly.

Lastly, the foreign investors were asked: “If the above-selected policy instruments were provided in Latvia, how much would your company's investment in R&D&I activities increase during the next five years?”. Figure 13 reveals that 49% of respondents would increase their investment in R&D&I activities by **less than 2% of turnover**, while 40% would increase it by over 2% of turnover. Only for 11% of respondents the provision of innovation-related policy instruments would not affect their R&D&I investments. Thus, **the innovation-policy instruments would play an important role in stimulating innovation activities at foreign-owned companies.**

**Figure 13: If the above-selected policy instruments were provided in Latvia, how much would your company's investment in R&D&I activities increase during the next five years?**  
(n=53)



## 2.2. Perspective of the research community in the Baltic States

### 2.2.1. Research participants' R&D&I activities

The representatives of research community were asked about the R&D&I activities of organisations that they represent. Table 9 displays the industries more closely connected with universities and research institutions across the three Baltic countries. The results show that **applied research is concentrated in a relatively limited number of sectors**, especially professional, scientific and technical activities, education, agriculture, manufacturing, health, ICT, and environmental services.

Some industries with an important role in the economy still have a marginal interaction with the research and innovation capabilities of universities and research institutions. Retail, accommodation and food services, arts and entertainment, real estate, and, in the case of Latvia, construction, appear weakly represented. This suggests that the **process of innovation is not yet reaching all sectors**, where productivity gains and new value propositions could be developed.

There is a clear dominance of education, professional services, agriculture, health, ICT, manufacturing, and environmental services. Further research would benefit from exploring the quality of these collaborations, and whether they are producing scalable innovations, new products, stronger productivity, or mainly project-based cooperation with limited market absorption.

Certainly, the Baltic innovation ecosystem should not only measure the number of sectoral connections, but also the depth of cooperation, the type of stakeholders involved, and the capacity of each collaboration to become an anchor for a stronger value proposition in the market.

**Table 9: Statistics on the number of industries in which Latvia's, Estonia's and Lithuania's researchers' organisations produced applied research last year**  
(n(Estonia) = 26; n(Latvia) = 36; n(Lithuania) = 35)

Industry	Estonia	Latvia	Lithuania
Accommodation and food service activities	4%	3%	20%
Administrative and support service activities	23%	8%	17%
Agriculture, forestry and fishing	42%	25%	34%
Arts, entertainment and recreation	8%	6%	14%
Construction	27%	3%	14%
Education	46%	47%	37%
Electricity, gas, steam and air conditioning supply	23%	11%	29%
Financial and insurance activities	12%	14%	23%
Human health and social work activities	31%	28%	29%
Information and communication	27%	31%	40%
Manufacturing	31%	25%	34%
Mining and quarrying	8%	0%	0%
Other	4%	14%	9%
Professional, scientific and technical activities	50%	50%	54%
Public administration and defence; compulsory social security	19%	25%	34%
Real estate activities	12%	6%	6%
Transportation and storage	23%	8%	20%
Water supply; sewerage; waste management and remediation activities	38%	19%	34%
Wholesale and retail trade; repair of motor vehicles and motorcycles	0%	3%	6%

When researchers were asked to identify the **top industries in terms of applied research last year**, the three Baltic countries present **different profiles**, but also some shared priorities

(Table 10). **Manufacturing** appears as a strong common field across all three countries, particularly in Latvia, where it dominates the responses.

Latvia shows a strong concentration in manufacturing, agriculture, financial and insurance activities, health, transportation, ICT, and professional services. Estonia shows a more visible role for manufacturing, electricity and energy, construction, and ICT. Lithuania highlights ICT, manufacturing, agriculture, energy, water and waste management, and professional services.

The results show that **each country has its own sectoral specialisation, but the similarities are strong enough to consider Baltic-level vertical initiatives**. Manufacturing, ICT, agriculture, health, energy, and professional services could become the basis for coordinated programmes that build critical mass, connect research capacity with industry demand, and attract stronger private and international partners.

The main strategic question is whether these sectors are being used only as areas of cooperation, or whether they are being developed as platforms for innovation and stronger value propositions for Baltic competitiveness.

**Table 10: Top industries for which researchers' organisation has produced most applied research last year**

(n(Estonia) = 23; n(Latvia) = 35; n(Lithuania) = 34)

Industry	Estonia	Latvia	Lithuania
A – Agriculture, forestry and fishing	0%	43%	38%
C – Manufacturing	43%	89%	47%
D – Electricity, gas, steam and air conditioning supply	26%	0%	29%
E – Water supply; sewerage, waste management	4%	0%	29%
F – Construction	26%	9%	15%
H – Transportation and storage	0	23%	6%
J – Information and communication	13%	23%	50%
K – Financial and insurance activities	0	43%	3%
M – Professional, scientific and technical activities	4%	23%	26%
O – Public administration and defence	4%	3%	15%
P – Education	13%	6%	9%
Q – Human health and social work activities	4%	26%	6%
R – Arts, entertainment and recreation	4%	3%	3%

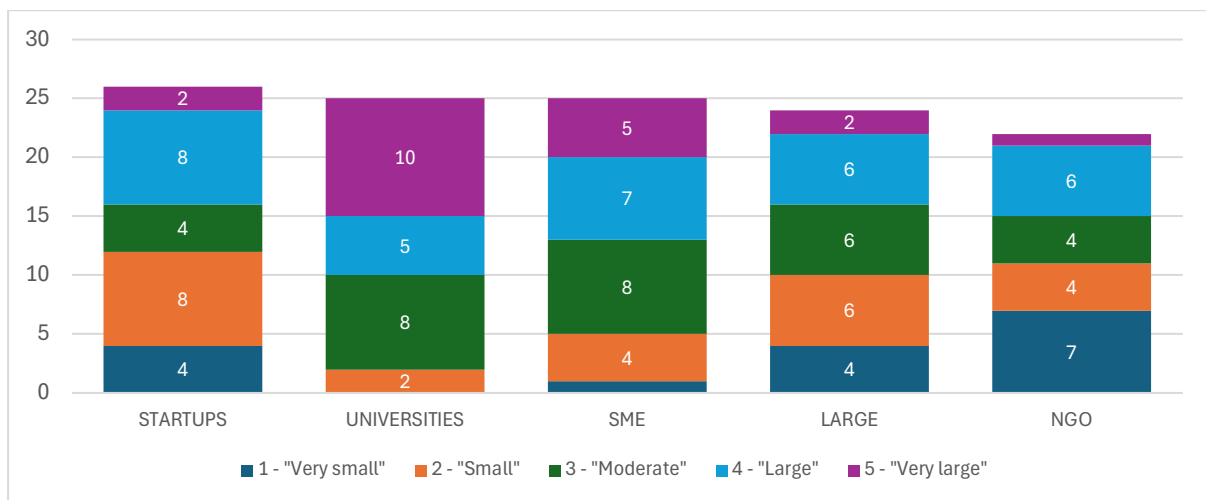
In terms of the stakeholders identified as critical for research and innovation, **the results are quite similar across the three Baltic countries** (Figure 14, Figure 15, Figure 16). Other universities and research institutions are among the most important partners, while SMEs are also highly relevant. This confirms that the **current R&D&I ecosystem is still largely organised around academic and smaller business networks**.

Large companies and start-ups appear as relevant, but not dominant, cooperation partners for research organisations. This is important, because these actors often have greater capacity to provide market access, private funding, scaling capabilities, applied research agendas, and links to global value chains.

The pattern suggests that the participation of stakeholders follows the general structure of the Baltic economies, where **SMEs and public institutions play an important role**. However, from the perspective of innovation leadership, the **current configuration may not be sufficient to move from cooperation to scale-up**. The ecosystem needs stronger orchestration so that universities, SMEs, start-ups, large companies, public institutions, investors, and international partners are involved around a shared innovation agenda.

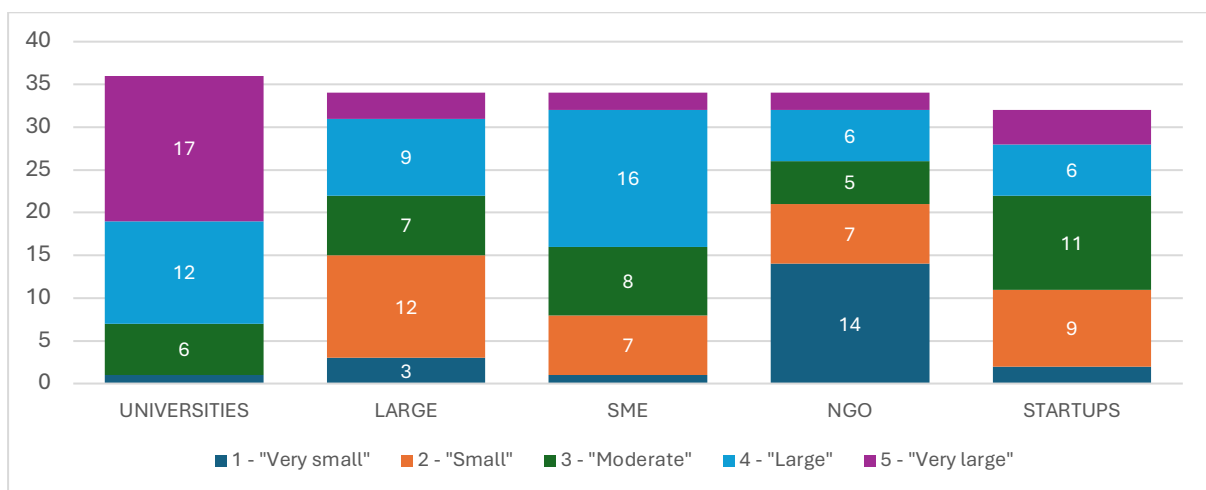
**Figure 14: Estonia’s researchers’ assessment of the innovation stakeholders that have been critical for conducting R&D&I activities in their organisation over the previous 4-5 years**

*Scale 1–5, where ‘1’ means very small and ‘5’ means very large share on conducting R&D&I activities in their organisation*  
(n = 25)



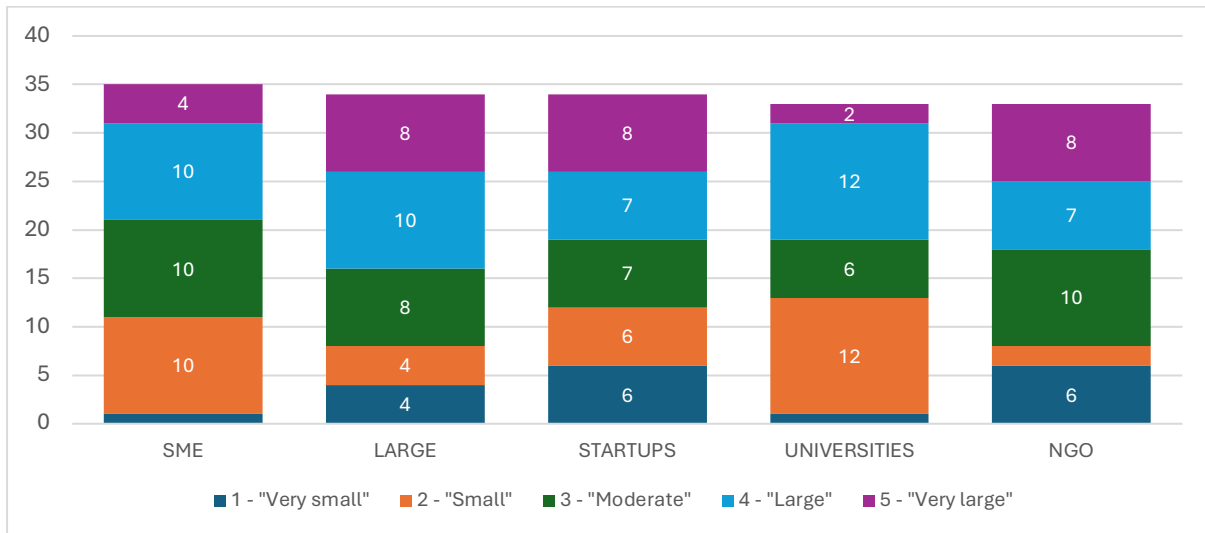
**Figure 15: Latvia’s researchers’ assessment of the innovation stakeholders that have been critical for conducting R&D&I activities in their organisation over the previous 4-5 years**

*Scale 1–5, where ‘1’ means very small and ‘5’ means very large share on conducting R&D&I activities in their organisation.*  
(n = 34)



**Figure 16: Lithuania’s researchers’ assessment of the innovation stakeholders that have been critical for conducting R&D&I activities in their organisation over the previous 4-5 years**

*Scale 1–5, where ‘1’ means very small and ‘5’ means very large share on conducting R&D&I activities in their organisation*  
(n = 35)



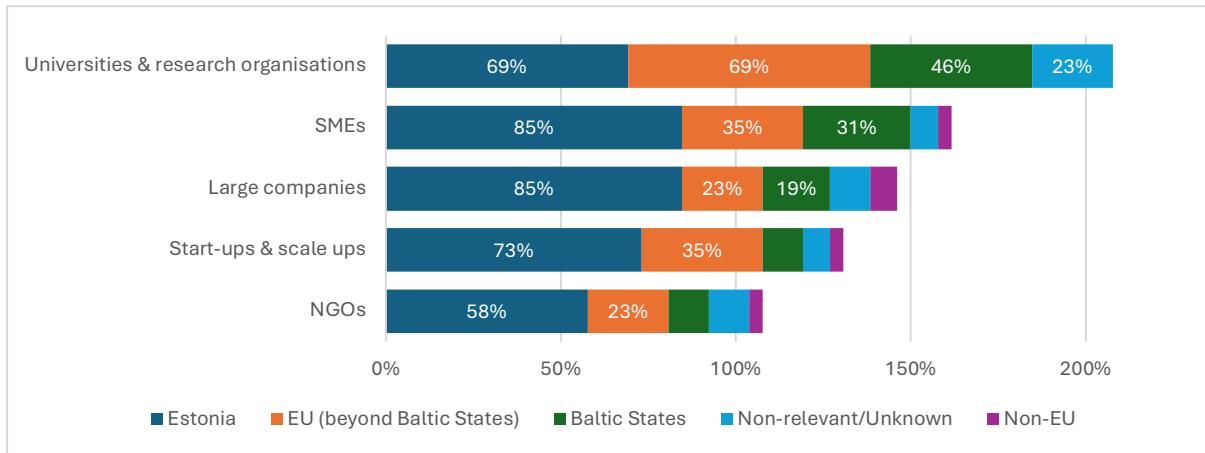
When the researchers were asked to indicate the geographic location of their most critical R&D&I collaboration partners over the previous 4-5 years, the results indicate that they are largely partnering with **local companies and organisations**. This shows that **national ecosystems remain the main reference point for R&D&I cooperation**, and that universities and research institutions continue to play an important role in domestic innovation networks.

Estonia and Lithuania also show a significant level of cooperation with universities and research institutions in the EU, outside the Baltic States. This is positive, because it connects local research capacity with broader European knowledge networks. However, the participation of companies and institutions from outside the EU and the Baltic States remains marginal across the region.

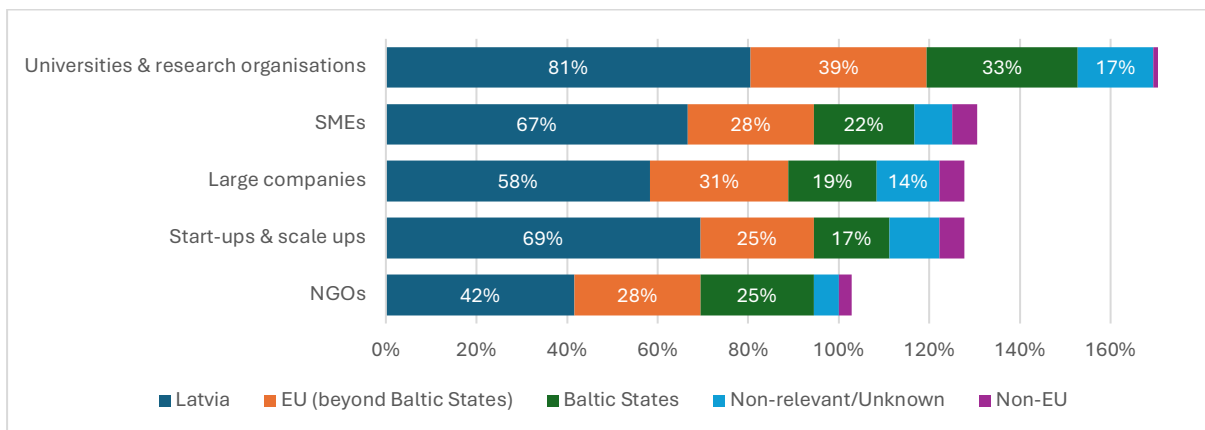
This limited global reach is a **strategic weakness**. The Baltic States may be missing opportunities offered by global corporate and scientific communities, especially in the United States and Asia, where large companies, research laboratories, venture ecosystems, and advanced technology clusters could support more ambitious innovation goals.

The results suggest the need for a **more comprehensive internationalisation strategy**. Baltic research institutions should not only participate in the European networks, but also seek structured collaboration with global industry leaders and leading scientific groups in areas where the region already has capabilities or can develop a distinctive value proposition.

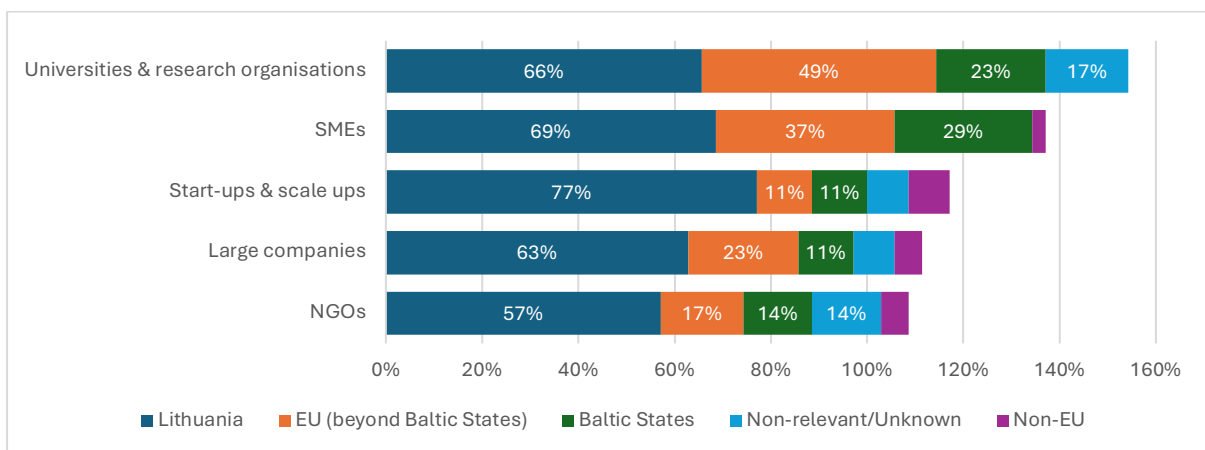
**Figure 17: Geographic location of Estonian researchers' most critical R&D&I collaboration partners over the previous 4-5 years**  
(n = 25)



**Figure 18: Geographic location of Latvian researchers' most critical R&D&I collaboration partners over the previous 4-5 years**  
(n = 34)



**Figure 19: Geographic location of Lithuanian researchers' most critical R&D&I collaboration partners over the previous 4-5 years**  
(n = 35)



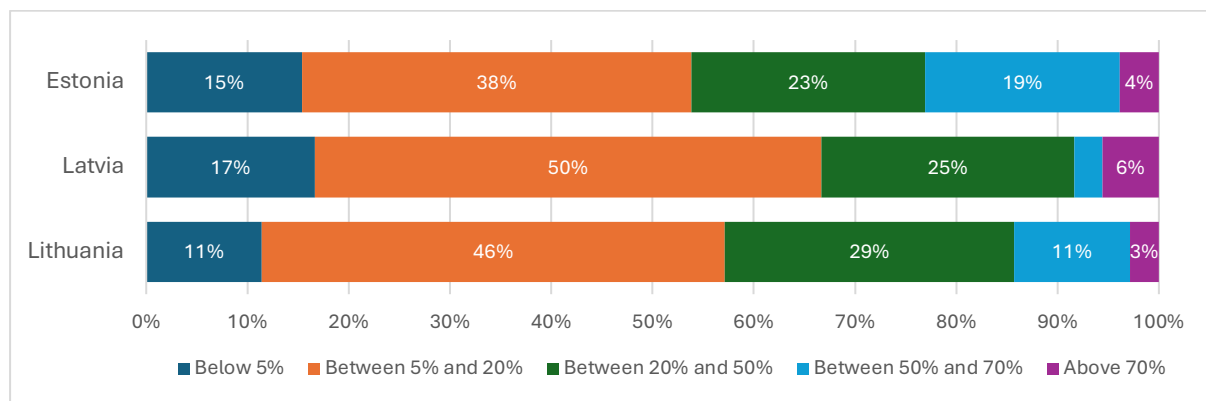
In the survey, the Baltic researcher community representatives were asked: “On average, how much of your organisation's R&D&I activities are conducted in collaboration with the private sector?”. Based on Figure 20, the **participation of the private sector in the R&D&I work of universities and research institutions is still low**. This reinforces the perception that research and innovation activities across the three Baltic countries **remain heavily dependent on public funding, public programmes, and institutional cooperation**.

The low level of private sector participation creates a vacuum in terms of private funding, market validation, and access to companies with established research and development departments. This is particularly relevant, as most of the current company partners appear to be local SMEs, which are important for the economy, but often have limited capacity to finance research, absorb innovation, and scale new solutions.

**This situation limits the diffusion of innovation from the research system into the market.** Without stronger participation from companies with financial, technological, and commercial capacity, universities and research institutions may struggle to transform research results into high-added-value products, services, and ventures.

The data suggests the need to design new cooperation schemes that make private-sector collaboration more attractive, reduce barriers to engagement, and prioritise sectors and companies that can provide stronger market access, financial support, and scaling opportunities.

**Figure 20: On average, how much of your organisation's R&D&I activities are conducted in collaboration with the private sector?**  
 (n(Estonia) = 26; n(Latvia) = 36; n(Lithuania) = 35)



To understand the reasons behind limited collaboration between the research and private sectors, the respondents were asked to identify and assess the extent to which specific factors might limit the ability of their organisation to conduct R&D&I activities in collaboration. Based on the survey results, the most important barriers include the **lack of private and public funding, weak cooperation capabilities in both research institutions and companies, significant administrative burden, and an evaluation system that does not reward engagement with industry** (Figure 21, Figure 22, Figure 23).

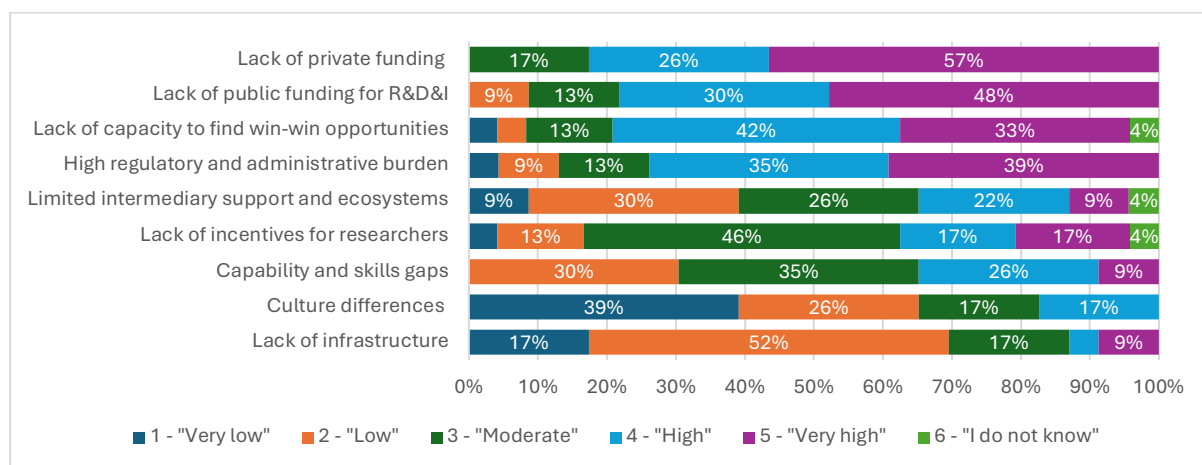
These barriers suggest that the challenge is **not only financial, but also organisational and cultural**. Cooperation between science and industry requires capabilities for dialogue, translation, project design, intellectual property (IP) negotiation, and mutual understanding of timelines, risks, and success indicators.

The results indicate that Baltic universities and research institutions **need to develop more systematic capacities for industry engagement**. Training researchers to communicate with companies, understand market needs, and co-create value propositions is crucial for keeping research connected to the market and maintaining long-term stakeholder engagement.

The barriers also show why **ecosystem orchestration is essential**. If funding, incentives, administrative procedures, and cooperation capabilities are not aligned, the innovation process becomes fragmented. A more coordinated approach is needed to reduce friction and create smoother pathways from research to commercialisation and societal impact.

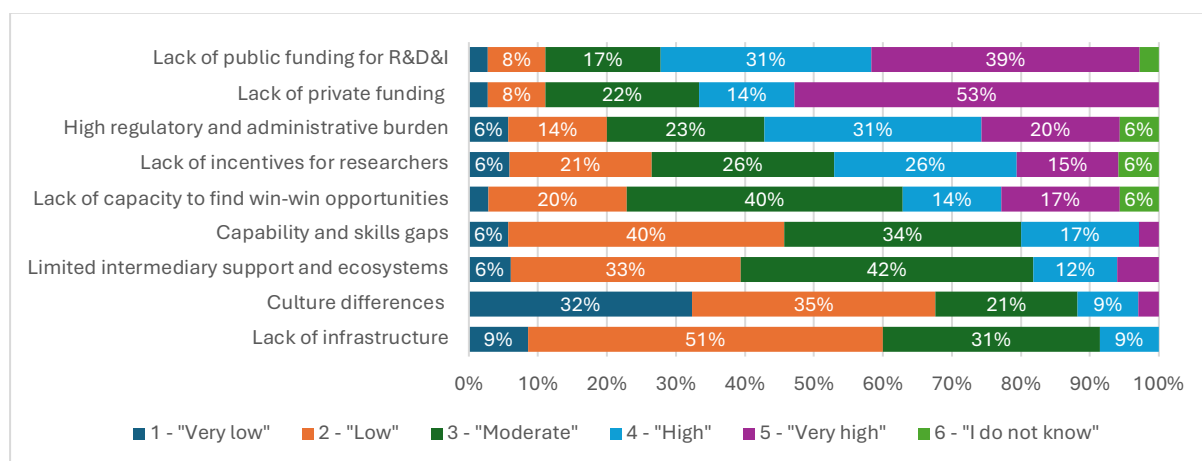
**Figure 21: Estonian researchers' view on the extent to which the below-listed factors limit the ability of their organisation to conduct R&D&I activities in collaboration with the private sector**

*Scale 1–5, where '1' means very low and '5' means very high limitation on conducting R&D&I activities in collaboration with private sector*  
(n = 24)



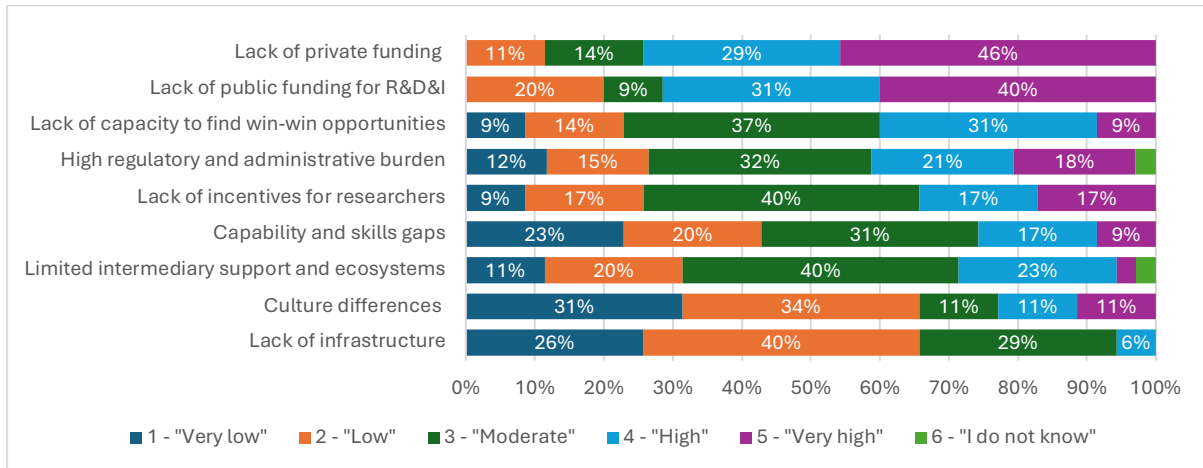
**Figure 22: Latvian researchers' view on the extent to which the below-listed factors limit the ability of their organisation to conduct R&D&I activities in collaboration with the private sector**

*Scale 1–5, where '1' means very low and '5' means very high limitation on conducting R&D&I activities in collaboration with private sector*  
(n = 36)



**Figure 23: Lithuanian researchers' view on the extent to which the below-listed factors limit the ability of their organisation to conduct R&D&I activities in collaboration with the private sector**

Scale 1–5, where '1' means very low and '5' means very high limitation on conducting R&D&I activities in collaboration with private sector  
(n = 35)



During interviews with representatives of the research community in Estonia, Latvia and Lithuania, they were asked about the motivation to conduct applied research, R&D&I activities in collaboration with different types of innovation ecosystem actors (particularly with the private sector) and to elaborate on reasons behind a high or low motivation. In summary, the comparative analysis on motivation to conduct applied research and collaborate with other stakeholders reveals the following:

- **Publication-based evaluation systems** are the primary structural barrier to industry collaboration in all three contexts, creating a misalignment between researcher incentives and private sector needs;
- **Personal relationships and trust** are consistently identified as the most effective foundation for collaboration, regardless of formal mechanisms;
- **Cultural resistance among researchers**, viewing applied work as less legitimate than fundamental science, is a shared challenge;
- **EU and national funding** plays an important enabling role across all three countries, but is also associated with administrative burden;
- **Large companies** are generally more capable and structured partners than small ones.

Below is a summary of their responses, presented by country.

### ***Estonia***

Estonian respondents paint a nuanced picture, outlining the distinction between public and private research organisations. In their experience, public universities operate on long-term scientific agendas, prizing publications and methodological depth, which makes them **slow and inflexible partners for industry**. In contrast, private research organisations function more like consultancies that are demand-driven, commercially funded and structured around solving specific client problems. Thus, the quality and speed of collaboration with industry depend heavily on the type of research organisation.

A standout feature of the Estonian context is the **government's R&D&I funding programme for companies**, introduced around five years ago, which respondents describe as transformative. The programme provides R&D&I funding for companies, which, in view of interviews, has meaningfully stimulated collaboration with both public and private research organisations. This is seen as an effective instrument, although respondents express concerns about its continuity.

Institutional obligation also plays a role: some interviewees noted that industry collaboration is a formal requirement, reinforced by a new European competitiveness framework. However, researchers are candid that **institutional mandates alone do not change culture**. In view of the interviewed researchers, the **cultural gap between researchers and industry is significant** — scientists prioritise methodological rigour, while companies want fast, "80% perfect" solutions. The effort to shift this mindset is described as a slow and difficult process, with new researchers often needing explicit persuasion about the value of industry engagement. In view of interviewees, some researchers do not even regard collaborative applied work as "real science". **Trust** has been identified as the decisive factor for collaboration. Geographically, most Estonian organisations remain domestically focused, with limited cross-border collaboration.

#### *Quotes of respondents/interviewees from Estonia*

*In the research landscape, public universities and private research organisations operate according to fundamentally different logics.*

*In a public research or university setting, research is typically driven by a central idea or long-term scientific focus. Teams and partners align around this core direction, and researchers tend to stay within their established fields of expertise. The emphasis is on continuity, depth, and advancing knowledge within a defined domain. However, this also makes universities relatively slow and less flexible when responding to rapidly changing or highly specific external needs. This is why companies often complain that they cannot work with universities on R&D&I activities – two different worlds, two approaches, two goals in mind.*

*Public research organisations are focused on research, methodology and publications as a key output. Companies are focused on commercialisation, application/applicability, profit. By contrast, private research organisations are driven primarily by client demand. [...] The work of the private research organisations is similar to consultancies – they operate on a demand-basis, provide a follow-up support to companies, which many times is really important as companies do not have large research or data science teams. So, private research organisations can be much better partners for the companies. [...] Typically, around two-thirds of activities are commercially funded, while one-third is dedicated to scientific research and publications. Meaningful scientific questions often emerge directly from industry needs, therefore commercial work feeds into academic research.*

*Around 5 years ago the Estonian government has launched the R&D&I funding programme for companies. This way the government supports companies in carrying out research and development activities. Companies are free to choose how they will implement these R&D&I activities. [...] Of course, if companies want a fast, tailored solution they are more likely to approach a private research organisation. However, if they have a few years and solutions is related to fundamental science then they will prefer to collaborate with the public institutions. Ultimately, the difference in collaboration between public and private research organisations comes down to speed, flexibility, and orientation.*

*This Estonian R&D&I programme is super important, and I hope it will continue, as it really motivates companies to innovate.*

*The EU funding is super competitive. It plays a role and some research calls imply that we need a big consortium of different partners, but willingness to collaborate comes down to trust – if you trust the partner, can rely on him/her, then you will do it.*

*We are required to do this. Within the university, collaboration with entrepreneurs and the private sector is an institutional obligation. A new European competitiveness framework was also just introduced to us, which seems to be pointing in the same direction for the future.*

*We do research for industrial partners, and it is one of our main sources of funding, besides EU and national research projects. [...] There is national innovation funding available for companies, the funding is provided to minimise innovation risks. We approach local companies to help them do these innovation projects. Collected data through projects can be used in our research projects. Many PhD students use this data as well and then publish papers. I think it is a win-win situation.*

*Most researchers value basic research, as it is embedded in a university culture. Publications is a key metric for researchers, therefore, of course, when we try to encourage researchers to engage with industry it is not easy. When we have new people/researchers joining our organisation, the biggest struggle is cultural. We need to explain to them why it is important to do collaborative projects with industry, why we should listen to the needs of industry. Shifting the thinking process is hard, it takes a really long time. [...] The values of professional researchers are contrary to business priorities – business wants something quickly and it can be 80% perfect, while scientists want to triple-check something, they focus so much on methodology. It is also interesting to see that at times researchers don't perceive that what they do with industry is a real science.*

### **Latvia**

The interviewees from Latvia share many of the same structural frustrations as their Estonian counterparts. The evaluation system for researchers, which is based on publications, attracted funding, and PhD student numbers, has been identified as the root cause of **weak industry engagement**. It is not unique in Latvia, yet it clearly illustrates the fundamental challenge – a lack of incentives for researchers to be engaged in applied research, to pursue patents, product development and collaboration with industry. The results of the evaluation system of researchers translate into institutional ratings, which discourages university/research institutions' rectors/directors to motivate their staff to engage in activities that do not contribute to higher ratings. As a result, in view of interviewees, around 95% of researchers choose to focus only on drafting publications throughout their career, while only 5% of researchers will orient their career towards product development and day-to-day collaboration with industry. The publication-oriented path is clearly more risk-free, less resources intensive and is rewarded by the academic/research community, due to the existing evaluation system. Among other factors were listed a lack of knowledge of IP processes and a cultural resistance to anything resembling product development. Besides embedded unfairness within the research community, this results in the **commercialisation gap**.

The interviewees shared that a motivation to collaborate **varies considerably across individuals and institutions**. Some respondents describe genuinely open and productive partnerships, including daily collaboration with private companies, shared IP, mutual board membership, and long-term planning. The **Biophot programme** is cited repeatedly as a rare and successful model, connecting multiple organisations, supporting TRL (technology

readiness level) growth, and producing tangible results. But such examples are presented as exceptions rather than the norm.

When commenting on the private company capabilities to engage in the R&D&I collaboration, the interviewees noted that **large companies tend to come with clear requests and resources**, while smaller ones often lack clarity and expect the research organisations to handle funding applications on their behalf. Private sector resources for R&D&I collaboration are described as limited, with EU fund allocation to companies seen as insufficient.

Trust has also been highlighted as a key factor for R&D&I collaboration with a note that **trust-building in Latvia at times is slow**, requiring sustained personal relationships, strong communication skills, and time investment. Data-sharing is also flagged as a genuine obstacle, with **competitive pressures** discouraging openness even within the research communities.

#### *Quotes of respondents/interviewees from Latvia*

*The key systemic challenge remains the same - research organisations are primarily evaluated based on academic outputs such as publications, attracted funding, and the number of PhD students. As a result, communication and engagement with society and industry are not prioritized. Many research institutions in Latvia receive relatively low evaluations due to limited collaboration with the economic sector, prompting ongoing discussions on how to improve this aspect. But I don't think a practical solution will be found until the evaluation system of researchers will change. [...]*

*Company size matters for collaboration. At least in our experience, large companies are more likely to have a clear request and resources to collaborate, while small companies sometimes come with unclear requests and needs, and it takes time to understand their expectations. Occasionally, such small companies approach the organization with the hope that it will help to get funding on their behalf or simply write project proposals for them. [...] However, it is important for the private companies to understand that we are not a public administration, we do not have capacity to simply deal with bureaucracy, we are here to help to do research.*

*To ensure effectiveness of collaboration with the private sector, it should be a long-term relationship building and commitment to partnership. It takes time to develop trust, to understand needs, to understand communication styles and approaches. Trust and a human factor are critical for cooperation. Having dedicated individuals on both sides who maintain regular communication and develop relationships over the years significantly improves collaboration outcomes. [...] In the Latvian context, trust-building can take longer, compared to other countries, where researchers may be more open and quicker to engage. Our cautious approach can sometimes slow down collaboration. Therefore, qualities such as charisma, diplomacy, and strong communication skills are essential for success of joint projects. [...]*

*What is important to note about collaboration – it is also connected to competition and risks. Researchers collect data to publish findings. If someone else has access to the same data and manages to extract, publish findings faster than you, your work will lose the value. The researchers' world is weird, and it is essential to keep "secrets" to yourself, otherwise, some else will take it before you. So, we are not great collaborators – too many risks, too much uncertainty, too much trouble for making collaboration work. Open data initiatives, to some extent, are a beautiful myth. Really important and valuable data will not be disclosed. [...]*

*The private sector and other stakeholders want to collaborate on R&D&I activities, but usually do not have the resources to do it - money is a key issue. The EU fund allocation to the private sector*

*is limited. Similarly, for researchers – we need to report on every hour worked on a specific research project and explain our activities.*

*Collaboration with other countries at times is affected by a lack of solid scientific reputation. It is not about reputation of a concrete scientist, but a general reputation of a country or of Baltics, maybe even of Eastern Europe. I don't think we have built a strong international reputation as scientists, innovators. So, it might affect the number of partnerships.*

*Researchers have the capacity to do innovation, but very few actually do it. Researchers' assessment is conducted based on a number of publications, therefore there are no motivating mechanisms. Technology transfer knowledge is also limited – how to do it, where to start. You need a professional team that can help a researcher. Otherwise, the innovation idea will remain just an idea. I am not sure our TTOs know how to maximise effectiveness and impact of their work.*

*When a company or an investor is interested in the work of a scientist, they want to create a product and ask about its potential characteristics, about production processes to define a possible price, costs. Researchers try to escape such discussions, and anything related to commercialisation. The argument is the following - we are researchers, instead of laboratory product developers. We only do research and leave it there. Such attitude obviously does not help to build collaboration or to commercialise an idea. I am not saying that all researchers, scientists are like this, but it is common, as they only focus on publications.*

*Researchers have two paths – publish or patent. The overall trend is an academic direction, which results in becoming an expert with publications. Outcome is a publication. The alternative path is patent-based. This is an active learning path, which requires an ability to be resourceful, to collaborate with industry, to think outside the box and be willing to risk. I would say that currently there are only about 5% of researchers that have chosen the alternative path and consistency focus on patents, instead of publications. There is a definitely a need to review which path the researchers should take, as creation of publications is not useful if they are not communicated outside the researchers' community, if there is no attempt to be useful to the industry and solve current problems.*

*Most difficult is to close the gap between TRL 3 and TRL 7. You need regulation, financial resources, infrastructure to do it etc. This is resource-intensive, therefore it is not easy to solve it. However, there is a good practice in Latvia – Biophot programme. It is about TRL growth, from TRL3 upwards. The programme focuses on specific challenges, connects numerous organisations and has produced good results. So, it is definitely possible to close the TRL gap, but it needs people, who are willing to take the initiative and lead the change, in collaboration with industry. Would be great to have more of these initiatives.*

*We have daily collaboration with the private companies, but the research collaboration depends on company capacity. We are on company boards, they are on our boards to build successful collaboration. We have our competence, we inform them on what we can do. But the decision where is a business case is their. We will not intervene, as they risk with money, they make the business decision. Overall, I would describe our collaborative approach, as successful. We share the IP, we trust each other, we make long-term plans. It is strongly embedded in how our organisation works.*

### **Lithuania**

Lithuania presents a somewhat more optimistic picture in terms of institutional motivation, though significant structural weaknesses persist. Several respondents describe growing engagement with applied research, driven by EU Horizon calls, cross-border programmes, and a Ministry of Education requirement to conduct commercialisation activities. A financial

incentive scheme, allowing researchers who lead recognised projects to receive institutional grants, has been mentioned as meaningfully motivating, though acknowledged as not universal in its appeal.

In some Lithuanian research organisations, a strategic institutional shift has been inspired by MIT's media lab model, initiated around 2015–16. It embedded **mandatory applied research targets into every faculty and research institute**. As a result, performance has been evaluated annually both internally and through a state-level mechanism that rewards income from industrial research contracts. This represents the most formalised institutional framework described across all three countries and provides a structural comparison point for how incentive systems can be designed.

However, Lithuanian respondents have also pointed to the **weak industry demand for research**. Companies are described as focused on incremental process improvements rather than breakthrough innovation, and large companies with their own R&D departments rarely seek university collaboration. This limits the depth of engagement and contributes to a situation where collaborative projects tend to yield one more paper **of limited added value rather than genuine innovation**. One respondent makes the pointed observation that science should be responding to industry demand rather than generating theoretical solutions in search of problems.

An additional element that has been raised during interviews with the Lithuanian researchers is the tension **around resource allocation within universities**. Namely, engineering faculties requiring expensive equipment receive the same project funding as humanities departments. This creates a structural inequity that dampens the ambition of more resource-intensive applied research.

Collaboration between the research and the private sector has been described as **uneven across faculties**, with some deeply engaged in applied work and others remaining purely academic. **Personal networks** are repeatedly cited as the most effective mechanism for establishing private sector connections, echoing a pattern seen across all three countries.

#### ***Quotes of respondents/interviewees from Lithuania***

*Actually, we are really motivated and keen on this, and increasingly so. Despite the fact that we are a budget-funded institute, a significant part of our revenue now comes from programmes we apply to, such as European Union Horizon calls and cross-border cooperation programmes which operate more at a practical level. We also have projects in those frameworks. So, from that position, we are more and more interested in finding investment alongside the activities we normally carry out. [...] This collaboration has been going on for nearly a decade now. It is nine years since we started our first project within this collaborative framework and it now makes up an increasingly large share of our institute's overall revenue.*

*Our institution has a motivation system where researchers who lead internationally recognised projects can receive direct financial support from the institution itself. So, if you are a project leader, you can submit your documents to the institution and receive a grant from them.*

*On the private sector side, yes, there are contacts as well. Every researcher is interested in making such connections. For myself, I work in plant physiology with controlled environment growing and LED lighting. Our research is connected to vertical farming and controlled environment greenhouses. So personally, I am in contact with various growers, greenhouse growers, vertical*

*farm operators. We have a very large vertical farming company here and we are in quite close contact with them. It is personal contacts. I think that is the most effective way.*

*To do applied research is a requirement of the Ministry of Education in Lithuania. There are clear funding streams and commercialisation is something that we must do. The researchers are motivated by finances - there is a scheme, where the funds that are acquired could be converted into a financial bonus of scientists or into investments in infrastructure. This is quite motivating, but, of course, not for all researchers. Some researchers have a different profile, and applied research is not their thing.*

*Big companies have their own R&D departments, therefore, overall, I would say that the private sector itself does not have a high interest or demand in the research support of universities. They come to us if they lack competence. Overall, I would not describe our collaborate as intense. Everyone has its own focus. We research and teach. They private sector does business. If our interests match, we could do things together, but I don't think it is a must every time.*

*The extent of R&D&I activities depends heavily on individual faculties. Some are focused on applied research, while others remain purely academic. When project funding is limited, collaboration with the private sector often does not make sense - not enough money to do something decent and to split it. As a result, we get one more paper, which is likely to have little added value.*

*In the faculty of engineering, we do real stuff. What is unfair – the amount of project funding we get is same as in, say, humanities department. But humanities department does not need expensive equipment, technologies for research. Their research costs less, but, of course, they are interested to have the same amount of funding.*

*Industry demand for scientific research in Lithuania is relatively weak and tends to focus on incremental improvements rather on true innovation. So, process innovation is more common and researchers, sadly, cannot embed their knowledge. Companies look for small improvements, they want innovations that can be scaled. I understand that companies might need to take risk and transform their business model, change their reputation, if they pursue an innovative path. But this means that while companies can participate in projects, they rarely push for breakthrough innovations. There will be no radical innovation under such conditions, there is no hunger for innovation. This has contributed to stagnation in science and innovation across the Baltic States, although progress is now being made.*

*Science is not primary for innovation. It is industry. Science should listen to the demands of industry and address them, instead of inventing challenges and suggesting solutions in theoretical papers. If industry does not request, we cannot do anything. But the collaboration between science and industry is weak.*

*The university has been an active developer of applied innovations as well as an educational institution. Around 2015-16 a strategic visit to MIT in Boston anchored a new direction: moving from purely theoretical research toward practical, industry-facing science. The model was inspired by MIT's media lab approach – collaborative innovation development with industry as a core institutional function.*

*The current strategy includes mandatory performance targets for each faculty and each research institute: every unit is required to generate a defined volume of contracted research services and research work with industry, covering both private companies and state-funded institutions. This is evaluated annually. The performance framework operates at two levels simultaneously: the university's own internal strategy mandates industry engagement, and a state-level university*

*evaluation mechanism rewards institutions based on income generated from industrial research contracts. [...]*

In the survey, the respondents were asked to select the best practices that their organisations use to stimulate commercialisation of research. Although all the suggested initiatives mentioned are relevant for fostering the commercialisation of research, **collaboration with industry and other innovation stakeholders, together with training for commercialisation**, are identified as the most important (Table 11). This confirms that researchers see commercialisation not only as a legal or administrative process, but as a capability-building and relationship-building process.

The results fit well with the idea that innovation emerges from repeated interaction and spill-over effects between different actors. Frequent contact between researchers, companies, entrepreneurs, investors, and public institutions can generate stronger learning, trust, and opportunity recognition than isolated or purely formal research programmes.

TTOs, clear and research-friendly IP rules, entrepreneurship training, and incentives in academic careers are also important. However, these instruments should be understood as part of a broader innovation diffusion process. They work best when they help researchers move closer to users, markets, and partners that can support the adoption and scaling of new solutions.

These findings suggest that **Baltic research institutions should move from fragmented commercialisation support towards integrated innovation pathways**, where training, incentives, IP frameworks, industry engagement, and international partnerships are aligned around clear sectoral value propositions.

**Table 11: Most frequently selected best practices used by researcher’s organisation to stimulate research commercialisation**

(n(Estonia) = 21; n(Latvia) = 31; n(Lithuania) = 30)

Estonia		Latvia		Lithuania	
Collaboration with industry and other innovation stakeholders	73%	Collaboration with industry and other innovation stakeholders	69%	Training for commercialisation of research	74%
Training for commercialisation of research	46%	Training on entrepreneurship for researchers & innovation culture cultivation	42%	Collaboration with industry and other innovation stakeholders	74%
Effective collaboration with the Technology Transfer Office (TTO)	42%	Effective collaboration with the Technology Transfer Office (TTO)	39%	Training on entrepreneurship for researchers & innovation culture cultivation	49%
Training on entrepreneurship for researchers & innovation culture cultivation	42%	Training for commercialisation of research	36%	Effective collaboration with the Technology Transfer Office (TTO)	43%
Clear and research-friendly Intellectual Property (IP) rules	35%	Incentives in academic careers	33%	Clear and research-friendly Intellectual Property (IP) rules	43%

Capacity and linkages to work with top research groups from Western Europe and the US	35%	Clear and research-friendly Intellectual Property (IP) rules	31%	Incentives in academic careers	40%
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During interviews, the researchers were asked to elaborate on how their organisation stimulates commercialisation of research. The responses reveal a **wide spectrum of institutional development**, from organisations where commercialisation is essentially absent to those with functioning infrastructure and embedded culture.

At the less developed end, commercialisation is described as rare, poorly understood, and structurally discouraged. There are no internal incentives, no systematic assessment of commercial potential, and no dedicated staff. Researchers do not know which companies to approach, how to present findings in business terms, or how to structure partnerships. The self-diagnosis in several cases is frank: the organisation does not promote its capabilities externally, does not know what of its output is marketable, and lacks the bandwidth to find out. During interviews several researchers recognised that their organisation has commercially useful research it has never attempted to promote.

At the more developed end, a minority of interviewees describe functioning TTOs, innovation centres, incubators, staff training, and structured processes. In some cases, TTO experts maintain deep knowledge of what is happening across the institutions, proactively network with industry, and offer researchers a direct financial incentive.

Despite mentioning some positive examples of research commercialisation and its promotion, most interviewees once again referred to the **key challenges that prevent it**. The most consistent theme across all three countries is **culture**. Namely, research institutions have historically been oriented around academic outputs (e.g., publications, citations, theses, and scholarly status) rather than practical application or commercial impact, supported by the structural issues mentioned earlier: the incentive systems, career ladders, and self-conception of researchers are built around the academy, not the market. In addition, a few interviewees pointed out that some researchers do not receive well the feedback from businesspeople, practitioners, or end users, considering comments from non-experts irrelevant. Such, in their words “arrogance of researchers”, creates an additional communication barrier.

The **gap between TRL 3 and TRL 7** is the second most significant structural absence identified. No Baltic respondent describes an institution that functions as an applied research bridge between university-level discovery and industry-ready product development. This is the layer, where Germany, France, and Finland operate successfully, and its absence means that Baltic institutions trying to commercialise must attempt the entire journey from TRL 3 to TRL 7 without dedicated engineering teams, industry co-development infrastructure, or appropriate funding instruments.

The third most frequently mentioned challenge is the **perceived industry resistance to innovation**. In view of interviewed researchers, companies are reluctant to change established processes, renegotiate contracts, or absorb the risk of unproven solutions. One Estonian respondent describes this pattern in the following way: companies say they want innovation; in practice, they are unwilling to change what is already working. This emphasizes that risk-aversion exists on both sides, namely, researchers fear commercial failure and reputational exposure, while businesses fear sunk costs and operational disruption. This, in part, is related to a lack of company flexible funding for exploratory R&D engagement.

The interview data does not reveal strong country-level patterns, given a limited sample and different (both positive and negative) experiences across research institutions.

### ***Quotes of respondents/interviewees from Estonia***

*Commercialisation is a norm, this is something what should be explained to the researchers. Research for the sake of research is not the desired outcome. We need to educate researchers about it, cultivate to get out of their world and to collaborate with the private sector, otherwise, they get stuck in their little world. Often there are companies that do not know about the development of some ideas, useful research findings, which they could use to improve their services or processes. As a result, we waste the potential. This is very sad.*

*Commercialisation is something that is being forced through funding requirements. We recently completed a funding application where commercialisation was a mandatory part of the evaluation criteria. That is a new thing. Until now, getting any funding from a company was already considered a success. But there are new conditions being introduced where this part is required. I think this is an EU-wide direction, not just specific to our organisation.*

*Yes, of course, it is a goal of the university. The university is pushing us to commercialise our solutions. But it is not easy. We have developed some solutions and right now we are at the stage where we have prototypes, and we are looking for who needs them and what kind of problem we can help solve. Moving from a lab solution to production — I do not have much experience with that, but we have solutions that we are trying to move forward with.*

*It is a complex issue. In some cases, maybe there is no funding, because to understand who is our client, who needs our solution, we need to carry out market research and understand who our target groups are. But for this we do not have resources or maybe enough knowledge. That is maybe one reason.*

*But another thing we are facing here is that companies or municipalities — they say this is maybe interesting, this is useful, but today it is already arranged differently, it is working. Why do they have to change something? They have contracts and so on. In words they say they need innovation, but in practical cases maybe they are not ready to change something. And maybe there are some risks, because you do not know the results, and maybe that is not something they want to take on.*

*It is really difficult for researchers to work with deadlines. For most of them, research is a creative and unpredictable exploration process, therefore they get angry if we put a deadline and try to formulate it as a project with clear KPIs and milestones. The resistance is incredible. [...] I think there is something fundamental how we think about research, how we think about projects, or about application of knowledge and collaboration. We tend to be too academic and theoretical in our approach, while I must say that when it comes to the quality of research, I think Estonia and Baltics generally have to be proud of. But, as I said, everything comes with a cost.*

*We do a lot of discussions and trainings – formal and informal, to foster a commercialisation mentality. We talk about IP, business processes, how to develop a value proposition, and how to get feedback. The feedback look is extremely important, but I must say, it is a real struggle from researchers to receive feedback from non-academics... They feel like a non-professional is commenting on their work and it is inappropriate. It takes time to make people feel comfortable with a change.*

*What really helps in fostering new culture at our organisation is when we talk about the impact of what we do on the world – we promote the fact that what we do should have an impact. We also talk about the importance of commercialisation, about success stories on how an idea was turned*

*into a product. But yes, it is still not easy. The research or science system overall is not designed for having an impact or thinking about an impact. It is all about research publications.*

### ***Quotes of respondents/interviewees from Latvia***

*Commercialisation of research outcomes is currently rare within the organization. It is often perceived as a complex process, which discourages active engagement. There is also uncertainty about how to identify and connect with companies that would be interested in research findings and capable of bringing them to market. Finding mutually beneficial (“win-win”) collaboration models between research institutions and companies is difficult and time-consuming. Identifying opportunities for commercialisation requires sustained effort and investment.*

*Some EU-funded projects explicitly require collaboration with the private sector and include an international dimension. Despite this, there are limited internal incentives to pursue commercialisation. It is not systematically encouraged, assessed, or rewarded within the organization, which further reduces motivation to engage in such activities. Researchers don't know how to commercialise, we are differently wired. Even if we are taught basic business principles, we are very far from a real business world. I think to make real collaboration and commercialisation work, we need to grow side by side and learn to understand each other. The current education system does not encourage it.*

*There is a recognition that the private sector demand and interest to collaborate and commercialise could potentially be higher if these opportunities were more actively promoted, communicated. At present, the organization does not widely publicize its capabilities, partly due to limited resources. Expanding activities related to commercialisation and private sector collaboration would require additional staff dedicated to these tasks. There should be a dedicated person or a team responsible for commercialisation, it could significantly improve outcomes. Such a role would help build a stronger culture of collaboration with industry and create more opportunities to translate research into practical applications.*

*I think the key component that most research organisations are missing is the culture of commercialisation. Right now, we are not encouraged to commercialise, we don't know how to do it, we don't know who and how to involve to do it. It is not part of researchers' DNA. We definitely want to be helpful, don't misunderstand me, but we don't think that our job is to commercialise. We can research, but there should be someone next to us to tell us that it can be commercialised. Otherwise, we stop after doing the research. [...]*

*During this interview I've realised that actually we could do more in terms of commercialisation. We would definitely get requests from the private sector. We simply do not popularise what we have, what we are doing. But I am sure a lot of what we do could be useful to companies. There are a lot of untapped opportunities. [...] However, financial constraints remain a significant barrier. Companies are often reluctant to invest in activities where profitability is uncertain, and research organisations cannot guarantee immediate financial returns. Additionally, companies typically lack flexible funding that could be allocated to exploratory R&D&I activities.*

*First of all, there is the culture itself. We have academic freedom, but if you choose the commercialisation path, it is very much supported. Patents are counted as a scientific output. We have an innovation centre that helps scientists specifically with these topics. I think that is an essential place. Students also have the opportunity to get support for their ideas there. [...]*

*To facilitate commercialisation of research, we collaborate with companies, we've created our own incubator and organise public lectures. We encourage researchers to become innovators, and we*

*invite companies to present/share their problems, so we could find ways to address them. There are a lot of efforts made to stimulate commercialisation.*

*We have created an innovation centre at our institution, which provides administrative support to researchers related to innovation. In essence, it helps with all documentation processes associated with technology transfer, innovation policy, IP rights etc. Similar structures exist in other Latvian research institutions. They are very helpful.*

*We try to commercialise research to produce socio-economic benefits – this is the culture that we've built in our organisation. Every colleague/employee knows that we do research to solve a problem, to see its application in an industry. There is no alternative, in our view. If we do something, we should always think about its application and potential commercialisation. Otherwise, why do we do it? We don't want to only produce endless papers.*

### **Quotes of respondents/interviewees from Lithuania**

*I would say we are still beginners in this field of research commercialisation. The situation has been that there was not much external stimulation for it before, but from the inside we started to feel that when you propose something applicable and with real impact, you find yourself in a better position in the overall market. That is what drove us to develop the Living Lab approach, which is essentially a participatory innovation-building approach. Last year we established a living laboratory as a branch of our institute's Innovation Transfer Centre. The main activity of this lab is to commercialise the research produced by our researchers. We are really at the initial stage. But last year we succeeded in certifying the lab under the European Network of Living Labs, so we now meet particular quality requirements and assessments. [...]*

*It depends on the lab. We have different levels within the institution. There is plant genetics, plant physiology, plant protection, and then biochemistry and technology. The biochemistry and technology lab is basically designed for product development. They have a lot of contacts, and they are already making prototypes. We, as plant physiologists, are more on the side of generating knowledge. But that knowledge should be commercialised, which is why we are contacting various growers, trying to understand how we can apply what we know and what we can offer them. [...]*

*Around 6-7 year ago we had a Cambridge training on commercialisation – this was a great practice. As a result, we've adopted some guidelines, forms for technology registration. We can categorise an invention and register it properly. Then it goes to patenting. We had training on entrepreneurship for researchers. I think it really helps.*

*TTO – it is our innovation department. We communicate with the scientists on inventions and look for a market fit. The benefit for scientists – they get 50% of licensing fees. In our TTO, our experts we know quite well what is done in the institute and each TTO expert has own specialisation – they know perfectly what is being done in the institute. We do proactive networking with the private sector, try to sell our ideas, mention technologies that could be relevant for a field. I think good TTOs are extremely relevant for research institutions.*

*Real commercialisation is possible only when you have a good dialogue with industry. If not, we sort of fake commercialisation. Researchers sort of do steps towards commercialisation, but it does not really affect the market. Industry knows what the market needs and can scale it. So, all university efforts in terms of commercialisation are a bit pathetic.*

*There is a gap between academic research and industry needs. Academic work often operates at Technology Readiness Level (TRL) 3, while industry requires solutions closer to TRL 7. Bridging this gap is a major challenge. In countries like Germany, this is addressed through applied*

*research institutions, which work like open innovation centres (e.g. Fraunhofer-type models), where academia and industry collaborate, test and develop technologies, supported by dedicated engineering teams and infrastructure. Similar models exist in France and Finland, where institutions employ engineers and focus on product development rather than purely academic research. The Baltic States largely lack such structures.*

*The university has a dedicated innovation centre that serves as the interface between research output and market needs. The centre communicates and promotes the university's research areas and innovation outputs to industry and conversely directs companies with specific problems to the relevant departments. A Centre for Artificial Intelligence, a newer initiative, works across universities and with industry to develop and apply AI solutions, including in student and industry education.*

*The environmental engineering institute has been particularly active since 1998, when it launched a cleaner production and sustainable innovation programme funded partly with support from the Nordic Environmental Finance Corporation (NEFCO), which provided low-interest loans to businesses to implement cleaner innovations. This created a three-way model combining scientific expertise, identified industry need, and bank financing. Businesses had a real financial mechanism to act on the solutions proposed. The interviewee cited this as a model worth replicating, science and market need are not sufficient without accessible financing to bridge the gap to implementation.*

During interviews, the researchers were asked to name key research, scientific, technological achievements of their organization or of their country during the last 3-5 years. The most striking finding across all three countries is how frequently interviewees **struggle to identify concrete national or institutional achievements**, even when they work inside the institutions responsible for producing them. This is not a uniform picture, but the hesitancy is common enough to be significant. On the one hand, all interviewees indicate that their country has done a lot in the areas of research, science and technology, yet their knowledge is predominantly limited either to their own field or to their own work. On the other hand, many interviewees recognize that not enough has been either done or communicated.

The **visibility and communication gap** runs through all three countries with remarkable consistency. Many interviewees describe a **siloes innovation ecosystem**, where knowledge does not travel between institutions, sectors, or communities. Such ecosystem has practical consequences, namely, potentially complementary capabilities do not find each other, researchers in one field do not know about achievements in another that might inform or inspire their own work. One Estonian interviewee described it as "everyone lives in their own bubble". Conferences exist for those who seek them out, but there is no general circulation of innovation knowledge across the ecosystem. One respondent observes that media could play an educative function in building an innovation-aware society, but currently functions primarily as a "mechanism for spreading bad news".

Several Latvian interviewees indicated that Latvia's investment promotion agency should be **running campaigns** that tell the story of Latvian scientific and technological achievement. It would not only attract foreign investment, but also motivate young people to pursue STEM careers. The interviewees from Lithuania note that television covers science occasionally, but that coverage is inconsistent and public awareness remains low. The implication across all three countries is that the **science communication infrastructure** through media, government agencies, or the institutions themselves **is not functioning** as a channel for building national pride, attracting talent, or signalling innovation capacity to investors and partners.

Despite the difficulty in naming achievements, the substantive content across the interview's points to a **real and varied innovation landscape**. In Estonia, the most concrete examples come from a single innovation centre, which has developed an AI-based calorific value measurement system for oil shale (enabling real-time production management rather than retrospective lab analysis), smart waste bin sensors with online monitoring software, and an animal detection warning system for large vehicle drivers. The same centre also provides digitalisation consulting to companies navigating an overcrowded solutions market.

In Latvia, the most significant achievements cited include internationally recognised contributions in cosmetics and pharmaceuticals, a strong IT sector with globally scaled startups, advanced work in optics (with companies whose turnover reportedly exceeds that of well-known national firms, but who receive no public attention), and specific scientific milestones including a weight-loss drug, spider silk technology, and organ chip development. An ecosystem analytical tool developed in collaboration with Finnish partners, mapping Latvia's natural resources and their functions, is also described with aspirations for policy adoption by the Ministry of Climate and the Bank of Latvia.

In Lithuania, the range of achievements include AI applications, energy efficiency technologies, hologram-based materials, circular construction processes incorporating industrial waste, new food products, polymers, and textile materials, and patent applications for air pollution filter materials. A notable product-level example is a medical device for infants that protects against oral Candida infection, developed in a biochemistry and technology laboratory. Quantum technology developments are also flagged.

While reflecting on national or institutional achievements, several interviewees pointed out that **closer collaboration between the research community and industry is a must** to produce truly relevant products and services.

#### *Quotes of respondents/interviewees from Estonia*

*It is hard to point out to Estonia's key technological achievements during the last 3-5 years. We should be proud of something, but I am not sure what it is. Weird...*

*The worlds are very layered, everyone lives in their own bubble. Those who want to learn about innovation in a specific area, I guess they could go to a specific conference. But there is definitely a lot of silos, isolation.*

*Start-ups and companies promote what they do, as they have commercial interests. But research organisations have a limited focus on communication and, perhaps, it is not something what the society wants to know. Although if we want a more innovative country, the media should share news about it. Media definitely has an educative role, but not sure they are aware of it. Currently, media seems like the bad news or rumour spreading mechanism, rather informing and educating*

*I can speak about our innovation centre because we have developed a few things. For example, we have developed sensors to measure whether waste bins are full or not, and we also developed software so you can see online what is going on in your waste bins. This is one solution we are trying to commercialise.*

*Another solution is more specific to our region. We developed an AI-based solution to measure the calorific value of oil shale. Simply said, we take pictures of the oil shale and according to the*

*colour we can measure what the calorific value is. [...] If you know the calorific value online, you can manage your production processes in real time. [...] We are also working on a solution for drivers of big vehicles — how to spot and warn the driver about wild animals on the road. The solution warns drivers with a light signal: green or yellow when the animal is not so close to the road, and red when it is very close. [...]*

*And then we also work on digitalisation plans for companies. We describe the current situation and provide some guidance on how to move forward, what kind of changes they need to make and what funding options might be available. [...] We work more like a consultant, because companies say there are so many different solutions on the market and they do not know which one is best for them — they need an independent opinion.*

### ***Quotes of respondents/interviewees from Latvia***

*We've developed numerous ecosystem-related analytical tools. For example, one tool helps to see and assess what resources the local nature gives us. It will help to analyse multiple dimensions, including the quality of soil and other organisms. This tool has been developed in collaboration with the Finnish colleagues. [...] This tool will help to see what Latvia's nature riches are, what functions they provide to the ecosystem, and classifies different activities. I hope one day the Ministry of Climate will promote it and people will learn about it. I know that the Bank of Latvia is also interested in the topic of sustainability, and I hope that they will also use our tools and findings.*

*Latvia has developed many good, internationally recognised cosmetics and pharma products. Our IT sector and IT innovations in both public and private sectors are really great. We should be proud of where we are. Some start-ups have scaled in the US, as they could access to funding there, but we still should be proud that we've launched them here. For example, digital anatomy – it is in the US right now. Printify, Printful, Mikrotik and many, many others. We have many achievements in the optics sector. I know companies whose annual turnover is much larger than of Grindex, but nobody talks about them.*

*LIAA should tell stories to the society on what are our scientific achievements. They should advertise to ensure that people are aware of the success cases. I think the society does not really know what Latvia should be proud of in terms of science, technology, innovation. It could be a nice campaign that could attract not only foreign investment but also motivate young people to choose STEM and to stay in Latvia.*

*When I think about the scientific achievements, I immediately think about the weight-loss drug, developed by Mutule Ilga, about the spin-off company that created a spider silk technology, about another spin-off Cellbox, which focuses on organ chips, which imitates specific organs. There are so many nice scientific achievements. Of course, I know more about what happens in my field, but I hear a lot of good stories and news.*

### ***Quotes of respondents/interviewees from Lithuania***

*The biggest ongoing project is the creation of competency centres. We received 8 million euros of funding for this. The project started about half a year ago and the work involves creating research teams, attracting leading researchers, and building laboratories focused on specific thematic*

*problems. We are collaborating with an international university partner on this. It is not a purely Lithuanian project.*

*Another example comes from the biochemistry and technology laboratory within one of the institutes. They are not working only in the agronomic field. One of the products they have developed is a device for infants, filled with biologically active compounds, which protects the baby's mouth from Candida pathogen. Babies often get white spots in the mouth from this and the device works against that. So that is a concrete product development example.*

*The spinoff company Litilit (fibreoptics company) is doing really well. We've developed a couple of products for defence application, such as speed detection systems, and we know they have a good market potential. Our advancements in the quantum field are also quite promising. We've developed organ chips and many other things.*

*The Lithuanian television from time to time highlights some scientific thematics and shows national science-related initiatives. However, I would say that there is room for improvement. Overall, society is not well-aware what is happening in the science field.*

*The university has nine faculties and ten research institutes, generating patents across multiple technological fields each year. Key areas of recent achievement include: AI applications, energy efficiency technologies, innovations in material science including hologram-based materials, biotechnology technologies, digital twins, and circular construction. In construction materials, processes have been developed for incorporating industrial waste streams into new building and packaging materials. Food science is another high-performing area, including development of new food products, new polymers, and new textile materials.*

*Patent applications have been filed for air pollution filter materials. The institution's breadth, spanning hard sciences, engineering, materials, biological sciences, and food science, means that significant achievements exist across virtually every faculty. The environmental engineering institute has a particular track record in sustainability strategies and circular economy technologies, with over 20 years of international consulting experience feeding into the research agenda.*

### 2.2.2. Assessment of the Baltic innovation ecosystems by the research communities

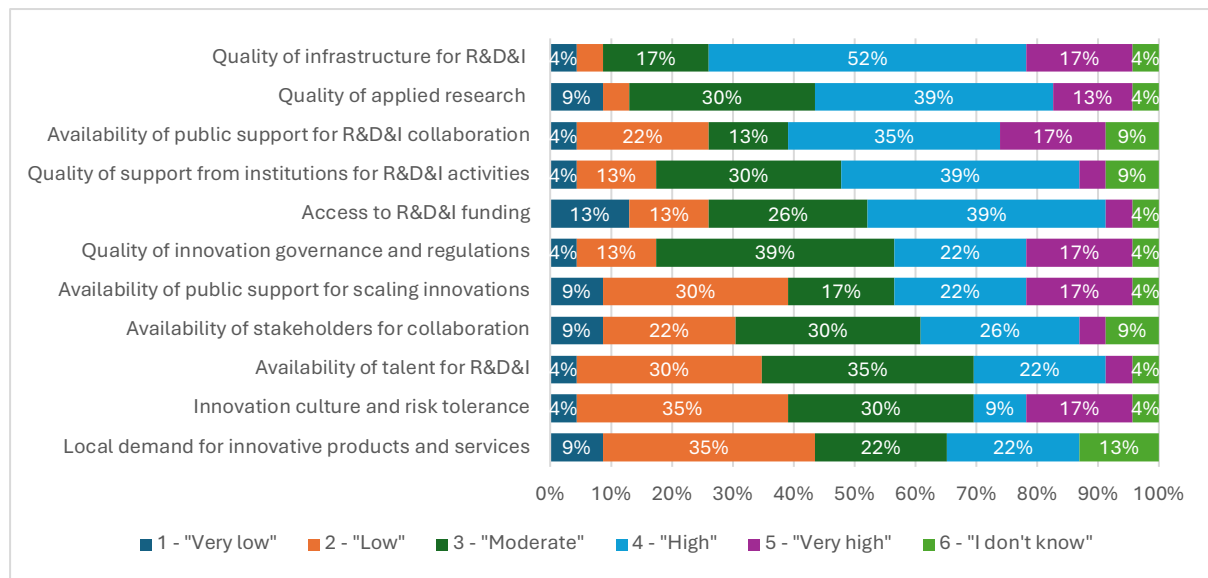
The Baltic researchers were asked to assess different aspects of their innovation ecosystems. Their assessment points to a **similar set of strengths and weaknesses across Estonia, Latvia, and Lithuania** (Figure 24, Figure 25, Figure 26). Researchers identify accumulated **physical and digital infrastructure** as one of the most important strengths of their institutions.

At the same time, the **main weaknesses are connected to market absorption, scaling-up, and innovation culture**. The small size of national markets limits the demand for new solutions, while insufficient support for scaling innovation makes it difficult to move from research outputs to market impact.

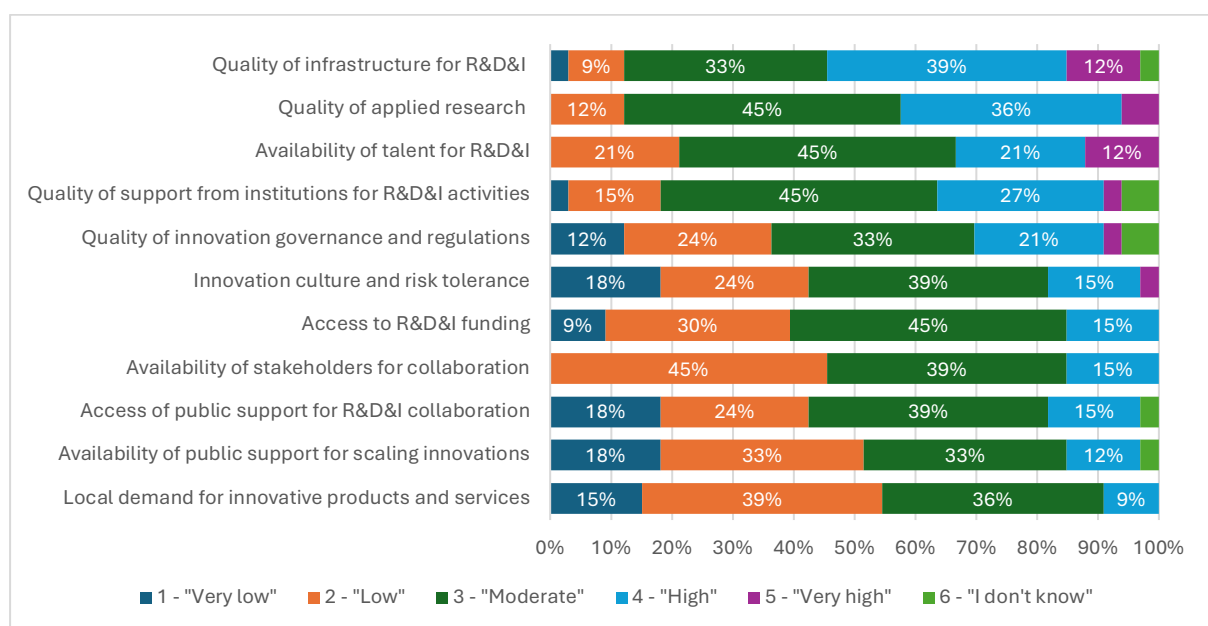
The findings suggest that **Baltic research institutions have assets, but they need stronger mechanisms to convert these assets into market-relevant value**. Infrastructure alone is not enough. It needs to be connected to companies, public sector challenges, start-ups, investors, international research groups, and global markets through well-orchestrated innovation ecosystems.

The similarity of the challenges across the three Baltic States **strengthens the case for coordinated Baltic-level action**. Shared instruments could help increase scale, reduce duplication, and create stronger pathways for innovation diffusion across institutions, sectors, and markets.

**Figure 24: Researchers’ assessment of aspects of Estonia’s innovation ecosystem**  
*Scale 1–5, where ‘1’ means very low and ‘5’ means very high impact on Estonia’s innovation ecosystem*  
 (n =23)



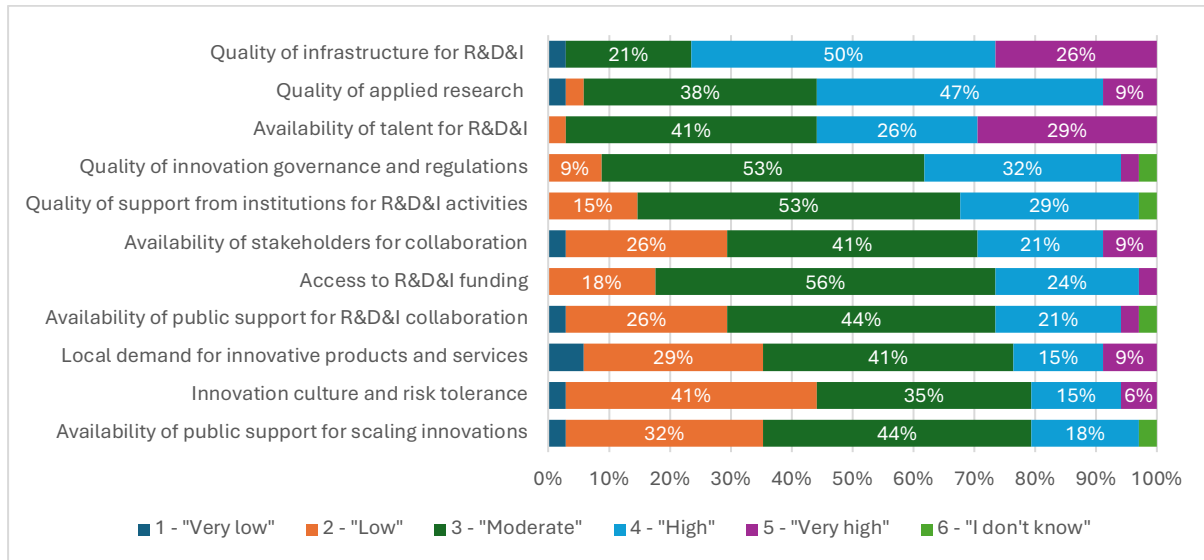
**Figure 25: Researchers’ assessment of the following aspects of Latvia’s innovation ecosystem**  
*Scale 1–5, where ‘1’ means very low and ‘5’ means very high impact on Latvia’s innovation ecosystem*  
 (n = 33)



**Figure 26: Researcher’s assessment of the following aspects of Lithuania’s innovation ecosystem**

*Scale 1–5, where ‘1’ means very low and ‘5’ means very high impact on Lithuania’s innovation ecosystem*

(n = 34)



During interviews, representatives of the research communities were asked to describe their national innovation ecosystem, commenting on extent of collaboration, its current status and development potential. The following themes are identified:

***Overall ecosystem maturity: progress acknowledged, pace questioned***

All three countries show awareness of genuine progress over recent decades, alongside frustration with fragmentation of the innovation ecosystem, mentioned earlier, and that the pace of development is insufficient relative to global competitive pressures.

Estonian interviewees offer the most internally **differentiated picture**. On one hand, the ecosystem is described as genuinely active, functioning accelerators, angel investor networks, a startup community with cultural momentum traceable to the Skype generation, and active collaboration between city organisations, universities, and sectoral clusters in AI, defence, and health tech. On the other hand, the same interviewees indicate that the innovation ecosystem is being obstructed by regulatory burden, bureaucratic grant processes, talent concentration in IT at the expense of other sectors, and a lack of export support creating structural drag. The net assessment is of a country that has built the right foundations yet struggles to ensure continuous progress.

Latvian interviewees describe the ecosystem as **promising**, recognizing achievements, such as sandboxes, student pitch programmes, inter-university collaboration, yet **highlight barriers** – a lack of a national STI strategy, insufficient public funding, weak synergies between actors, a culture of risk aversion, an overregulated IP commercialisation process. One interviewee describes Latvia as having "all the ingredients for success", but failing to combine them.

Lithuanian interviewees describe the innovation ecosystem as **relatively strong**, pointing to the development of lasers, semiconductors, defence tech and deeptech. In view of some interviews, the social sciences and humanities ecosystem is developing, but lags significantly.

At the same time, structural weaknesses identified in both Estonia and Latvia are also present in Lithuania.

### ***Good practices***

Where the ecosystem is functioning well, it tends to share common features: active intermediaries connecting research to industry; personal relationships built and maintained across multiple projects; sector-specific clusters with critical mass; financial incentives aligned with commercialisation; and cultural narratives that make risk-taking and entrepreneurship aspirationally attractive.

Estonia's startup mafia - the community of successful founders, who reinvest capital, mentorship, and networks into the next generation of companies is described as a genuine cultural achievement. The Skype generation created a foundation that subsequent companies built on, bringing Silicon Valley connections and knowledge back to Tallinn. The government's liberal, market-enabling approach, combined with consistent messaging from political leadership about Estonia's digital identity, is credited with having attracted investment and talent over time. Enterprise Estonia's new strategy of integrating universities with industry through accelerators is described as a promising step.

Lithuania's quadruple helix methodology, bringing together state institutions, business, NGOs, and local communities around specific problems, building personal relationships, and maintaining them across projects is described as a practical and transferable model for ecosystem building. The Kaunas-Vilnius infrastructure axis has created a productive competitive dynamic between the two main technical universities. The laser and semiconductor sectors represent genuine world-class niches around which ecosystem development is concentrated.

### ***The structural legacy of the 1990s***

A theme raised across most interviews is the lasting damage done to the science and engineering base in the years following independence. The collapse of Soviet-era manufacturing **eliminated the industrial demand for applied science in the Baltics**. Scientists and engineers lost their jobs, left the profession, or emigrated. Being a scientist became associated with poverty and low status. One Lithuanian interviewee describes engineers earning similar salaries to baristas, making STEM careers economically irrational. The consequence is a broken pipeline. The promotion of STEM careers going against a backdrop of a missing generation of engineers and physicists. Rebuilding that base requires **not just funding, but cultural rehabilitation** of the value of technical and scientific work.

### ***Regulatory environment: the most consistent obstacle***

Across all three countries, **regulation emerges as the single most cited barrier to innovation ecosystem development**. The character of the complaint varies, but the structure is consistent: regulatory processes are slow, unpredictable, inconsistently interpreted, and oriented toward risk prevention rather than enabling experimentation.

Estonian respondents are the most detailed on this point. Biotech companies describe regulatory timelines of two to seven years before permissions are granted, making it impossible for small companies to sustain operations through the process and difficult even for large ones to plan. Local interpretation of national and EU regulation varies across agencies, creating unpredictability that discourages investment. Grant processes are described as lengthy, bureaucratic, and managed by staff, who are neither scientists nor businesspeople. As a result,

some, especially large, companies prefer bank loans to innovation grants. Latvian respondents raise the commercialisation of IP as a specific regulatory failure. The requirement to sell university technologies through open auction, with all documentation in Latvian only, effectively excludes foreign buyers. The prohibition on discussing pricing with potential buyers before auction makes negotiation impossible.

Simultaneously, several interviewees pointed towards **good practices**: Singapore and the US have streamlined biotech and food safety approvals and are receiving European startups as a result. Japan is described as easier for regulatory navigation than the EU. The implication is not that regulation should be eliminated, but that it should be **redesigned to enable innovation rather than to obstruct it**.

### ***Funding: insufficient, misdirected, and structurally distorting***

Public funding for R&D&I is consistently described as insufficient across all three countries. Only small share of research applications receives funding. This represents a systemic waste of potential. A secondary concern is that the pattern of available funding competitions **distorts institutional research agendas**. When a new competition appears, it pulls critical mass toward that topic, regardless of whether it aligns with the institution's long-term research strategy. Institutions become reactive to funding cycles rather than developing coherent research directions. The private sector funding is generally described as limited in scale. Moreover, **AI-related disruption** is currently causing many companies and research organisations to pause investment decisions, creating a period of caution that reduces the flow of private innovation funding.

### ***Talent: the binding constraint***

Human capital is identified across all three countries as a fundamental bottleneck. The specific dimensions of the problem differ by country, but the overall pattern is similar. In Estonia, the talent pool is described as **finite and unevenly distributed**. IT companies have been drawing technical talent from other industries, creating concentration that leaves non-IT sectors underserved. In Latvia, researcher salaries are insufficient to retain or attract talent. The immigration process for researchers from outside the EU is described as taking up to six months. One interviewee argues that Latvia **should position itself as an attractive destination for talented researchers** from non-EU countries, as it would bring the skills the country needs. In Lithuania, the STEM workforce destruction of the 1990s is described as a structural gap that is only now beginning to be addressed. Women in science is raised as a specific topic: the interviewee from Lithuania argues against **social pressure that channels women into STEM**, suggesting that forced pipeline solutions may produce poor outcomes for individuals and institutions alike.

### ***Fragmented support of R&D&I-focused institutions***

Interviewees across all three countries consistently noted an excess of small, under-resourced organisations. A preference for concentrating funding on fewer, stronger institutions is explicit. In addition, several interviewees described many organisations as providing only symbolic support: networking events, coffee meetings, and information exchange that do not translate into tangible innovation results. Institutional quality is seen as heavily dependent on the competence and commitment of individual leaders. This explains the wide variance in quality between institutions that appear structurally similar.

### ***Quotes of respondents/interviewees from Estonia***

*The development of the innovation ecosystem in Estonia is not fast enough. However, if you compare what Estonia had 20 years ago, it is much better now. R&D&I activities are more intense across all sectors and organisations. But I feel we are reaching a saturation curve. The global competition needs more innovation to stay relevant.*

*There are many companies that are foreign investors, their headquarters is not in Estonia. Hence, they do not think much about Estonia. They do not really see Estonia as a place for R&D&I. There are IT companies that innovate, they have been draining IT talent from other industries. But the pool of talent is not endless. This is something what the policymakers should be mindful of. If you want innovation, you need talent and a lot of talent. Estonia is not a place to attract people from Southern Europe – it is cold and dark.*

*Startups impact on the economy is not as large, as we hope for. Large companies and SMEs are key economic drivers, therefore more attention, more support should be given for them to innovate, to scale, to export. Export support is very limited in Estonia, but companies need a scale.*

*I think without a good innovation ecosystem we would not be such a successful innovative country. Estonia has over ten unicorn startups, all doing their own innovations, and I think most of them are somehow connected to research organisations as well. Universities are actively asking how they can help. [...] The most active ones right now are AI, defence, and health tech. I think it is a very active ecosystem. And looking ahead, the specialisations are clearly pointing in the same directions. AI, defence, and health tech are guiding where we are heading. We are moving towards deeper and deeper specialisation in those particular sectors.*

*I feel that there are two parallel systems in Estonia – one is encouraging innovation and the other is doing everything to stop innovation. On the one hand, the government is speaking about innovation, there are some funding programmes for innovation, we have many start-ups and institutions that support them, we position ourselves as a digital, innovative nation. On the other hand, there are so many challenges for innovators. [...] Regulators are there to find our faults, it seems that there is a strong belief that if you innovate you put someone in danger, you pose risks, you create troubles. Instead of working with us and becoming our partners, who help us to develop new solutions, products, the regulator does everything to question why we do what we do, where are possible risks etc. I have so many stories of when we got totally discouraged to do innovation. Innovators are sort of punished for doing innovation. I don't know how to explain to them – we are not trouble-makers, we want to improve something or create new.*

*In the area of biotechnology, we try to develop proprietary technologies. Key challenge is the absolute uncertainty from the regulator. The regulation timeline is so unpredictable that it discourages innovation. For companies, for investors it is a nightmare. [...] It could take between 2 years to 7 years before we sort out all papers. I think it is not OK and, of course, small companies don't have resources and cannot take such risks. For large companies it is also a challenge, so something fundamentally should change about regulator's attitude, processes and trust.*

*We have a strong start-ups community. Estonian start-up mafia is a community of successful start-ups that are helping other companies. They are cultivating innovation and risk-taking. It affects the culture. This is the direct result of the Skype guys – they became millionaires overnight and they brought the know-how and started investing in Estonia. Then “Wise” and other companies, they had good connections in San Francisco and brought this knowledge here. The people with experience and networks have put a solid start-up foundation here. [...]*

### *Quotes of respondents/interviewees from Latvia*

*I see progress in how private companies collaborate with research institutions – both in terms of intensity and quality of collaboration. Progress is definitely visible, but it is still not optimal, we could do so much more together. Companies gradually start to realise that researchers do important work, not all the time, but when it is applied, it can be very valuable.*

*At the level of goodwill toward science, things are generally fine, but in terms of funding availability they are definitely insufficient. The project competitions that exist are good, but the chance of actually receiving funding is very low. For example, our fundamental large-scale project competition receives around 600 applications. Less than 10% receive funding, but more than half pass the quality threshold, meaning those projects are assessed by foreign experts as good enough to potentially be supported. That is a problem in itself. Another issue is that as soon as a new competition appears, like the biotech one, it is very good and encouraging, but in my opinion it has too great an influence on our own research direction. Long-term, that is not healthy, because we are not developing our own policy.*

*We need human resources to do innovation, to develop science. Let's think how many PhD students we have and who will stay in Latvia. If we look at STEM student number – it is an issue. We work with children/students to encourage them to choose STEM studies. The economy cannot be developed if we only have artists, psychologists and marketing specialists. The bigger question is why do students not choose STEM? I think Latvia and Baltics generally suffer from a lack of reputation – reputation that we do science here, that we can do breakthrough innovation. The system collapsed in the 90s, when manufacturing stopped working and many skilled people shifted to other industries (particularly, services – to buy and sell). There is an assumption that as an engineer you will not be able to have a decent living/salary. What could help? Companies, such as Microtics, sponsor or contribute to research/science more than the government.*

*At the moment, if our university wants to sell a technology, it should go to an open auction. The process is extremely bureaucratic and complex. All documentation is prepared in Latvian, which immediately cancels participation of foreign investors. We cannot have a discussion with potential buyers of a technology about how much we could sell it for. It is considered illegal. Such process is extremely inefficient.*

*My feeling is that Latvia has all the ingredients for success - many great researchers/scientists, infrastructure for innovation etc., but there is a lack of synergies between researchers with other players, which would help to develop an innovation ecosystem. There is no national STI and start-up strategy, the public funding for STI has not been significant, and I don't think the policymakers understand how to connect the world of science with the business world. Scientists do not communicate well the challenges they face, therefore the process of innovation is sort of a mystery. There is hope that it will happen somehow either in the business world or in the science world. Things do happen, but their pace of innovation could be much faster with a bit of help from the policymakers.*

*There are many good practices in Latvia – sandboxes to test ideas, opportunities for students to pitch innovative ideas and then they get help to execute them. Things are happening. Largest universities collaborate with each other – this is also good. So, a lot of good initiatives, but probably their scale could be increased, and more synergies are needed for collaboration.*

*For research institutions, there are different commercialization ways: start-up development, license or sale. Latvian companies, even large ones, have a limited capacity to absorb innovation. Hence, Latvia's research findings are being sold outside Latvia. I mean, foreign companies buy project outputs and turn them into real products. It is sad that we export our research findings/ideas, but there is not enough demand locally, not enough resources, and most importantly, not enough*

*ambition to create a really innovative product. This is one of the reasons why we do not hear much about Latvian innovation.*

*I think the major problem in Latvia is the general culture of risk aversion. If you fail, you are a loser. If you take risks, you are putting yourself in trouble. This is very toxic. I know that young people are slightly less risk-averse, but we need to radically change the attitude towards innovation, towards life generally.*

### **Quotes of respondents/interviewees from Lithuania**

*I can share this mostly from personal experience. About nine years ago we were invited by Finnish partners to join a consortium where we first really understood how innovation ecosystems should be built, developed, and brought to strong, mature units in society. [...] Now there is still quite a large gap, I would say, between the technological innovation ecosystems and those in social sciences and humanities. The technological side is clearly the most advanced, and that is where the best achievements are visible. Lithuania has a lot of inventions and real advancement in areas like the laser industry and other technological fields. In social sciences and humanities there is progress too, but the levels are different. [...]*

*In terms of how we practically build these ecosystems, we use what is called the quadruple helix approach, which we learned from our Scandinavian partners. It starts with building connections, personal ones, finding specific contacts in state institutions, business, NGOs, and local communities. We bring them to a round table, present what we want to develop, gather feedback, and keep working until we reach expected results. And to make the ecosystem sustainable, we stay connected with those people after individual projects end. [...]*

*The Baltics have destroyed their science base since regaining independence. In the 1990s almost all the manufacturing companies got closed, demolished. Public funding for science was minimal. Scientists, engineers were left without jobs. Being a scientist meant being a dreamer and being poor. [...] Now suddenly the government starts to scream about the importance of STEM. But we lost the generation of engineers, of physicists, of chemists. We have destroyed our science base. Still the salaries of, for instance, engineers are not high enough. It makes more sense to go into law, business than to choose a career in the STEM fields. This links back to why Lithuania has little manufacturing. There are no people, who can develop it. Engineers have similar salaries as baristas.*

*Evaluation systems of researchers in Lithuania are based primarily on scientific publications. This is accepted at the ministerial level. [...] This creates a divide within academia: some researchers focus on publishing papers, while others aim to engage in practical, industry-oriented work. To some extent, both types of researchers have value, but the current system tends to reward publications over real-world impact. Writing papers is often the safer path – you don't need to take a risky path and try to make a real change, find partners, test technology etc. Until the evaluation system of researchers does not change, we will not have real science.*

*Lithuania's innovation ecosystem has genuine strengths in specific niches. Semiconductor technology is globally recognised, Brolis Semiconductors is an internationally known example. Laser technology is world-class and represents a significant area of research concentration. Military technologies, drones, laser systems, military textiles, have become an increasingly prioritised area in the current geopolitical context. Circular economy and construction materials optimisation represent a growing field. Energy is an area of significant potential, including solar panel production, smart grids, offshore wind, and gas technologies.*

*Geographic concentration is the ecosystem's most significant structural weakness. The interviewee visited 26 Lithuanian municipalities over approximately 18 months as part of a green municipality network analysis and observed dramatically unequal innovation capacity between urban and remote areas. Small and medium businesses in remote regions are poorly served by state support and financing mechanisms, procedures are complicated, possibilities are unclear, and communication from state institutions does not reach them effectively. This pattern, innovation concentrated in capital cities and major centres, thin capacity elsewhere, characterises Latvia and Estonia as well.*

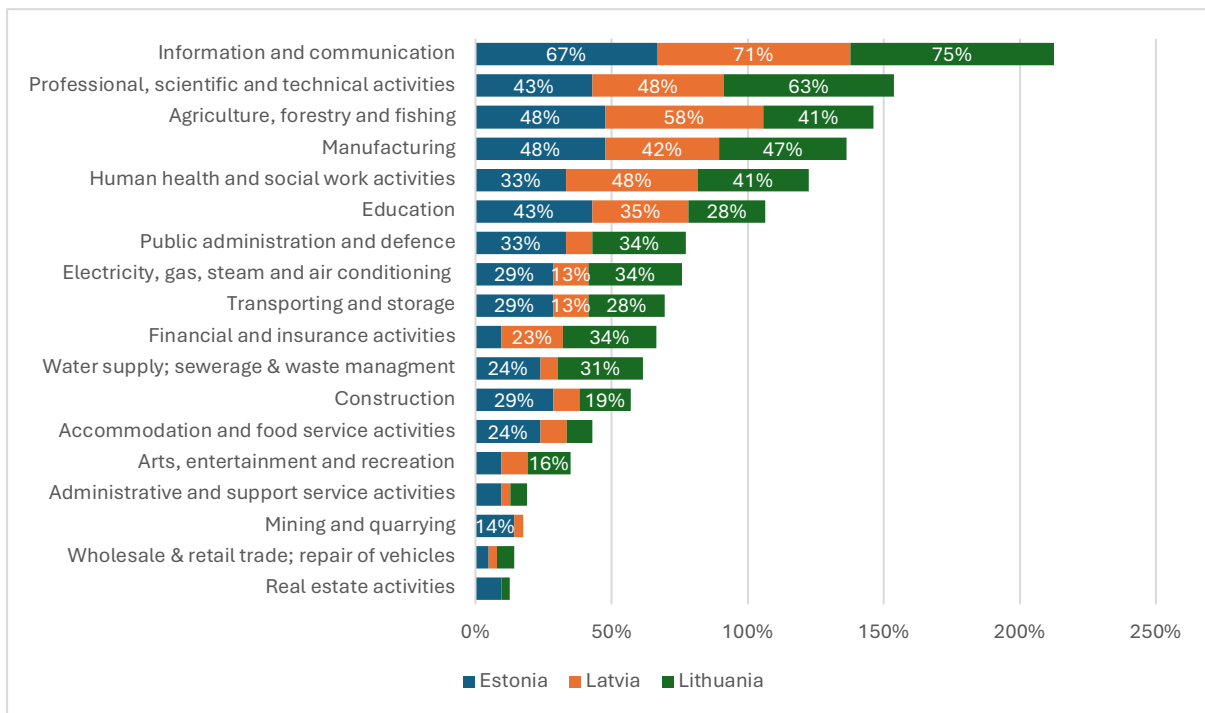
*Structural improvements in Lithuania include the Kaunas-Vilnius axis: improved highway and rail connections between the two cities have created a competitive dynamic between the two main technical universities that drives both institutions. Infrastructure improvements in Klaipeda have also expanded the innovation geography. Brownfield investments by larger companies in previously abandoned industrial sites in remote regions are beginning to create positive spillover effects. However, the fundamental challenge of building innovation capacity in municipalities outside the main centres remains unresolved.*

### 2.2.3. Innovation-driven investment opportunities

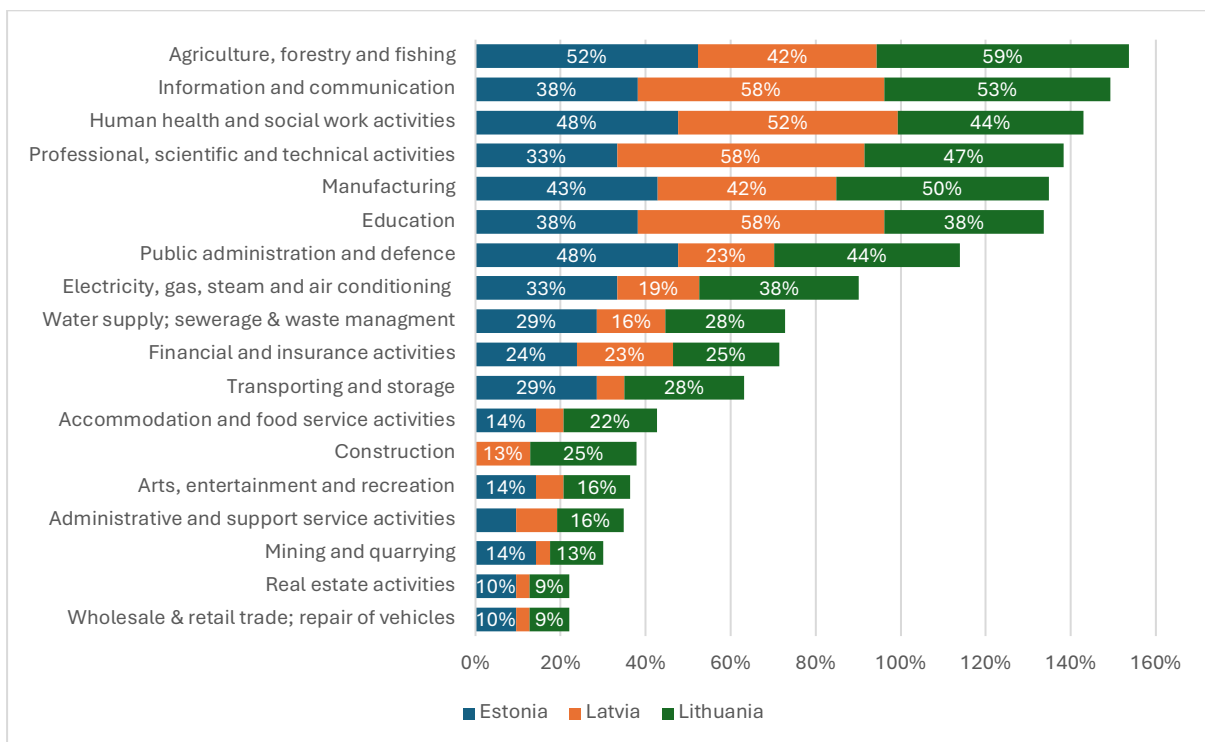
When the survey respondents were asked to identify industries in their countries that, in their view, have the highest innovation potential and those that would benefit from stronger R&D&I collaboration between the Baltic States, many similarities have been identified. **ICT; professional services; health; agriculture, forestry, fishing; manufacturing; energy, and environmental solutions** appear as common areas, where research capabilities can contribute to economic transformation (Figure 27 and Figure 28). These sectors are all being heavily affected by new technologies, particularly digitalisation, automation, data analytics, and AI. They are also sectors, where value chains are changing, productivity pressures are increasing, and the need for new solutions is becoming more visible.

The similarity across the three countries creates **an opportunity to build joint Baltic vertical initiatives**. Instead of each country developing isolated programmes, the region could coordinate efforts to create critical mass, attract global partners, and develop shared research and innovation platforms in selected priority sectors. The key strategic issue is to **identify where Baltic research institutions can offer a distinctive value proposition**. In each sector, cooperation should be organised around the capabilities, where the region can credibly contribute, attract partners, and move from small-scale projects to scalable innovation outcomes.

**Figure 27: Estonia's/ Latvia's/ Lithuania's industries with the highest innovation potential, in view of researchers from Estonia/ Latvia/ Lithuania**  
 (n(Estonia) = 21; n(Latvia) = 31; n(Lithuania) = 33)



**Figure 28: Industries that would benefit from stronger R&D&I collaboration with the Baltic States, in view of researchers from Estonia/ Latvia/ Lithuania**  
 (n(Estonia) = 21; n(Latvia) = 31; n(Lithuania) = 33)



During interviews, the researchers were asked to elaborate on their selection of three industries with the highest innovation potential in their country. In summary, the clarifications emphasized that, first, **data is a universal enabler of innovation**: where data infrastructure is strong, innovation compounds. Second, **resource endowment shapes priorities**. To illustrate, Latvia and Lithuania, with larger agricultural and forestry sectors, naturally oriented more toward bioeconomy innovation. Policy should respect and reinforce these structural differences rather than imposing uniform priorities. Third, **expertise and human capacity** is a key condition for the selection of priority industries. Researchers emphasize that it does not make sense to invest in industries where there is no people or expertise. Fourth, **innovation creates spillover effects for other industries**, therefore policy instruments that recognise and support these linkages would multiply the returns on public investment. Fifth, researchers call for **value addition over raw extraction**. This mostly applies to the natural resource sectors. Below are clarifications grouped into six areas.

### *IT, digital infrastructure & cybersecurity*

These are the most consistently cited sectors across all three countries. Interviewees point to existing talent pipelines and the data economy as structural advantages. Moreover, researchers believe that their country is genuinely ahead of most of Europe in the IT, digital infrastructure and cybersecurity areas.

In Estonia, some interviewees noted that Estonia's knowledge of AI goes beyond consumer applications and practical AI tools for use cases, such as identity verification and domain-specific generative AI. Cybersecurity was also treated as a near-distinct sub-sector, with Estonia hosting both a NATO innovation accelerator and an EU cybersecurity agency, and with a national cybersecurity authority considered among the most capable in the world.

In Latvia and Lithuania, ICT was seen as a vehicle for cross-sectoral innovation rather than purely as an industry in itself. Virtual infrastructure, data systems, and data access were highlighted as critical enablers of deeper research and better decision-making across multiple industries. However, some interviewees noted that access to and governance of data remains an unresolved structural issue that limits this potential.

### *Agriculture, forestry, and bioeconomy*

Agriculture and related natural resource sectors featured prominently across all three countries, though the innovation angles and specific arguments varied. In Estonia, agriculture was mentioned as one of a broad set of industries where cluster-based innovation could be viable, alongside forestry, fishing, manufacturing, and energy.

In Latvia, agriculture and forestry were framed as natural competitive advantages rooted in resource endowment, but the critical argument was about value addition rather than raw extraction. In view of climate change, new approaches to land management, water quality, and ecosystem stewardship are needed. Interviewees believed Latvia had genuine research capacity in this area and could develop competitive, innovative methods of sustainable resource management.

Several interviewees from Lithuania emphasized a dramatic transformation in Lithuanian farming over the past two decades — from traditional, low-technology practice to large-scale, highly digital, precision agriculture. Digitalisation of yield management, reduced fertiliser dependency, and the integration of advanced agro-technologies were all cited as active areas of development. A key gap identified was the absence of large-scale agronomic databases:

unlike medicine, which benefits from extensive datasets for applications, such as diagnostic imaging, agronomy has not yet built comparable data infrastructure. Interviewees saw this as both a current limitation and a significant near-term opportunity. Hydroponics, aeroponics, and the integration of AI into crop management were also mentioned as active research directions.

### ***Defence and security***

Defence emerged as a high-priority sector, driven primarily by geopolitical context rather than pre-existing industrial strength. Drone defence systems, protection of critical digital infrastructure and cybersecurity were identified as the key directions. The dual-use technologies have been emphasised: innovations developed for defence applications often have civilian applications, which broadens both the market potential and the justification for public investment. In this context, manufacturing of defence-related components, such as semiconductors, lasers, and microwave sensing, was cited as part of the broader manufacturing innovation agenda.

### ***Health technology, biopharma, and life sciences***

Health-related sectors were cited across all three countries, with varying degrees of emphasis and from different angles. In Estonia, data-driven capabilities and digital health infrastructure give it a credible starting position.

In Latvia, biopharma was described with notable conviction by one respondent as having "huge potential." The justification rested on the existence of strong research talent, a record of high-quality publications, and the presence of professional institutions and larger companies capable of supporting the development pathway from discovery to commercialisation. Separately, research into algae and genetic materials was cited as a promising niche with potential applications in health-related product development. The environment and health sectors were seen as natural synergies.

In Lithuania, life sciences were treated as an area where interdisciplinary collaboration, combining biological knowledge with data science and engineering, would produce the most significant advances.

### ***Energy***

Energy was raised with consistent importance across all three countries, primarily through the lens of energy independence, transition to renewables and importance of circular economy, and as a base for industrial leadership. Energy systems modelling, smart grid integration, and advanced material science were all mentioned as enabling technologies cutting across this sector.

### ***Manufacturing and advanced industry***

In Estonia, construction and prefabricated building elements were highlighted as having significant, but underrealized potential. The argument was rooted in the applicability of automation, digital planning tools, and IT to physical production processes, given that the sector is not yet widely digitised. Manufacturing more broadly was mentioned as a sector where industrial robots, automation, and digitalisation are actively being adopted.

Interviewees from Latvia emphasized that meaningful progress in manufacturing is possible without requiring massive capital investment, particularly when combined with smarter technologies and research-based approaches.

In Lithuania, manufacturing was described as foundational to the country's long-term economic ambitions. Some interviewees suggested to draw on the work of local institutions in semiconductors, lasers, textiles, defence, microwave sensing, and additive manufacturing. Construction was also highlighted as a strong innovation sector, particularly in circular economy applications, using industrial waste streams as inputs for construction and packaging materials.

### ***Quotes of respondents/interviewees from Estonia***

*Technologies are critical for innovation these days. Technologies power innovation and more so data. Most current innovations are data-driven. If you have data, you will have a service or a product, or at least a process innovation. Data is critical, we live in a data economy, data century. No data – limited innovation potential.*

*Technologies can transform any industries, but I would want to see innovation across several industries – agriculture, forestry, fishing, manufacturing, construction, energy, IT, defence, public administration. It is possible, just need to create clusters of these industries and fund their activities.*

*On AI, I mean practical applications, not chatbots or light consumer tools. In Estonia we already have companies that have been working in this space for over twenty years, starting from what was just machine learning back then and developing all the way to proper language models. Among startups, we are now seeing a lot of very specific, practical AI applications. Identity verification was one of the early ones. Now there is quite a lot of generative AI with genuinely specialised use cases.*

*On defence, we are in the same position as Latvia, holding the eastern flank. A couple of years ago defence innovation was something you could think about if you wanted to be involved. Now it is not optional. [...] We are still at the beginning really, but drone defence systems and protection of critical digital infrastructure are clearly the key directions.*

*On cybersecurity, [...] Estonia is genuinely among the best in the world at this. The national cybersecurity authority is highly capable, a NATO innovation accelerator is based here, an EU cybersecurity agency is also operating here, and there are quite a lot of cybersecurity startups active in this space. Everything is related to IT now and so cyber security sits at the core of defence. [...]*

*I can really only speak confidently about the construction and building sector. I think prefabricated building elements, particularly for insulation and renovation, have significant potential. The reason is that this type of production could be highly automated. IT tools, digital planning tools, and similar technologies are all applicable to fabrication in this area. It is not yet widely adopted but the potential is clear.*

*[...] For energy production, the key driver is the need for energy independence and resilience. Circular economy aspects are part of this too, though that is developing more slowly. [...]*

*We are mainly working with manufacturing companies and in our region, there are quite a lot of them. I know that they are actively using industrial robots, automation, and digitalisation solutions. But there is still quite a long way to go because the potential is much higher.*

### ***Quotes of respondents/interviewees from Latvia***

*Latvia is rich in natural resources, therefore we should use it and use it more wisely – not just shipping abroad raw materials. Plus, the climate change is creating new challenges for agriculture and forestry. Our soil is relatively soft, which affects water quality and ecosystems. While we cannot return to the practices of natural resource management of 100 years ago, new methods are needed and we could be competitive there. We do some good research in this area. [...]*

*In the field of IT, virtual infrastructure, data, and data systems play a crucial role. Data can drive innovation across multiple industries, enabling deeper research and better decision-making. However, access to data remains a complex issue that needs to be addressed.*

*In the health sector, research into algae and genetic materials has promising potential. These natural resources could support the development of new health-related products, highlighting the importance of environmentally focused innovation. Overall, I believe the environment-related and health-related sectors have a great potential and could work in synergies.*

*Agriculture and forestry, I don't know those sectors in depth, but I see them as our core resources that need to be managed wisely. Research is definitely needed there, so it's not just about raw output. The aim should be to add as much value as possible through research.*

*Manufacturing similarly, doing increasingly advanced things, research-based, with smarter technologies. These may be industries where one can try to achieve something without requiring billions in investment.*

*To some extent, investment opportunities depend on what is the government strategy [...]. There is no point to invest in industries and to innovate in fields, where there are no people, no expertise.*

*People are a critical resource, therefore before making a strategy, I would suggest to the government to check where we have knowledge, capacity, market interest.*

*Biopharma has a huge potential in Latvia. We have many great researchers, publications and ideas, large companies, professional institutions that could be of help.*

*We do a lot of innovation related to the defence industry. In that sense, it is actually dual use. There are several large research organisations in Latvia that are collaborating and helping each other, therefore I am sure Latvia is well-positioned to contribute to defence innovation.*

### ***Quotes of respondents/interviewees from Lithuania***

*Agriculture was selected because we have worked extensively on evaluating and assessing the adoption of precision agriculture techniques and technologies. We have seen a huge shift from traditional agricultural activity toward very modern, very digital agriculture. [...] Everything became very digital, very large-scale, and very precise. That is the core argument for agriculture.*

*Information and communication were selected because we are closely connected to research on digital infrastructure change across the country, including in the regions. What we notice is that Lithuania is genuinely ahead compared to much of the rest of Europe in terms of broadband connectivity and internet infrastructure. [...] So we consider Lithuania a well-digitalised and well-connected country in the European context, and that creates the base for further innovation in this field.*

*[...] when looking at global challenges like water saving and energy saving, we are working with hydroponics, aeroponics, and renewable energy sources like solar panels. It is mainly about resource use efficiency, how to make it better, how to manage it. The technological aspect also combines with artificial intelligence. How to combine everything and deliver it to the grower is one of the key questions. There is not much data available yet for digitalisation in agronomy. For medicine, for example, they have very large databases for things like lung scanning. For agronomy, such databases do not yet exist. But that is where the potential is.*

*Manufacturing is a large part of what our institute does. We manufacture semi-conducts, lasers, textile, defence, microwave sensing, additive manufacturing. I wish Lithuania could develop a stronger manufacturing base and be less reliant on other countries. We should gradually shift from a predominantly service-based economy.*

*Three sectors were identified as having the highest innovation potential in Lithuania: ICT, energy, and construction. IT was selected as a clear first choice, Lithuania has strong existing capacity and the potential for digitalisation is essentially unlimited across all economic sectors. Energy was selected because of Lithuania's growing activities in solar panel production, smart grid development, offshore wind, and clean gas technologies; this sector combines legacy industrial expertise with rapidly expanding renewable energy innovation. Construction was selected because the sector continues to drive strong demand for innovation in materials and machinery, particularly in the circular economy context, using industrial waste streams as inputs for construction and packaging materials.*

*Agriculture and agro-engineering were identified as an additional area of high potential. Lithuania has a high level of digitisation in agricultural yield management and is actively introducing precision agriculture technologies, reducing dependency on fertilisers and integrating advanced agro-technologies. [...]*

*Across these sectors, the key enabling technologies include: AI applications for process optimisation, circular economy materials processing, energy systems modelling and smart grid integration, advanced material science, biotechnology, and digital twins for industrial and construction applications.*

When researchers were asked to provide comments on their selection of industries, which, in their view, would benefit from stronger R&D&I collaboration with the Baltic States, the following emerged:

### ***The fundamental case for Baltic collaboration***

The most consistent and passionately expressed theme across all three countries was that Baltic collaboration is not merely desirable, but structurally necessary. Moreover, the current level of cooperation, in view of interviewees, **falls dramatically short of what is both possible and needed.**

The core argument, repeated in various forms by respondents from all three countries, is one of **scale**. Each Baltic state is individually too small to compete globally in most innovation domains, to close material or supply chain loops independently, to build the critical mass of talent and infrastructure that world-class research requires, or to access the largest international markets on its own terms. Collaboration is the mechanism by which these size constraints are overcome.

In addition, several interviewees highlighted that the **Baltic region is viewed as a single entity from the outside**, namely, by investors, by international partners, and by European institutions.

Several interviewees noted that typically only one Baltic state is selected for a large EU-funded project, therefore three countries find themselves competing against each other for a single slot. The structural consequence is that **inter-Baltic competition for resources is built into the current funding architecture**, when what is needed is a system that rewards joint action.

The analogy to Germany and France was drawn by one Lithuanian respondent: large economies compete intensely in many areas and yet collaborate deeply in others, and it is precisely this combination that has driven their development. The Baltics, it was argued, **should adopt a similar model**, specialising where each country has genuine strength, creating complementary production and research cycles, and presenting a unified front to the world.

### ***Defence and security***

Defence was the single most urgently cited area for Baltic collaboration, and the argument was essentially unanimous across all three countries. Specific areas cited for collaborative development included drone defence systems, radar and long-distance detection technologies, protection of critical digital infrastructure, electric control technologies, and dual-use research in areas such as biosynthesis and chemistry.

### ***ICT and artificial intelligence***

ICT and AI were identified as natural domains for Baltic collaboration, given their resources and capabilities. One Latvian respondent described a strategic choice facing Baltic policymakers: either all three countries align around a single shared priority, such as AI, and collectively position the Baltic region as Europe's AI hub; or they map their complementary strengths and build joint offerings around those complementarities. Both strategies were considered viable by interviewees, but the consensus leaned toward the **complementarity model**. Estonia's IT leadership was seen as an asset for the whole region, because an internationally recognised Baltic AI or digital ecosystem raises the profile of all three countries simultaneously.

AI was also discussed in relation to specific application domains. In agriculture, the integration of AI into crop management and yield optimisation was described as a rapidly developing field, where Baltic collaboration could accelerate progress, given the shared agronomic conditions across the three countries. In manufacturing, AI-enabled automation and smart production systems were identified as areas, where joint development would allow each country to benefit from the others' industrial capabilities.

### ***Agriculture, bioeconomy, and natural resources***

Agriculture and natural resource management were cited as sectors, where the case for Baltic collaboration is particularly strong, due to the underlying and shared conditions (e.g., climate, soil types, ecosystems, and resource endowments). Practices developed for soil enrichment, seasonal crop management, or precision agriculture in one country are likely to be relevant in the others. The integration of robotics, advanced materials, and high-tech solutions into the agricultural sector was presented as an area, where regional collaboration would allow expertise to be pooled and projects scaled beyond what any single country could fund or execute independently.

### ***Energy and circular economy***

Energy independence and the transition to sustainable energy systems were consistently cited as natural areas for Baltic collaboration, driven both by geopolitical necessity and by the shared physical infrastructure of the Baltic electricity and gas grids. The argument from Estonia was

straightforward: if the three countries' energy sectors were more deeply integrated and jointly developed, the result would be greater stability of supply and lower prices for all three countries.

Circular economy emerged as one of the most compelling specific sectors for joint innovation, particularly from Lithuanian respondents. The fundamental point was that individual Baltic states are each too small to close material cycles at economically viable scale. Textile recycling was given as a concrete example: the volume of material generated within any single Baltic country is insufficient to justify the infrastructure investment required for meaningful recycling operations, but a regional approach creates the necessary scale. This logic extends to metals, construction materials, and other waste streams – areas, where the Baltic States are currently discarding collected materials that could be productively reused. Green metallurgy and sustainable materials innovation were mentioned as emerging areas, where the Baltics could position themselves as a European sustainability exemplar.

### ***Health technology, biopharma, and life sciences***

Health and life sciences were identified as a domain, where Baltic collaboration could produce outcomes significantly beyond what any individual country could achieve, and where complementary strengths across the three countries are particularly evident. From Estonia, the argument was that health tech represents an opportunity to combine all the region's accumulated expertise in deeptech, AI, and IT in service of a single high-impact application domain.

Latvia was assessed by multiple respondents as having notable strength in biopharma and biomedical research, with strong publications, capable researchers, and established institutions. Lithuania was seen as having made significant investments in building centres of excellence, and a few interviewees mentioned quantum research and biomedicine as areas of particular concentration. The complementarity between Latvia's biopharma strengths and Lithuania's green technology expertise was proposed, as a potential basis for joint offerings in sustainable medical and pharmaceutical innovation.

### ***Public administration and digital services***

Public administration innovation was raised, as a specific area for Baltic collaboration. The argument was partly about cost reduction and partly about scale. The countries have developed different solutions to common administrative problems, and structured knowledge exchange across the Baltic States would accelerate the adoption of best practices.

### ***Relative strengths and weaknesses of each Baltic State***

Interviewees across all three countries offered their assessments of the relative innovation strengths and weaknesses of their Baltic neighbours.

Estonia was identified as the regional leader in IT, digital infrastructure, cybersecurity, and AI. Its strengths are rooted in early investments that created an internationally recognised digital ecosystem, a culture of practical digital innovation in both the public and private sectors, and a well-developed startup environment. Weaknesses noted included the country's very small size and labour shortage, which make heavy industry impractical; a tendency to orient toward Nordic rather than Baltic partners, partly driven by where funding is available; and geographic concentration of research capacity, though this is beginning to be addressed.

Latvia was described as having a strong potential, particularly in biopharma, biomedical research, and natural resource-based innovation. Several respondents noted that Latvia has strong researchers, good companies, and relevant natural endowments, but that these assets are insufficiently coordinated and inadequately supported by public policy and investment. A significant structural weakness identified was the concentration of research capacity in Riga. This geographic imbalance limits Latvia's overall research output and constrains regional development.

Lithuania was assessed as having made particularly strong investments in building centres of excellence and concentrating resources in specific areas of strength, including laser technology, biomedicine, and green technologies. Lithuania benefits from having multiple university cities, such as Vilnius, Kaunas, and Klaipėda, which creates a broader research base than the other two countries. Weaknesses noted included lower ambition in some industrial areas and a tendency toward subcontracting rather than leading innovation.

### ***Quotes of respondents/interviewees from Estonia***

*Market size matters. Full stop. Innovation also needs an ecosystem, as you can access more resources, save costs, develop better ideas and launch them faster on the market.*

*I believe the Baltics should collaborate in the areas of defence, energy, natural resources, IT and many other areas. If our energy sectors were connected and developed, it would give a more stable energy flow and it would decrease prices for all countries.*

*We share a Baltic Sea, we should share good practices on fishing, marine product production. We have a similar climate, we can share best agriculture practices on how to enrich soil, how to best grow products in different seasons. Why don't we do it? [...]*

*Defence collaboration is also critical for security of the region. And for the EU as a whole. I think we talk a lot about collaboration, but do very little together, as it is connected to funding. Maybe the EU could help the Baltics to work together? It is in the interest of the EU, it is not just a Baltic "good-to-have".*

*Every country has its own strength and niches, where they could share good practices and learn from other countries. To find good partners is not easy, as there is a barrier of trust. There were cross-border programmes between Estonia and Latvia, but conditions were ridiculous – too many requirements, too low funding. This kills collaboration.*

*[...] Estonia is a small country and short on workers, so heavy industry is not realistic. But smart industry could definitely be one area where Baltic cooperation would add real value.*

*Health tech is another one I would keep on the list. I think health tech is where we could genuinely take everything we know in terms of deeptech, AI, and IT and put it to use together. If the three Baltic countries combined their innovation efforts in health tech, rather than doing separate things, there could be a real breakthrough. Some kind of joint Baltic innovation project in that area could go much further than what any one country could do alone.*

*For defence, the shift is clear. It has come to the university as well. There is now more demand, more programmes, and we are being asked to apply for and support defence-related work. Students at our branch have already developed a company and a monitoring system connected to this area. A few years ago that was not the case. The war changed the urgency and it is felt directly in how research priorities are shifting.*

*Energy independence was also raised as a shared priority for Baltic collaboration, and I would agree. Strengthening energy production collectively across the Baltics would reduce dependence on external supply and expand the manufacturing and grid capacity of the region.*

*For public administration, we have communicated quite a lot with municipalities and the public sector. I see that they are also very interested in innovation solutions. They sometimes have funding for that and they try to develop solutions for citizens, or for cities, or to solve environmental issues. And if you do it with cooperation across countries, maybe it is more effective. Different regions or countries have different experiences, and they can share what works and what to avoid. [...]*

*There is a need for a greater Baltic collaboration, especially scientific and industrial collaboration. Estonia has more partners from the Nordics, as the hindering factor is financing. For scientific research and industrial collaboration, use Nordic grant mechanisms. Therefore, for the Baltic collaboration to make it work, money should be available.*

*I am sure in some areas – food, defence, infrastructure - it makes sense to collaborate. But we could do even more in the biotech side – Lithuania is building a good track there. Investors and the world is looking at us as one region.*

#### ***Quotes of respondents/interviewees from Latvia***

*In large EU-funded projects typically only one Baltic State is selected to participate. As a result, the Baltic countries often compete against each other for inclusion. From an external perspective, the Baltics are viewed as a single region, which limits opportunities for multiple countries to join the same project. When projects are specifically designed for the Baltic region, then collaboration runs normally. [...] So, this competitive dynamic presents a challenge for healthy collaboration.*

*We [Baltic States] simply should not be put in situations, where we are fighting for one opportunity. [...] The governments in the Baltics should think how to make us work together and bring more positive synergies and communication.*

*Good collaboration means knowing our areas of expertise and of our neighbours. For example, in the area of water-related research, Latvia's strength lies in having a central institution that monitors water-related activities across the country. [...] Estonia has a similar structure, with a dedicated water institute and strong monitoring and research capacity, supported by a well-developed environmental institute. In contrast, Lithuania has lower research intensity in water-related fields, with monitoring spread across several institutions. [...]*

*Institutional collaboration within Latvia remains limited. Universities often prefer to work independently and engage in partnerships only when it directly benefits individual researchers. Estonia and Latvia have similar academic networks and approaches to data management, with relatively strong capabilities in data collection. Despite this, collaboration is hindered by a lack of trust. Researchers are often concerned that sharing data could lead to others publishing results first. This creates a race to publish first, therefore trust towards partners is so critical. [...] Trust, however, is developed through experience. The more we collaborate with each other, the more we trust. It is a "vicious circle".*

*The more I think about collaboration between the Baltic States, the more it makes sense. Given that our institute works in the area of environment, we actually need data from Estonia and Lithuania to analyse the situation in Latvia. [...] We need more joint projects, we need political support to work more together, as environmental systems are so interconnected and activities in one country affect the others. [...] The political agreements made at the ministerial level typically do not reach the organisations and people, as besides statements and signed documents there is no real money*

*behind it and no real political will. As a result, collaboration remains a fantasy. Commitments should turn into action.*

*On the Baltic dimension, our three countries have many similar problems, and while we are small, we can achieve more through collaboration. [...] We should also think about Baltic-level innovation grants, not only national ones. That could provide additional benefit beyond what Latvia can achieve alone.*

*As for strengths and weaknesses, Estonia most likely has IT as its strongest area. It started with Skype and developed from there. [...] However, [Lithuania has] found some excellence centres where they have concentrated resources. They also managed early on to invest significant funds into their universities, which has yielded results in the form of more centres of excellence. In something specific like biomedicine, we have quantum research and a few other standout areas, but I think they have many more such centres overall. Lithuania also benefits from having multiple university cities, Vilnius, Kaunas, and Klaipėda, which gives them a broader base.*

*I think the selection of industries or areas in which we should collaborate depends on a strategic political choice. Either we select same areas, such as for example AI, and position Baltics as the AI hub of Europe, or we look for complementarities. For example, Latvia has a good pharma, Lithuania has good green technologies, Estonia has good IT industry. Together, they create novel medical and sustainable solutions.*

*Collaboration is always a smart thing, it is a sign of intelligence, because you manage to push your ego away and adjust to the needs of others. I don't think there has been a political will among the Baltic policymakers to look at this partnership strategically. [...]*

### **Quotes of respondents/interviewees from Lithuania**

*On the question of whether this should be driven by government or through natural cooperation, what we feel very strongly from our research is that top-down decisions do not work. When something comes down from above, people resist and nobody really moves. But when different stakeholder groups sit at the same table and discuss, they consistently make much better progress than any government-driven initiative. [...]*

*There are some regional strengths: Lithuania has developed a strong laser industry, Latvia shows potential in biotechnology. However, much of the region's industry operates as subcontractors rather innovation leaders. A broader issue is a lack of ambition and risk-taking in innovation, shaped by historical and structural factors.*

*If we look at the agricultural sector in the Baltics, I think it has many investment opportunities if we used robotics or developed high-tech solutions, advanced materials. Regional collaboration across the Baltic States is a must for this. We could join expertise and scale projects. Then sell them together internationally. [...]*

*There is an institute in Olaine (Latvia) it focuses on biosynthesis, chemistry, biotechnology. Kaunas military buys what they develop. It is important for defence. Overall, defence is another critical area, where Baltics should collaborate. We already develop something, but it is not large enough – radars, long-distance detectors. Same for the area of electric control technologies, machines, machinery – each country has some good instruments and, if we collaborated more, there would be more investment. [...]*

*Why do Baltics not produce furniture? Who can explain this to me? I mean, we have so much wood, we have engineers, designs. We have everything we need. [...] Why not develop it together? Why*

*not strengthen our energy connectivity and energy independence? [...] I don't vote for becoming one country, but we should work as a synchronised network, we should build synergies and have joint plans to gain competitive advantage.*

*Light/green metallurgy – it is starting to develop in the Baltics. We are restoring some aspects of our environment ecosystem, working on waste models, cleaning water. I think Baltics could be such a great sustainability example. But I know that we throw away collected metals, which we could use.*

*[...] The key challenge is competitive for a financial flow. Currently, we compete for the same opportunity – either it's a research project or an EU fund or something else. [...] We need to share resources, we need to have a joint pool of money. [...] Look at Germany and France they compete, but they also collaborate in so many areas. This is why they've developed so much. I think we need to split the process of production – each country is good at something and is developing that. Together we create a cycle of production and fight together for a better market position.*

*Circular economy was identified as the most compelling sector for Baltic R&D&I collaboration. Individual Baltic states are each too small to close material cycles independently, textile recycling was cited as a specific example where national-scale processing is not viable but regional-scale operations are. Collaboration between the three states allows the closing of circular economy loops at a scale that makes economic and technical sense.*

*On relative strengths and weaknesses: Lithuania benefits from the competitive dynamic between its two main technical universities, and from improving infrastructure between Kaunas, Vilnius, and Klaipeda. Latvia's research capacity outside Riga is notably lower than in the capital, universities in Jelgava, Liepaja, and Daugavpils were assessed as operating at a significantly lower research level compared to Riga-based institutions. Estonia has historically concentrated capacity in Tallinn but is beginning to attract more distributed investment. All three states are individually too small to compete globally in most sectors, but their combined intellectual potential is genuinely high, and joining forces to represent the region as a whole is more valuable than inter-Baltic competition.*

#### 2.2.4. Policy instruments to untap the innovation potential

When the researchers were asked to select policy instruments that would help to unlock the innovation potential in their country, the responses indicate that the focus moving forward should be to create **instruments that foster cooperation among the different stakeholders of the innovation ecosystem** (Figure 29). Policy instruments should not only finance research, but also create incentives for collaboration, market engagement, scaling-up, and the development of high-added-value products and services.

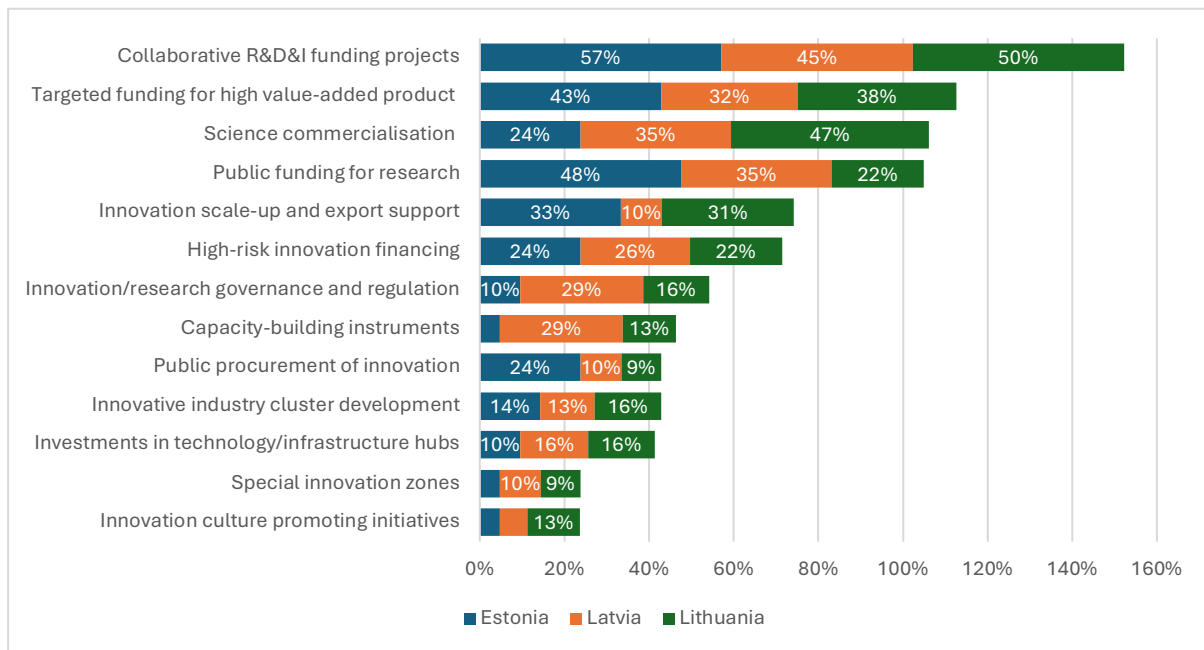
The results suggest that Baltic countries need more targeted strategies that search for instruments, funding mechanisms, and cooperation schemes in sectors that can provide stronger financial, market, and research support. This means **prioritising partnerships with actors that can help transform research into scalable solutions.**

**Large companies** operating in the Baltics, including those in IT, retail, smart technologies, manufacturing, and construction, **appear underrepresented** in the research and innovation agenda of universities and research institutions. Policy instruments should therefore encourage stronger cooperation with these companies, while also connecting Baltic research capacity with global industry leaders.

Baltic-wide instruments could be particularly useful in areas, where the three countries share capabilities and challenges. Coordinated action would allow the region to approach global partners with a stronger proposition, larger scale, and more coherent innovation agenda.

**Figure 29: Types of policy instruments that would untap Estonia’s/ Latvia’s/ Lithuania’s innovation potential from the perspective of researchers from Estonia/ Latvia/ Lithuania**

(n(Estonia) = 21; n(Latvia) = 31; n(Lithuania) = 32)



When representatives of the research community were asked to elaborate on their selection of the three policy instruments that they believe would be the most effective in unlocking the innovation potential of their country, the following arguments were used:

***Public funding for research is a critical enabler***

Across all three countries, interviewees consistently identified public funding as the most essential policy instrument and criticised how it is currently designed and administered.

In Estonia, several researchers noted that public university funding already accounts for less than half of total institutional revenue, **forcing overreliance on project-based and EU sources**. High-risk innovation, particularly the transition from lab prototypes to scalable production (the "valley of death," covering TRL 8–9), is **chronically underfunded**, with no clear mechanisms to bridge each iterative development step.

In Latvia, a few researchers argued that funding **should be concentrated rather than dispersed**: investing in a small number of high-potential projects and market potential would generate stronger spillover effects than spreading thin support across many mediocre initiatives. The current approach of supporting low-resource-intensity industries, while neglecting capital-intensive sectors (medical, microelectronics) was criticised as politically convenient, but economically ineffective.

In Lithuania, interviewees argued that without sufficient state investment, the research talent pipeline would collapse. In addition, they noted that the economic returns from implemented

innovations **must be made visible and attributed across ministries** to ensure that research investment is perceived as a driver of national income rather than a cost.

***Collaborative networks are most effective to drive innovation***

The need for structured, incentivised collaboration emerged as one of the most frequently and passionately expressed themes across all three countries.

In Estonia, interviewees stressed that **innovation ecosystems**, not isolated actors, **produce successful outcomes**. Start-ups connected to researchers and large companies are more likely to survive. Some researchers praised an **emerging Enterprise Estonia initiative**, which is expected to channel R&D grants through large companies to launch collaborative projects and thereby connect other stakeholders in their network.

In Latvia and Lithuania, researchers lamented that industry and research communities tend to work in parallel rather than together, despite the clear potential benefits of combining data, expertise, and infrastructure. Large companies were also seen as the **most capable ecosystem builders**, given resources and scale of their activities, and urged the governments to create instruments specifically designed to incentivise large firms, including state-owned enterprises, to take the lead in driving collaborative innovation. In addition, they noted that small and medium firms are better positioned to take risks and experiment, particularly with locally sourced materials.

***Mission-oriented and bottom-up programme design should be introduced***

Several interviewees challenged the top-down design of current innovation support programmes, arguing that effective policy requires genuine stakeholder involvement and, ideally, should be structured around clear societal or sectoral missions, such as building defence capability or developing a health technology, rather than generic innovation support.

In Latvia, additional arguments were made about the need for selectivity and quality in programme design. The selection criteria for grants matter as much as the design of the programme itself: funding a small number of genuinely strong projects was argued to be far superior to supporting a large number of mediocre ones. The concept of "success stories" was highlighted: Latvia needs a small number of well-supported champions whose achievements can be communicated and inspire the broader ecosystem.

Some interviewees in Lithuania, however, emphasised that no single policy works uniformly across all sectors or institutions. Different research fields have different needs, ministry relationships, and pathways to application. Effective policy must be calibrated to these specificities rather than applied as a uniform national average.

***Talent attraction, retention, and capacity building should be prioritised***

The attraction and retention of top talent, as well as building the right mix of skills, was raised prominently. In addition, it was highlighted that researchers lack basic business and project management competences, which limits their ability to translate scientific work into commercial or policy impact. Thus, a call was made for mandatory training in deep science commercialisation for researchers involved in applied work, with project teams explicitly including financial specialists and lawyers.

### ***Innovation culture and risk appetite should be enhanced***

Interviewees across the Baltic States suggested social campaigns, trainings or cultural initiatives to increase ambition, change cultural perceptions of innovation and stimulate ecosystem/network development. Numerous times interviewees stressed that failure should be accepted instead of penalised.

### ***Reducing administrative burden and regulatory barriers is a fundamental element***

Once again, the interviewees pointed to the stifling effect of excessive bureaucracy, overregulation, and overly rigid administrative procedures on innovation activity. Regulatory sandboxes were proposed as a constructive alternative, helping innovators "legalise" their inventions rather than blocking them with rules.

#### ***Quotes of respondents/interviewees from Estonia***

*Innovation needs ecosystems. Those start-ups that are connected to researchers, to large companies, they are more likely to succeed. Communities must mix to exchange knowledge.*

*For successful R&D&I programmes, the stakeholders should be involved in the design of policy instruments. If possible, it should be bottom-up. Otherwise, it is not going to work. People, who want to innovate, who know what kind of resources they have should say to the policymakers what kind of support they need, not the other way around.*

*I would say mission-oriented innovation programmes first. Taking clear end goals, like the ones from the three sectors we discussed, and building programmes around those goals. In defence, the end goal is clear. In health tech, the end goal is keeping people healthy and away from hospital, expanding healthy lifespan. So mission-oriented programmes, combined with grants specifically geared towards those missions. That would be number one.*

*The second thing that has worked well in practice is small, easy-to-apply-for innovation grants, specifically structured to require collaboration between companies and universities. The amounts do not need to be large, starting from a few thousand euros. What we saw is that companies used even those small amounts very effectively when the condition was that the work had to be done together with a university. [...] The collaboration requirement made a real difference.*

*And the third thing is talent. More smart people, more top specialists, and making it as easy as possible for them to come and work in Estonia, particularly in R&D centres. Legislation that creates a fast track for top specialists, combined with tax incentives for both the people coming and the companies hiring them. [...]*

*The most important instrument for researchers like me is public funding. For the full university, public funding now accounts for less than half of total revenue. The rest comes from projects and European funding sources. Direct, accessible public funding for research is what allows the work to actually happen.*

*For scale-up, this is always a key issue. We very often have prototype solutions in the university, but to scale them up into production, companies say there are no ready technologies, there is no experience. Sometimes we have a solution in the lab but to scale it up, there is no experience and there are different issues at every step. We try to move step by step, solve one thing, test it, get results, make changes, then another iteration. But it is not always clear how to get the funding for each step. You have a good idea but if you do not have enough knowledge or funding, you cannot move forward.*

*[...] in Estonia this is very complicated for innovative solutions. There are very strict procedures. If you prepare your proposal for something quite innovative, you often cannot describe all the steps precisely in advance or what the result will be. Sometimes the regulations are too strict. And if something does not match the list exactly, that is already a problem. It is discouraging.*

*[...] for the private sector, the co-funding requirement is sometimes very high. If a company has to pay most of the project budget themselves just to receive 20 or 30 percent from the state, and they have to go through all the bureaucracy for that, then many of them just say it is not worth it. If they can do it alone, they do it alone. And if they cannot, they do not do it at all.*

*I know that currently Enterprise Estonia is thinking about a very strategic step – to provide R&D&I grants for large companies, which would bring other companies in their network. Basically, an innovation ecosystem building around large companies. [...] You take mature companies, which in many cases in the Estonian context are international/foreign-owned companies, and they do R&D&I projects in collaboration with other entities. I think it is a very good idea, it has been validated abroad. For us, it makes sense, we don't have too many resources to reinvent the wheel, we need to take good practices from other countries.*

*To stimulate applied research, there is a main grant mechanism at Enterprise Estonia. It is a good grant, but with very strict conditions and an evaluation on who should get the money. The problem it reveals is the following – we/researchers don't understand the market – no market insight, no understanding of a pipeline, export readiness. Until now, the researchers have been thinking only until TRL 3. Now we start doing small market analysis, but these are very first steps. There is still no mechanisms in Estonia to cover TRL 8 and 9. This is the valley of death, especially for investment-heavy industries. This is where start-ups are weak.*

*Why technologies or innovations fail? I think for two reasons - consumer perception, legal/regulatory issues. [...] In Estonia, digital innovation is promoted and people want it, but other innovation is not well-perceived in Estonia. So, we need to explain to people that trying new things is good. The next challenge are regulations. Regulatory sandboxes are good instruments to find a way how to make something legal. We need a different culture at our regulatory institutions, they should say – come to us and we will help you to "legalise" your invention, instead of killing innovation with a set of rules. [...]*

### **Quotes of respondents/interviewees from Latvia**

*The government should invest more in education and science. They play a central role in economy and in good governance. [...] Government institutions may prioritise short-term public approval—particularly from groups such as fishermen or port-related stakeholders—over scientific evidence. As a result, long-term thinking is often lacking and we-researchers are feeling ignored by the policymakers.*

*Stronger collaboration between industry and researchers working in the same fields would produce great benefits to the country, I am sure. Such cooperation could help bridge gaps between knowledge, policy, and practice, leading to more sustainable and economically sound outcomes. If we combine our data, expertise, infrastructure resources we could have a greater influence on government, on the country generally. Sad that both communities tend to work apart.*

*On public funding for research, I am not one of those who believes money should simply be handed out for research without accountability. But funding is needed. [...] Right now we lose many promising ideas somewhere along the way. A project did not get funded, the researcher moved on.*

*If we were to fund, say, 30% of projects rather than under 10%, even if half still would not pass the quality threshold, we would accumulate far more seeds of future ideas over time.*

*We also need to distinguish exploratory research projects from projects precisely aimed at creating specific innovations or technologies, and track them differently. In the latter case, the path to the result is already relatively clear and just needs to be executed. In exploratory research, by definition, we do not know what will come of it, and we need to be ready to accept that some ideas will not be confirmed.*

*There are different public support instruments for innovation, but of small scale, which discourages the creation of resource-intensive, high-value added inventions. The government is more likely to support the creation of socks rather resource intensive industries, such as medical, microelectronics or other industries, where regulation is needed. In my view, approach should be different. It is best to support two or three good projects, which will generate a trickle-down effect for other industries and companies, than to spread money thinly everywhere. It is politically convenient, but it is not effective.*

*LIAA vouchers and competence centres – it is good that we have these instruments, but I think the voucher financing should be larger or it should be proportionate to the industry needs. Otherwise, we will support only resource non-intensive industries.*

*Large companies have the resources and capacity to create an ecosystem around themselves, therefore I believe the government should create instruments that encourages large companies to take the lead. Same applies to the state-owned companies. Large state-owned companies should become real innovators, which will push forward the entire industry.*

*I am convinced that business basics and project management should be taught to all researchers. There should be a course on deep science commercialization. The researchers that are already involved in applied research and commercialisation activities could attract more researchers and encourage them to become project/research manager. In addition, the project team should include financial specialists, lawyers. There should be a clear understanding of what roles are needed.*

*When it comes to financial instruments, let's focus not only on the design of a programme, but also on the selection criteria. Let's invest in 5 good projects with high innovation and market potential, instead of in 40 OKish projects. Successful projects will become champions and push forward the entire industry. Latvia needs success stories, these can be developed from a few really good cases and then communicated well.*

*Very important call to the policymakers – please avoid overregulation. Every step is being bureaucratized and checked – it is too much control and paperwork. It discourages innovation. Please allow people to do their thing, learn to trust that everyone is doing their job.*

*I think start-ups could be the drivers of the innovation ecosystem. Given that people are risk-averse and established companies have a lot of lose, I think start-ups are ready to take risk, therefore they are more likely to become an innovation driver in Latvia. [...]*

*We need cultural initiatives, which would kill this risk aversion in us. People in Latvia have a low ambition, they don't think in terms of developing the best product in the world or in Europe. The mentality is more focused on survival. This needs to change.*

### ***Quotes of respondents/interviewees from Lithuania***

*On public funding, what we currently see is that it goes to areas that are more promoted or more lobbied. We think effective policy instruments should serve the needs that are truly urgent, and that means public funding should be allocated based on bottom-up initiatives, where the need is greatest. [...]*

*On innovation culture, this is always a challenge because the technological part of society progresses very naturally and innovation culture is just embedded there. But those on the social sciences and humanities side always lag behind. So the promotion of innovation culture needs to happen in collaborative forms, bringing these two sides together. And crucially, public funding should not create conditions of competition. It should create conditions for collaboration. There are already very good examples of this, like research valleys, where businesses, scientists, and society come to the same physical spaces, discuss, see each other's work, and feel how innovation actually happens. That is very important for fostering innovation culture, and policy instruments devoted to these kinds of collaborative multi-stakeholder activities are the ones that really work.*

*For our lab specifically, project-based funding is the most important instrument. But for science more generally, I do not think one single policy works across all areas. It depends very much on the field and the institution. [...] The forestry institute works directly with its ministry. The horticulture institute works with growers and industry. What works for one does not necessarily work for the other. So, I do not think there is one overarching policy that would stimulate all of Lithuania equally. It is very field-specific.*

*Spinoff company support is currently missing and it is an important piece to scale innovations. Public procurement would help to stimulate more innovation in the country. Financial support for deeptech creation is also needed – it would push ideas towards a higher technology level.*

*Fundamentally what needs to change is the evaluation system of institutions. Otherwise, we waste so much time and resources...and paper...for the sake of paper.*

*Innovation also requires a different industrial approach. Instead of relying solely on large companies, which tend to avoid high-risk projects, innovation should be fostered in smaller, more flexible firms as well. Large companies still should be the key drivers of change, as they have the resources to do so. But smaller companies can experiment, take risks, and develop new products, particularly in areas based on local resources such as wood, agriculture, or marine materials. Successful innovations can later be scaled or integrated into larger enterprises. Collaboration between large and small companies is critical for real innovation.*

*If the government supported innovation in small firms, it could have an additional spillover effect. Small companies that are based in regions, could stimulate regional development and help to address depopulation. Decentralising innovation, but creating innovation networks with larger companies and with research institutions is what we need.*

*Ultimately, innovation involves risk, and failure should be accepted as part of the process. Without structural changes, stronger collaboration, and a shift in incentives, science risks remaining disconnected from real-world impact. [...]*

*If you want to do some reform – reform the academy of science in all Baltic States, focus on science and engineering. Stop evaluating positively just paper producers. [...] There should be a political request to change the system. We should do the evaluation of real research activities. [...] And don't put money into universities and faculties, which cannot do applied science.*

*Public funding for research is the foundational instrument, without adequate state investment, research capacity cannot be built or maintained and the talent pipeline dries up. [...] GDP allocation to R&D functions as both a political commitment and an international benchmark: all genuinely progressive economies maintain high R&D spending as a share of GDP, and the correlation with innovation outcomes is consistent.*

*[...] universities must be recognised not only as educational institutions but as economic actors and job providers in their own right. [...] Critically, innovation policy must be understood and championed cross-ministerially rather than confined to the Ministry of Education and Science. The economic return from implemented innovations, their contribution to GDP, must be made visible and attributed, so that investment in research is seen as a driver of national income rather than a cost.*

## Chapter 3: Messages to the national, EU and Baltic policymakers

The current chapter provides messages that the foreign investors and researchers have left for the national, EU and Baltic policymakers in the survey. These messages are presented separately by country and by the type of respondent – investor or researcher. Prior to the presentation of quotes, a short summary of key messages is displayed.

### 3.1. Messages of the foreign investors in Latvia

Below are the key messages from foreign investors in Latvia to the Latvian Prime Minister:

- **Move from planning to implementation:** Latvia needs a clearer long-term economic direction that extends beyond election cycles and is followed by visible action. Investors are not asking for more broad strategies, but for defined priorities, clear ownership, stable funding and practical delivery.
- **Increase R&D investment and strengthen commercialisation:** Sustainable economic development requires stronger public and private investment in research, development and innovation. Investors point to targeted R&D tax credits, preferential financing, public co-investment, cheap loans for high-value-added start-ups and university technology transfer support linked to commercialisation outcomes rather than only academic outputs.
- **Treat human capital as a core competitiveness priority:** Education, STEM skills, entrepreneurship, healthcare, migration and demography should be addressed as economic priorities. Latvia's ability to innovate and grow depends on attracting, retaining and developing people who can build companies, commercialise ideas and modernise the economy.
- **Make the state faster, simpler and more innovation-friendly:** Public administration should reduce bureaucracy, avoid premature overregulation of new technologies, and use digital tools, AI and public procurement to support innovation. The state should act as an enabler of new solutions, not as a bottleneck.
- **Focus innovation policy on a limited number of high-value sectors:** Latvia should concentrate resources where it has realistic potential to compete internationally. The sectors most clearly mentioned by investors include deeptech, AI, bioeconomy and forestry-based innovation, photonics, defence technologies, medicine and health technologies.
- **Help companies scale, export and access growth capital:** Latvia should support companies beyond the early start-up stage by improving access to finance, strengthening capital markets, supporting export growth and helping Latvian companies enter Baltic, European and global markets.

#### *Quotes of respondents/interviewees from Latvia*

*Professional, scientific and technical activities* – Budget deficit should go for cheap loans for high value adding startups.

*Construction* – Identify max. 3 priority sectors for innovation, form industrial clusters, align industrial policy with energy policy, explain to population need for innovation, e.g. energy independence.

*Financial and insurance activities* – Have a coherent and targeted plan identifying certain industries, that is clearly communicated to business and society and sufficiently funded.

**Manufacturing** – Without public investments into R&D there will be no sustainable economic development in Latvia.

**Electricity, gas, steam and air conditioning** – Thank you for the last 4 years and focus on defence industry.

**Real estate activities** – Support the development of the capital markets based on models from i.e. Sweden. Look at neighbouring countries to develop a more competitive marketplace, adopt best practices e.g. legislation and tax policies.

**Information and communication** – Please do not over-regulate innovation or new technologies use like AI, when it hasn't still gotten to the speed. It needs to be accelerated and supported for the commercial use, business effectiveness and Latvia competitiveness, but not among the Baltic countries, but in the World at large. We are here not to be better than Estonians or Lithuanians. We are here to be one of the best countries to live and do business in EU.

**Transportation and storage** – Business development in Latvia should be supported more than now.

**Manufacturing** – Latvia and the Baltic region must significantly increase public and private investment in research and development. Latvia should deepen innovation cooperation with Estonia and Lithuania by creating joint research programs, shared startup funding mechanisms, and cross-border technology clusters. Universities must become key drivers of commercialization. Latvia should simplify immigration procedures for highly skilled professionals, support the return of Latvian scientists abroad, and invest heavily in STEM education and entrepreneurship. The public sector can accelerate innovation by using public procurement to test and deploy new technologies.

**Transportation and storage** – If a problem is framed as a general challenge, policy often becomes an ongoing process without a clear endpoint. We should start calling things as they really are.

**Manufacturing** – More support to Latvian Companies to market products to Baltic countries.

**Wholesale and retail trade, repair of motor vehicles and motorcycles** – To survive and prosper Latvia must become attractive place where people come to live, work and raise their children.

**Transportation and storage** – Think 3 steps ahead, have a long-term vision, stick to it!

**Electricity, gas, steam and air conditioning** – Don't surf on waves of pre-election time populism!

**Human health and social work activities** – Latvia can unlock its healthcare-driven innovation potential by committing to predictable, multi-year, investment-driven healthcare financing and pairing it with clear, innovation-friendly governance that accelerates the adoption of new solutions — because a healthier, longer-active population strengthens productivity, innovation and societal resilience, and because *The Future of European Competitiveness: Report by Mario Draghi (2024)* identifies advanced technologies, including biotech and life sciences, identified among the EU's most critical technologies for future competitiveness.

**Manufacturing** – Define the strategic target - for example export growth and then fully dedicate the actual work and support towards the goal. Resources will never be enough to do everything.

**Information and communication** – Focus resources where Latvia can dominate globally: Deeptech (AI, quantum-adjacent software); Bioeconomy / forestry innovation.

**Financial and insurance activities** – Focus on costs and efficiency.

**Information and communication** – Focus on automation in government services and cost efficiency, upskill employees of public sector in AI, remove bureaucracy.

**Administrative and support activities** – Latvia should develop more and quicker within the field of medicine and health care.

**Transportation and storage** – Feeling is that the current Latvian Economic Development Strategy is on paper, but real actions are missing.

**Real estate activities** – Stop producing meaningless 5-year plans full of compromises and slogans. Start thinking (much) longer term than the next election cycle. Listen more into what NGOs like FICIL and LaSER have to say, not as much to Twitter/X influencers. Create a working atmosphere in your team where mistakes are allowed, but double down on punishing negligence and indecisiveness. Stay strong and resilient; don't let emotions take over your judgement. Lead by example. Whenever in doubt, stick to common sense.

**Professional, scientific and technical activities** – Latvia should introduce a targeted R&D tax credit — it is one of only four OECD countries without one — to signal it competes for innovation, not just cost efficiency. The government should fund university technology transfer on commercialization metrics, not publication counts, to close the gap between world-class science and painfully slow market entry. And a SmartCap-style co-investment facility for Series A/B rounds in defence, photonics, and biomedicine would stop Latvia's best companies from exporting their growth stage to other jurisdictions.

**Manufacturing** – Ensure a stable, predictable business environment, reduce bureaucracy, and support innovation through tax incentives and preferential financing. Strengthen cooperation between industry and academia.

**Information and communication** – Healthcare, Education and Science. Digital sovereignty, digitalization grants.

**Information and communication** – Only high-risk can bring high-reward. We are playing too safe as a country and therefore we are not achieving high economic growth.

**Manufacturing** – Try to keep the salary inflation as low as possible.

**Education** – Innovation is everyone's issue, without innovation a country will stagnate. We need to be looking to encourage the population and investors to take risks and not always take the safe option. We should learn from our less successful decision such as how Latvia developed by comparison to Estonia. Latvia also needs a plan to address population reduction and immigration.

**Information and communication** – Stimulate innovation and entrepreneurship, promote defence opportunities, invest in education and create a smart migration strategy. Be serious about creating regional partnerships! Latvia alone will not be able to stand against Russia -

*focus on regional collaboration (Baltic/Nordic). Focus on economy! Allow the private sector to grow, instead of investing in state-owned companies.*

**Human health and social work activities** – *Human capital is Latvia's main asset and healthy people drive economy. Prioritise and ensure 6% of GDP funding allocation to Healthcare till 2028 and invest in innovations.*

**Transportation and storage** – *We need to be proud of Latvia, but we lack information on what we are good at. News are always about bad things and people become very negative. We need to build a united society, we cannot divide people, based on nationality, language, skin colour etc. We have very few people and we need smart migrants, otherwise, our country, our economy will not be sustainable.*

**Manufacturing** – *Targeted support for innovation and innovation collaboration is needed. Migration, demography and education have been missing from the government priorities! It is a must! Consider making English a second official language - it would make Latvia the most attractive country for smart migrants.*

**Information and communication** – *Focus on medicine, health technologies, bioeconomy. Use natural resources and turn them into competitive products. Help companies to innovate! The business environment is relatively good, but business lack support. Latvia has a huge potential, but we should not waste time.*

**Agriculture, forestry and fishing** – *Political stability is important, but it does not mean stagnation and inaction. Innovation, education and social cohesion should be key for country survival and development. We need an atmosphere of kindness and collaboration in the society, we need smart migrants, we need good governance and good quality of education.*

**Manufacturing** – *Upgrade the tax system.*

**Transportation and storage** – *Think 3 steps ahead, have a long term vision, stick to it!*

**Electricity, gas, steam and air conditioning** – *Don't surf on waves of pre-election time populism!*

**Human health and social work activities** – *Latvia can unlock its healthcare-driven innovation potential by committing to predictable, multi-year, investment-driven healthcare financing and pairing it with clear, innovation-friendly governance that accelerates the adoption of new solutions — because a healthier, longer-active population strengthens productivity, innovation and societal resilience, and because The Future of European Competitiveness: Report by Mario Draghi (2024) identifies advanced technologies, including biotech and life sciences, identified among the EU's most critical technologies for future competitiveness.*

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Below are the key messages from foreign investors in Latvia to the neighbouring Baltic States:

- **Cooperate as a Baltic region instead of competing:** The strongest message is that Estonia, Latvia and Lithuania should stop approaching one another primarily as competitors. Investors repeatedly stress that the Baltic States face similar challenges and would gain more from coordinated action than from fragmented national efforts. From the outside, excessive rivalry between the three countries weakens the region's attractiveness and looks unnecessary.
- **Position the Baltics as one larger investment market:** Investors see the Baltic States as small when acting separately, but more credible and attractive when presented as one region. A joint Baltic market of around six million people, with complementary strengths and a clearer common narrative, would be easier to promote internationally and more compelling for foreign investors.
- **Coordinate strategic sectors where scale and security matter:** Cooperation should be practical and focused on areas where joint action can create real value. Defence, energy, innovation, technology, infrastructure and transport are mentioned most often. Investors also point to opportunities in health innovation, digital systems and collaborative R&D&I. The message is that Baltic cooperation should move from general declarations to joint projects and aligned priorities.
- **Reduce cross-border friction through better policy alignment:** To function more like one market, the Baltic States need more complementary policies and fewer practical barriers between them. Investors point to policy harmonisation, smoother talent mobility, better alignment of tax and business legislation, common data-use standards and stronger digital interoperability. These steps would make it easier for companies, people and innovation projects to operate across the region.

#### **Quotes of respondents/interviewees from Latvia**

**Professional, scientific and technical activities** – More collaboration.

**Construction** – Cooperate, cooperate, cooperate especially in defence, technology priorities, energy.

**Financial and insurance activities** – Have complementary policies at a Baltic level, not competing.

**Manufacturing** – Stop competing, start cooperating.

**Electricity, gas, steam and air conditioning** – Energy sector de-coupling from Russia was good first step, but while the price of electricity is 2x lower than in the Baltics, there are next steps that are urgently necessary.

**Real estate activities** – Identify areas where Baltics can cooperate, so the market is perceived as more humogen, e.g. defence, infrastructure, tax, business legislation

**Information and communication** – Let's find ways how to collaborate and attract investment in the whole region by joining forces in defence, energy and innovation. Let's develop and build attractiveness of the whole region, instead of competing between our small markets.

**Transportation and storage** – Cooperate rather than compete.

**Electricity, gas, steam and air conditioning** – Combine forces to market Baltics as region of well balanced and sustainable growth.

**Human health and social work activities** – The Baltics can amplify their innovation capacity by aligning on data-use standards, early-diagnosis and screening pathways, and digital health interoperability, and by jointly supporting regional innovation hubs and collaborative R&D&I programmes, because a healthier, more resilient and longer-active Baltic workforce strengthens regional security, economic growth and competitiveness — especially in biotech and health innovation, which *The Future of European Competitiveness: Report by Mario Draghi (2024)* identifies as among the EU's most critical technologies for future competitiveness.

**Manufacturing** – Small economies should work together - energy wise, defence wise etc.

**Information and communication** – Act as one market of ~6 million people - Cross-border talent mobility without friction.

**Financial and insurance activities** – Invest in defence.

**Information and communication** – Collaborate cross Baltics and scale all essential competence to stand strong in all critical areas - defence, efficiency, citizens' upskilling.

**Real estate activities** – Put more resources into Nordic-Baltic Eight (NB8). Evidently, we are nearly perfectly aligned in terms of values and current priorities, and we have already demonstrated that we punch above our weight when we are together. Looks like it's our turn to bring back energy, courage, and ambition to the rest of the EU.

**Manufacturing** – Act as one region - strengthen cross-border cooperation, align policies, and develop joint innovation programs to increase global competitiveness.

**Information and communication** – More joint projects on energy, defence, transportation.

**Information and communication** – Collaboration is key.

**Manufacturing** – Try to keep the salary inflation as low as possible.

**Information and communication** – Please cooperate, you can compete, but don't be jealous of each other. The Baltic region, if it was collaborative, would have been super attractive for investors. You are doing great things and have many achievements, so please collaborate. It would be beneficial for everyone.

**Human health and social work activities** – Emphasize the need to further harmonize policies, strengthen collaboration, and systematically include societal value in decision-making.

**Transportation and storage** – Stop competing in a jealous way! It looks ridiculous from the outside. Everybody perceives Baltics as one region and this is your advantage. Use it!

**Manufacturing** – Use strengths of each other, position yourself as a joint attractive market for foreign investors.

**Information and communication** – *We want to see Baltics working together, it is an important message to the international/European community. It will benefit each country and show that you are civilised and can work together.*

**Agriculture, forestry and fishing** – *Baltics is a region, it is something you can sell together. Alone you are too small. Accept it and work together. It will also look good internationally.*

Below are the key messages from foreign investors in Latvia to the EU policymakers:

- **Reduce red tape and regulate with competitiveness in mind:** Investors see EU regulation as too complex, slow and detached from business reality. The concern is not regulation itself, but rules that slow down innovation before companies can develop, test and commercialise new technologies.
- **Make EU funding more practical and accessible:** EU support should focus less on complex procedures and more on implementation, commercialisation and scale-up. Smaller Member States need fairer access to funding, especially where they have strong niche capabilities in areas such as photonics, biomedicine and defence tech.
- **Back strategic technologies where Europe can compete:** Investors expect stronger EU focus on biotech, AI, defence technologies, digital sovereignty, circular economy and sustainability. The aim should be to help high-value technologies scale in Europe, not elsewhere.
- **Treat security as part of competitiveness:** For Baltic investors, defence, Ukraine, energy independence and resilience are economic issues as well as geopolitical ones. Europe's competitiveness agenda must also address the conditions that make investment and industrial development secure.

#### ***Quotes of respondents/interviewees from Latvia***

***Professional, scientific and technical activities*** – *Cut the red tape.*

***Construction*** – *provide long-term predictability of decision, targeted and fair funding, move from pure R&D funding to more project execution funding based on innovation.*

***Financial and insurance activities*** – *Sensibly reduce regulation to ensure that Europe can compete with other world powers.*

***Manufacturing*** – *More investments into people assets (grants to universities, institutes, innovating companies), less in bricks.*

***Electricity, gas, steam and air conditioning*** – *Renewable industries need more support, especially fighting the organized disinformation.*

***Real estate activities*** – *Set benchmark criteria that are most important to develop competitiveness and steer/ report these in a transparent manner.*

***Information and communication*** – *Please do not over-regulate innovation or new technologies use like AI, when it hasn't still gotten to the speed. It needs to be accelerated and supported for the commercial use, business effectiveness and not only Latvia, but EU competitiveness.*

**Transportation and storage** – Step into the 'client shoes' when developing/adapting new regulations/directives.

**Electricity, gas, steam and air conditioning** – More precise decisions to support Ukraine for win!  
(Not like is now - minimal support Ukraine will not loose).

**Human health and social work activities** – The Biotech Act can become a cornerstone of Europe's long-term competitiveness if it preserves a meaningful 12-month supplementary protection certificate extension, applies a consistent and future-proof definition of biotechnology, and fully protects ambitious clinical-trial reforms — ensuring that Europe can attract late-stage research, scale high-value biotechnologies and deliver faster access to innovative treatments for patients. This direction is fully aligned with *The Future of European Competitiveness: Report by Mario Draghi (2024)*, which identifies advanced technologies, including biotech, identified among the EU's most critical technologies for future competitiveness.

**Manufacturing** – Strengthen the defence industry.

**Information and communication** – Create a “Baltic Innovation Corridor”; Pilot simplified EU regulations here first.

**Financial and insurance activities** – Revisit ECB green watchdog policy in line with Omnibus initiatives.

**Information and communication** – Regulate AI in EU, technology evolves very rapidly, we are lacking proper regulations to avoid mass unemployment in next 5 years.

**Administrative and support activities** – Don't always let local authorities decide on fund distribution.

**Real estate activities** – Bring Hungary in line. That would send a strong message to Slovakia, too. That would be a good start. Move forward with the Industrial Accelerator Act (don't let it drag forever) and the Green Deal. And don't you ever give up on Ukraine after everything they've done for our security.

**Professional, scientific and technical activities** – EU framework programmes remain structurally biased toward large-economy consortia — small member states like Latvia contribute world-class niche capabilities in photonics, biomedicine, and defence tech but lack the administrative mass to lead proposals, so participation rates stay low despite scientific merit. The EU should create a dedicated scale-up instrument for high-potential deeptech companies in smaller member states.

**Manufacturing** – Simplify access to funding, reduce administrative burden, and focus support on practical, industry-driven innovation - especially in sustainability and circular economy.

**Information and communication** – Break all economic ties with Russia and Belarus. Let EU innovate on energy independence. Also Digital sovereignty.

**Information and communication** – Support for businesses who are ready to innovate needs to be made more accessible by reducing bureaucracy around it.

**Manufacturing** – Try to improve the infrastructure a bit more.

**Information and communication** – Baltics are critical for the EU, but they are under much greater threat than the rest of the EU. They do the best they can do and they should not carry the weight of protecting and investing in defence for the entire EU. This is not fair!

***Human health and social work activities*** – Ensure, that interests of patients and business across EU, especially in health care, support patients access to innovation and improve life expectancy and healthy life years.

### 3.2. Messages of the research community in the Baltic States

Below are the key messages from Estonian researchers to the Prime Minister of Estonia:

- **Invest in deeptech and science:** Expand support for fundamental research and deeptech sectors. Scientific excellence is the foundation on which all future technological advancement rests — without it, the pipeline runs dry.
- **Diversify beyond ICT:** Broaden innovation priorities into sustainable technologies, deeptech, food innovation, and advanced manufacturing. A narrowly concentrated innovation base is an economic vulnerability.
- **Strengthen academia–industry links:** Build deeper partnerships between universities and businesses. Better knowledge transfer and commercialisation outcomes require structural bridges, not occasional events.
- **Build talent for commercialisation:** Attract and retain people capable of turning research into internationally competitive products and services. Technical knowledge without commercialisation capacity stays in the laboratory.
- **Shift focus from start-ups to scale-ups:** Prioritise growth-stage companies through access to capital, export support, and anchor company development. Start-up creation is not an end in itself — scale is where competitive advantage is built.
- **Use public procurement to drive adoption:** Leverage pilot projects and public purchasing to accelerate the scaling of validated innovations. The public sector is an underused first customer for solutions that need market proof before going global.
- **Provide stable conditions, long-term funding, and a clear vision:** Maintain consistent tax and regulatory frameworks, commit to multi-year R&D funding, simplify administrative processes, and communicate a credible long-term innovation strategy. Investors and innovators make decisions on long time horizons — instability, complexity, and short-termism all impose a cost that deters the commitments that matter most.

#### ***Quotes of respondents/interviewees from Estonia***

*Support scale-ups, not just early-stage startups (growth capital, export support), encourage anchor companies.*

*The main strategic goal should be growing and attracting talent able to develop and commercialise products with higher added value for international markets. Also, keep business environment predictable, constant change with taxes is a no go.*

*Ensure stable, multi-year funding for METK and set clear performance targets to accelerate the transition of research from the laboratory and field trials to production. Implement public procurement and pilot projects to ensure that METK's validated solutions (analyses, methodologies, digital solutions, sustainable inputs) are widely adopted in Estonian food production.*

*The most steady and historically proven path towards prosperity is through the innovation. Tax measures and more collaboration programs can untap this potential. Give universities and firms stable long-term translational funding tied to collaboration and scale-up.*

*Do not hesitate to invest more into worldwide competitive blue-sky research.*

*Less is more - simple, easy and focused processes and value offer for people who do the heavy lifting (= innovation and application)*

*Strengthen long-term investment in R&D and innovation, with a clear focus on scaling high-impact solutions and increasing collaboration between academia and industry. Simplify funding and regulatory frameworks, while attracting international talent and capital to ensure Estonia remains competitive and capable of turning strong ideas into global successes.*

*More stable future-oriented messages.*

*Technological advancement comes from fundamental research. There has to be more support for that.*

*We need to focus on scale-ups, instead of start-ups. Our universities should be strengthened to become engines of economic transformation. We should invest in deeptech and diversity beyond ICT - it was a good achievement, but we should move forward.*

*Support innovation and science.*

Below are the key messages from Estonian researchers to the neighbouring Baltic States:

- **Create a unified Baltic innovation ecosystem:** Treat the Baltics as one integrated innovation region by aligning strategies, policies, and international positioning to strengthen global competitiveness.
- **Expand joint R&D programmes and funding instruments:** Develop shared research programmes, co-funded pilots, and cross-border innovation initiatives to accelerate regional technological development.
- **Build shared research and testing infrastructure:** Establish common laboratories, field trial networks, testing standards, and innovation platforms to reduce duplication and improve scalability across the region.
- **Strengthen cross-border collaboration mechanisms:** Increase opportunities for Baltic companies, RTOs, researchers, and innovators to cooperate through matchmaking events, mobility schemes, and joint development projects.
- **Coordinate strategic procurement and regulatory frameworks:** Harmonise regulatory sandboxes and align procurement in sectors such as defence and energy to create larger and more attractive regional markets.
- **Leverage regional scientific excellence:** Better utilise leading scientists and successful research areas to strengthen innovation capacity and international visibility.
- **Promote knowledge transfer and practical innovation adoption:** Ensure that feedback, implementation, and policy development are informed by practitioners and organisations directly involved in innovation activities.
- **Attract talent and investment through regional alignment:** Coordinate efforts to attract international talent, capital, and strategic partnerships by presenting the Baltics as a larger and more dynamic innovation market.

### *Quotes of respondents/interviewees from Estonia*

*Build joint R&D programmes and shared infrastructure within Baltics.*

*Provide more opportunities for Baltic RTOs and companies to interact and cooperate cross border, matchmaking events, joint development projects should be strongly supported.*

*We are establishing a joint Baltic network for field trials, reference laboratories, and uniform testing standards to accelerate the adoption of innovations and reduce duplication. We are co-funding joint R&D pilots and knowledge transfer through AKIS to ensure that solutions can be scaled across the entire region.*

*Treat the Baltics not as three small innovation markets, but as one credible innovation region. The practical next move is to harmonise regulatory sandboxes, coordinate defence and energy procurement, create joint researcher-founder mobility schemes, and promote the Baltics together.*

*Use more widely the potential of your top scientists and finance successful research areas.*

*Feedback needs to come for people who do the work, not who 'analyse and guess' what's being done.*

*Strengthen regional cooperation to create a unified Baltic innovation space, including joint funding instruments, shared research infrastructures, and coordinated policies that support cross-border R&D and scale-up opportunities. By aligning strengths and attracting international talent and investment together, the Baltic States can achieve greater global impact than individually.*

*Support cooperation with neighbours and not see each other as competitors.*

*Technological advancement comes from fundamental research. There has to be more support for that.*

*Let's collaborate more regionally and maybe even with the Nordics. Baltics have a good potential and together we can be stronger.*

*Let's collaborate more - alone we are small, together three times bigger :)*

Below are the key messages from Estonian researchers to the EU policymakers:

- **Scale deeptech and simplify support:** Shift focus from early-stage research to scaling high-impact innovations through faster, execution-oriented instruments that prioritise real-world outcomes over formal compliance.
- **Create a truly unified EU innovation market:** Establish EU-wide operating conditions for innovative firms — including harmonised regulation, innovation-friendly procurement, and blended finance — to remove the fragmentation that weakens European competitiveness.
- **Cut bureaucracy and adopt agile policy:** Reduce administrative complexity, streamline funding processes, and move away from excessive regulatory conservatism so Europe can compete effectively with faster-moving innovation ecosystems in the US and China.

- **Enable test–validate–deploy pathways:** Focus EU support on applied innovation cycles that connect research, validation, and market deployment, underpinned by harmonised standards and accessible funding instruments.
- **Ensure fair and inclusive access to funding:** Strengthen support for widening countries, bridge the gap between research and market adoption, and address unequal defence burden-sharing so that frontline and less-developed regions receive adequate, predictable backing.
- **Invest in fundamental research as a long-term foundation:** Reinforce sustained investment in basic science as the bedrock of future technological advancement, while ensuring that funding systems reward impact and capable implementers rather than box-ticking.

*Quotes of respondents/interviewees from Estonia*

*Increase support for deeptech scale-ups, not only early-stage research. Simplify and speed up funding instruments and regulatory processes.*

*Regulations in Europe should decrease barriers between EU member states, and not increase burden to companies in EU as we compete with strongly supported US and Chinese companies.*

*Direct more EU funding toward the “test–validate–deploy” cycle of applied research, where METK-type centres help translate research into actual food production. Harmonize data and sustainability requirements (including traceability/MRV) and support scaling through blended finance so that proven solutions can reach the market.*

*Create genuinely EU-wide operating conditions for innovative firms, make public procurement more innovation-friendly.*

*Remove two old regulations immediately every time when you think about a new one.*

*Figure out a way to go from 'ticking boxes to get the highest points for applications for funding' to 'understanding what really makes sense to do and who can actually deliver it.'*

*Increase support for widening countries by ensuring fair access to funding, reducing administrative complexity, and strengthening instruments that bridge the gap between research and market uptake. A more inclusive and impact-oriented innovation policy will help unlock the full potential of Europe’s diverse ecosystems and improve global competitiveness.*

*More flexible and clearer support measures and less bureaucracy.*

*Technological advancement comes from fundamental research. There has to be more support for that.*

*Baltics should not carry the financial burden for the entire EU in terms of defence spending. It is unfair and it is very short-sighted. The Baltics deserve more defence funding and real action. So far, there have been too many promises about defence initiative.*

*Less conservative approach, otherwise US makes all the innovation; more flexible legislation.*

Below are the key messages from Latvian researchers to the Prime Minister of Latvia:

- **Increase and stabilise R&D investment:** Raise predictable, long-term funding for research to EU-average levels to strengthen competitiveness, retain talent, and support high-value innovation in strategic areas such as bioeconomy, digitalisation, advanced materials, and e-health.
- **Reduce bureaucracy and enable faster innovation:** Simplify funding procedures, IP rules, and reporting requirements to allow researchers, companies, and institutions to focus on execution and impact rather than administrative compliance.
- **Strengthen academia–industry cooperation and commercialisation:** Improve knowledge transfer mechanisms, joint R&D, and IP flexibility so that research results translate into real economic value — including more industry-friendly licensing from public research institutions.
- **Stop brain drain and build research careers:** Retain and attract researchers by improving career stability, salaries, and infrastructure, with particular attention to PhD-level talent. Without competitive conditions, investment in research capacity will continue to leave with the people it trained.
- **Shift to strategic, risk-tolerant funding:** Move away from scattered, short-term initiatives and low-impact publication culture toward long-term strategic investment that rewards genuine innovation, encourages experimental thinking, and prioritises capable implementers over box-ticking.
- **Strengthen governance and empower private innovation:** Address systemic weaknesses in R&D institutions and higher education governance, improve public sector advisory capacity, and provide better support for SMEs, spin-offs, and private research institutions as key drivers of growth.

#### *Quotes of respondents/interviewees from Latvia*

*Latvia has many talented students with the potential to become influential researchers if offered the right opportunities and funding. However, we still lose much of this talent to emigration, and returning talent is not always easy to retain.*

*Strengthen long-term, predictable funding for research and innovation, with a clear focus on collaboration between research organisations and industry. Reducing administrative burden and ensuring stable policy support would significantly improve Latvia's innovation capacity and competitiveness.*

*More funding for universities, including private ones. More support for researchers and PhD students.*

*Continue supporting R&D at universities and research institutes.*

*We need to invest much more in competitive research funding to support the best teams.*

*A sufficient budget should be allocated to science.*

*To unlock Latvia's full innovation potential, we need decisive, long-term investment in research and human capital. This means increasing predictable R&D funding, strengthening support for researchers, and expanding funding opportunities across more scientific fields to ensure balanced growth. At the same time, Latvia must accelerate collaboration between universities, industry and the public sector—through innovation-friendly procurement, support for commercialisation, and*

*faster adoption of new technologies. Finally, deeper participation in European partnerships and sustained mobility of researchers are essential to raise competitiveness, attract talent and ensure that Latvia's ideas translate into high-impact solutions for society and the economy.*

*Latvia's innovation potential can be unlocked by committing to long-term, stable investment in research and technology development and by positioning the bioeconomy, advanced materials, and digitalisation as national strategic priorities. Strengthening collaboration between science and industry, reducing administrative burdens, and ensuring predictable funding cycles would accelerate the commercialisation of Latvian technologies and help build globally competitive, high-value sectors.*

*Less industrial policy trying to pick winners; improve the institutions - in particular the legislation; increase competence in the public sector; and less detailed regulation and reporting in higher education.*

*The Prime Minister must understand and support higher education and fundamental and applied research in Latvia, because only close cooperation between science and industry can create the conditions for Latvia's growth. Reducing bureaucratization, especially in European Union projects, must be real, not just on paper.*

*Dear Prime Minister, To transition Latvia from a labour-intensive economy to a high-value-added one, I urge you to prioritize increasing the Gross Domestic Expenditure on R&D (GERD). Current investment levels (~0.9% of GDP) lag significantly behind the EU average (~2.2%), limiting our ability to compete in high-tech and deeptech sectors. Increased R&D funding is key to unlock private sector co-investment, stop the 'brain drain' of our top scientists and developers, and ensure that breakthroughs stay and scale within Latvia. Also, funding alone is insufficient if the results remain locked in academic silos. We must regulate more flexible IP transfer mechanisms for research achieved through public funding. Current bureaucratic hurdles often make it difficult or financially unattractive for companies to license institute-born technologies.*

*Private research institutions are more flexible and innovative than public - but need for better support.*

*Latvia is in quite a unique position on multiple ends - let's exploit it.*

*Support small business and startups/spin offs.*

*Use more brains and hands from Latvia, avoid creating barriers (huge taxes, endless reporting), and instead support development, startups, and exports.*

*Please simplify the IP regulation and stop regulating every step. Innovation needs some freedom and experimentation. Latvians have low ambition, the mentality is focused on survival. Help large companies and start-ups to innovate.*

*Nobody can possibly know everything, it is understandable. Invest time in carefully choosing your advisors.*

*Not sure, she will take care, but OK: Latvian RTD system is in deep crisis very close to the 'point of no return'. The key indicator: number of PhD graduates annually for last 5 years is only slightly above 100 in comparison with 1600 annually in Finland or 300- per 1 million inhabitants!!! That means drastic decrease in the level of Professors in nearest years (low level competition for Rector positions), low qualification of graduates and signal to foreign investors to avoid Latvia. Hard years ahead for Latvian high-tech SMEs community. EU Commission recommendation: 25 % of EU Structural funds to allocate to ETD & Innovation (more than 1 billion for planning period! Latvian decision makers decided that it is too much for RTD & I and, instead of brains, decided*

*50% from mentioned funds to invest in bricks!!! There is very simple the first crisis management instrument: to finance all Latvian Research Council grants which received scoring in independent international evaluation more than 70 points out of 100. In real money very symbolic sum, but perfect message to society: 250 three years duration projects x 300 000 EUR = 75 MEUR or 25 MEUR annually!!!*

*Strategic topics short term and long term (3 years, 5 years, 10 years), e-health system as priority.*

*Tenure professors are needed with a good salary - currently, there is too much unpredictability for professors' salaries, therefore they cannot devote their attention to risk-taking activities, such as real R&D&I, which are not fake scientific publications. Please try to fix it! Public investments in R&D&I in Latvia are low. If we invest a little, we get little back in return.*

*Innovation is a key towards competitiveness, but until now the science system has been 'pretending' to do innovation. Only 3% of researchers are actually taking risk and doing something real with the industry. If the situation does not change, we will continue publishing empty papers with low value added to the economy.*

Below are the key messages from Latvian researchers to the neighbouring Baltic States:

- **Build a unified Baltic innovation region:** Treat the Baltics as a single collaborative research and innovation space — aligning strategies, pooling infrastructure, and harmonising policy frameworks to achieve the critical mass needed for global visibility and competitiveness.
- **Expand joint R&D, funding, and shared infrastructure:** Develop shared research programmes, co-funded projects, joint EU grant participation, and common research facilities and pilot-scale infrastructure to reduce duplication and support the scaling of new technologies.
- **Strengthen cross-border collaboration and mobility:** Increase researcher exchange, institutional cooperation, and talent mobility across the three countries, supported by recurring Baltic conferences, innovation forums, and structured collaboration platforms.
- **Coordinate policy, standards, and international positioning:** Harmonise funding mechanisms, regulatory frameworks, and procedures to reduce fragmentation — and present the Baltics jointly in Europe and globally to attract investment, talent, and strategic partnerships.
- **Deepen academia–industry integration and applied innovation:** Build stronger pipelines between science and business to improve technology transfer and commercialisation, shifting emphasis from fragmented academic output toward practical, economy-relevant research with real-world impact.
- **Move from competition to strategic cooperation:** Embrace a mindset of shared success — recognising that regional unity, not rivalry, is what increases the global competitiveness and long-term resilience of all three Baltic States.

#### *Quotes of respondents/interviewees from Latvia*

*The strength of the Baltics is not in numbers but in our determination to succeed; collaboration gives us a better chance globally. However, there are still relatively few research and innovation clusters across the three countries.*

*Enhance regional cooperation in research and innovation by developing joint programmes, shared infrastructure, and cross-border innovation ecosystems. Stronger Baltic collaboration can increase international visibility and attract investment.*

*Organising joint conferences in various scientific fields.*

*Collaborating and working together will increase our combined impact and visibility to reach critical mass.*

*We need to cooperate and know each other. Which means there should be annual Baltic joint research conferences and innovation events.*

*Close cooperation at all levels.*

*To strengthen the Baltic innovation ecosystem, we should deepen cross-border R&D collaboration, pool resources for large-scale research infrastructures, and jointly support emerging technologies with high regional relevance. By harmonising innovation policies, facilitating researcher mobility, and promoting shared commercialisation pathways, the Baltic States can build a stronger, more competitive knowledge economy that attracts talent, accelerates technology transfer, and delivers measurable benefits for our societies and industries.*

*The Baltic region has a unique opportunity to act as a unified innovation space, especially in bioeconomy, deep-tech, and digital manufacturing. Joint research programmes, shared pilot-scale infrastructure, coordinated talent policies, and cross-border innovation funding would significantly increase our collective competitiveness and visibility in Europe. A more integrated Baltic innovation ecosystem would attract larger investments and enable technologies to scale faster.*

*Cooperate across the borders and look at the Baltic countries as a region understanding it is not a zero-sum game.*

*Parliamentarians must understand and support higher education and fundamental and applied research in Latvia and other Baltic countries, because only close cooperation between science and industry can create the conditions for Latvia's growth. Reducing bureaucratization, especially in European Union projects, must be real, not just on paper.*

*Dear Policymakers, The Baltics must move from regional competition to collaboration. To compete globally, we must act as a single, unified innovation ecosystem. I urge you to focus on integrated academia-industry pipelines.*

*Let's cooperate and share the funds.*

*Honest competition is a great thing as long as it's honest and objective.*

*Joint programs for Baltic states.*

*We communicate, collaborate and build strong partnerships, because we are all working towards the same goal: strengthening defence against Russia by developing military technologies.*

*Innovation needs new ideas and collaboration. Create joint programmes for R&D&I.*

*Joint participation in European research grant calls.*

*Let's collaborate more together and build synergies. As a region, we would be stronger. It is time to realise that our strength could be in our unity. The Western Europe remains a closer club.*

*Baltic scientific community is relatively weak. Engineers and scientists have very low salaries and fight for project funding, especially if there is an EU project, where only one Baltic State can be represented. We need to focus on our joint projects and position ourselves to Europe and to the world as the most collaborative region with great synergies. For this purpose, we need to standardise processes, allocate funding for joint projects and encourage collaboration between industry and academia/research community. Most scientists in the Baltics are 'faking science' by simply publishing papers. This is what AI can do well. We need to focus on real value to the economy but help us do it.*

Below are the key messages from Latvian researchers to the EU policymakers:

- **Integrate the Baltics more deeply into the EU innovation system:** Recognise the Baltics as high-potential but under-supported regions and actively embed them into EU industrial value chains, missions, and collaborative programmes — closing the structural gap between established and emerging innovation ecosystems.
- **Expand widening support and close the innovation gap:** Maintain and enhance widening programmes with easier access, lower administrative burden, and more predictable long-term funding, ensuring fairer participation of smaller member states in EU research and innovation priorities.
- **Reduce bureaucracy and create faster innovation pathways:** Simplify application and reporting processes, introduce more agile funding mechanisms, and remove excessive administrative barriers that slow down innovation delivery and discourage participation from smaller institutions.
- **Invest in shared infrastructure and regional clusters:** Strengthen cross-border research facilities, collaborative programmes, and innovation clusters that connect academia and business — giving smaller member states better access to the infrastructure needed to scale new technologies and generate real economic impact.
- **Prioritise commercialisation, knowledge transfer, and human capital:** Focus more on turning research into market-ready solutions through pilot projects and scale-up instruments, while investing in talent development, researcher mobility, and retention — recognising people as the most critical driver of long-term innovation capacity.
- **Shift from fragmented competition to strategic, mission-driven integration:** Move away from competitive funding models that disadvantage smaller regions toward coordinated investment that deliberately integrates weaker ecosystems into EU priorities, reinforced by sustained support for fundamental research and higher education as the foundation of future competitiveness.

#### *Quotes of respondents/interviewees from Latvia*

*EU policymakers should recognise that the strength of the Baltic states lies not in numbers but in determination. Greater support for cross-border collaboration and research and innovation clusters would help unlock the region's potential and strengthen its global competitiveness.*

*Continue and expand support for widening countries through accessible funding instruments, while simplifying application and reporting procedures. Increased support for knowledge transfer, pilot testing, and scaling innovations would help translate research results into market impact.*

*Greater exchange of scientific findings. Much of it remains merely on paper.*

*Human resources are our main value and lack of them is an important risk.*

*We still need widening programme as culture change takes time and resources.*

*European Green Deal is an excellent ambition and must be continued.*

*To fully unlock Europe's innovation potential, the EU should continue strengthening widening measures, invest in cross-border research infrastructures, and ensure predictable long-term funding that supports excellence across all Member States. Deepening collaboration through programmes such as Horizon Europe, enabling more inclusive participation in EU infrastructures, and supporting health, digital and green transitions will significantly accelerate impact. A stronger focus on knowledge transfer, researcher mobility, and co-creation with industry will help ensure that scientific progress is rapidly translated into practical solutions for citizens across Europe.*

*To fully participate in Europe's innovation agenda, smaller member states like Latvia need stronger access to mission-driven funding, scale-up instruments, and shared research infrastructures. EU policies should continue supporting deep-tech, bio-based materials, and circular economy solutions while reducing administrative complexity for research organisations and SMEs. A more balanced distribution of innovation resources across regions would help unlock the full potential of Europe's scientific and industrial capabilities.*

*Less and smarter regulation; avoid industrial policy trying to pick winners, more of market economy.*

*Europe's growth is supported by higher education and fundamental and applied research. The cardinal reduction of bureaucracy in European Union projects is one of the most important factors in economic growth.*

*Dear EU Policymakers, Europe's global competitiveness depends on integrating the 'hidden treasures' of the North-Eastern frontier, our talent and agile research sectors, into the heart of EU industrial value chains. To achieve true strategic autonomy, we urge the Commission to move from 'Support' to 'Integration': shift focus from cohesion funding to actively embedding Latvian and Baltic academia and industry into major EU missions and ensure effective collaboration (Bridge the West-East Gap).*

*Closing the R&D funding gap between 'emerging' and 'leading' innovators is a prerequisite for EU competitiveness.*

*Baltic region has incredible potential - it just needs a little help.*

*More support for Baltic states.*

*Competition for EU funding is huge, and administration is too complex for start-ups and even for researchers. Please simplify!*

*Russia's invasion in Ukraine, Trump and China in general is good illustration of our weaknesses (TBH, also the strong points). It seems that we are slipping, slowly staying behind, not efficient enough. Unfortunately, I do not have a solution, but I believe it has to do something with the European culture. For European innovations, we need some fast-track mechanism to dodge our administrative burden (almost like 'forcing' people in a room for a few months).*

*Regional grants according to predefined priorities, rather than competition.*

*Help Baltics innovators with high market potential to develop ideas. Currently, we are competing with entire EU and, given a weaker science base in the Baltics, we cannot compete on a par and lose. Please stop encouraging such inequalities.*

*Allocate funding for collaborative industrial clusters, where researchers collaborate with industries to create real innovations. We need funding for institutions/centres, which could foster real innovation and collaboration. National funding is not sufficient, and a lot of money is going for defence purposes. Please help Baltics, as they pay a high price for protecting the EU.*

Below are the key messages from Lithuanian researchers to the Prime Minister of Lithuania:

- **Simplify funding and strengthen science–industry collaboration:** Reduce administrative complexity and ensure flexible, predictable access to R&D funding, while improving incentives and frameworks for cooperation between universities, research institutes, and businesses to accelerate commercialisation.
- **Scale high-impact and deeptech innovation:** Increase support for scale-ups, high-risk R&D, and strategic sectors such as biotech, digital technologies, and advanced manufacturing — prioritising mission-oriented investment with genuine global market potential over fragmented, low-impact initiatives.
- **Modernise regulatory and institutional frameworks:** Update evaluation criteria, reduce legal and bureaucratic barriers, and align policies with innovation, interdisciplinarity, and industry experience to create an environment where ambitious research and experimentation can thrive.
- **Strengthen commercialisation and demand-side policies:** Ensure clear, efficient routes from research to market through living labs, pilot projects, and technology transfer mechanisms — and use public procurement to create stronger domestic demand for innovative products and solutions.
- **Invest in talent, infrastructure, and global positioning:** Sustain long-term investment in scientific excellence, research infrastructure, and human capital, while attracting international researchers, venture capital, and strategic partnerships to strengthen Lithuania's profile as a serious innovation hub.
- **Build a culture of innovation and high ambition:** Encourage stronger links between businesses and scientists, promote experimentation, and foster the mindset needed to create globally competitive companies — recognising that structural reforms alone will not deliver results without a shift in how innovation is valued and pursued.

#### ***Quotes of respondents/interviewees from Lithuania***

*To unlock Lithuania's innovation potential, it is essential to ensure more flexible and accessible R&D&I funding, reduce administrative burden, and create stronger incentives for research-business collaboration. Lithuania should continue investing in applied research, talent development, and innovation-friendly regulation that helps ideas move faster from knowledge creation to practical solutions and international markets.*

*Message to the Prime Minister in Lithuania: "To fully unlock Lithuania's innovation potential, we must strengthen domestic demand for innovative products, provide targeted support for scaling high-tech startups, and increase investments in high-risk, high-reward R&D&I projects. Strategic collaboration between universities, research institutes, and the private sector will ensure that*

*scientific discoveries translate into market-ready solutions, boosting competitiveness and economic growth.”*

*To unlock Lithuania’s full innovation potential, it is essential to further reduce administrative complexity, especially in national funding schemes, and to modernise the criteria for top scientific positions to better reflect innovation, interdisciplinarity, and industry experience. Strengthening mission-oriented policies and expanding Living Lab approaches would help translate strong scientific capabilities into scalable economic impact.*

*Achievements reflect the dedication of Lithuanian researchers and the effectiveness of policies supporting science–industry collaboration, technology transfer, and innovation-driven entrepreneurship. Strengthening these frameworks, particularly in agriculture, biotechnology, and digital innovation, will further enhance Lithuania’s competitiveness, create high-value jobs, and contribute to EU-wide goals of sustainability, climate resilience, and circular economy development. Thus, I encourage continued investment in research infrastructure, capacity building, and public–private partnerships, which will ensure that Lithuania remains at the forefront of scientific and technological innovation.*

*Provide more targeted high value-added funding for product development.*

*Sustain long-term investment in research excellence and talent while simplifying science-business collaboration rules to ensure that Lithuania’s strong research base consistently translates into high-value economic growth.*

*The most effective way to untap the innovation potential of Lithuania would be to apply the innovations in the current market creating businesses that would develop into unicorns.*

*Focus on hard technologies with experience (even truncated by political process).*

*Enable investment in research and innovation.*

*Lithuania can unlock its innovation potential by expanding risk-tolerant funding for scaling technologies, strengthening research–industry collaboration frameworks, and ensuring predictable long-term investment in high-value scientific infrastructure.*

*Let’s encourage businesses to turn to scientists. The key is to foster a culture of innovation.*

*Major investments into the R&D&I ecosystem, more clear legal regulation, education of innovators.*

*Strengthen demand-side innovation policies by prioritising public procurement of local R&D&I outputs and improving support for scaling innovations from pilot to market.*

*Prioritise deeptech development by aligning funding, talent policies, and academic incentives with high-risk research, commercialization, and global scaling of science-based innovations.*

*To unlock Lithuania’s full innovation potential, the country must concentrate resources on a few globally competitive fields while strengthening science–industry collaboration, attracting top international talent, venture capital and ensuring a clear pathway from research to market.*

*Enable the financial support for collaboration programme between private sector and research institutions.*

*Increase support for scientific research and development of scientific infrastructure.*

Below are the key messages from Lithuanian researchers to the neighbouring Baltic States:

- **Build a unified Baltic innovation ecosystem:** Strengthen the Baltics as a single regional innovation space — aligning strategies, harmonising policies and regulatory frameworks, and coordinating funding instruments to enable smoother cross-border innovation and achieve the critical mass needed for global competitiveness.
- **Expand joint R&D programmes and shared infrastructure:** Develop shared funding schemes, cross-border projects, and common testbeds, Living Labs, and research facilities to reduce duplication, accelerate technology development, and support faster scaling of innovations across the region.
- **Strengthen cross-border collaboration and knowledge transfer:** Increase partnerships between research institutions, industry, and start-ups across the Baltic States, facilitate researcher and entrepreneur mobility, and build joint capacity to accelerate innovation diffusion and deepen regional expertise.
- **Focus on strategic deeptech and high-impact sectors:** Leverage regional strengths in biotech, digitalisation, agriculture, and advanced technologies — concentrating resources on areas with genuine global market potential rather than spreading effort across low-impact initiatives.
- **Develop joint innovation clusters and expand market access:** Create integrated Baltic innovation markets that support start-ups and scale-ups in reaching wider European and global audiences, combining regional capabilities to attract international investment and increase collective visibility.
- **Shift from competition to strategic cooperation:** Replace fragmented national approaches with coordinated regional decision-making — recognising that shared ambition and collective action will deliver far greater impact than any of the three Baltic States can achieve by acting alone.

#### *Quotes of respondents/interviewees from Lithuania*

*The Baltic States should strengthen joint R&D&I cooperation by building more cross-border partnerships, shared innovation platforms, and collaborative funding opportunities. A stronger regional approach would help our countries combine talent, research capacity, and market potential to develop more competitive and scalable innovations together.*

*Message to the policymakers in the neighbouring Baltic States: “Enhanced regional collaboration in R&D&I can create shared innovation hubs, joint funding projects, and cross-border knowledge transfer initiatives. By leveraging complementary strengths in technology, manufacturing, and biotech, the Baltic States can accelerate innovation, expand markets for startups, and create a stronger, integrated innovation ecosystem.”*

*The Baltic region has a unique opportunity to act as a unified innovation ecosystem. By aligning funding instruments, fostering cross-border Living Labs, and enabling talent mobility, the region can achieve greater critical mass and global competitiveness. Closer cooperation would amplify strengths in areas such as digitalization, life sciences, and deeptech.*

*We see tremendous opportunities for cross-border collaboration in R&D&I, particularly in agriculture, digital technologies, and life sciences. By sharing expertise, coordinating policies, and jointly investing in research infrastructures and innovation ecosystems, we can accelerate technology transfer, strengthen competitiveness, and address shared challenges such as climate change, food security, and bioeconomy development.*

*Develop a joined Baltic innovative cluster, focusing on high-risk innovations.*

*Deepen cross-Baltic coordination of research infrastructures, funding instruments, and innovation programs to achieve critical mass and compete globally rather than nationally.*

*The most effective way to untap the innovation potential of Baltic States would be to create more collaborative initiatives and events for international teams to develop.*

*Do something together (we lack common projects, where we can add, not compete for fund).*

*Enable regional collaboration in research and innovation.*

*Regional innovation capacity grows fastest through coordinated cross-border programmes, shared testbeds, and harmonised regulatory pathways that allow Baltic technologies to scale jointly rather than in isolation.*

*Joint efforts to improve innovation ecosystem, common innovation market and stronger advocacy in EU structures.*

*Deepen regional cooperation in R&D&I by creating a shared Baltic innovation market that enables faster cross-border scaling of new technologies.*

*Strengthen the Baltic region as a unified deeptech hub through joint funding schemes, shared infrastructure, and cross-border collaboration in strategic technologies.*

*To increase R&D&I impact to countries GDP, regional cooperation by aligning innovation priorities should be deepened, pooling research infrastructure, and jointly attracting talent and investment to compete more effectively at the European and global level.*

*Promote deeper synergy between Baltic States innovation actors.*

*To view the Baltic States as a common region and jointly implement strategic decisions, thereby strengthening the positions of not only the region, but also each country.*

Below are the key messages from Lithuania's researchers to the EU policymakers:

- **Strengthen support for emerging and widening ecosystems:** Provide simpler, more flexible, and inclusive EU instruments that give smaller and peripheral countries real opportunities to participate, lead, and integrate into EU value chains — addressing the structural inequalities that currently limit their contribution.
- **Reduce administrative burden and improve funding access:** Streamline EU funding schemes to make them genuinely accessible for applied research, SMEs, and research-intensive regions, and ensure equal access to leadership roles, large-scale test environments, and collaborative infrastructure.
- **Accelerate scaling and market adoption:** Shift EU support toward higher TRL levels, deployment, and commercialisation — reducing regulatory delays, improving public-private alignment, and ensuring that promising innovations reach real-world markets faster and more reliably.
- **Expand cross-border collaboration and shared infrastructure:** Strengthen technology transfer mechanisms, partnerships across member states, and shared research facilities including testbeds and Living Labs, enabling place-based innovation models that connect academia, industry, and the public sector.

- **Promote mission-oriented, high-risk, and deeptech innovation:** Expand predictable, flexible funding for strategic technologies and high-risk research, while helping smaller countries connect to European and global markets through targeted scaling support and investment attraction.
- **Broaden the scope of EU innovation policy:** Recognise cultural and creative sectors as genuine contributors to innovation and integrate them into EU strategies — reflecting a wider understanding of where value, ideas, and competitive advantage are actually generated.

### *Quotes of respondents/interviewees from Lithuania*

*EU policy should further support smaller and emerging innovation ecosystems by providing simpler, more flexible, and more inclusive instruments for applied research, knowledge transfer, and innovation scaling. Stronger support for regional collaboration, talent mobility, and science-business partnerships would help countries like Lithuania contribute even more effectively to Europe's competitiveness and resilience.*

*Message to the EU policymakers: "Continued and flexible EU support is crucial to strengthen Lithuania's and the Baltic region's innovation capacity. Funding programs should prioritize cross-border R&D&I collaboration, high-risk innovation financing, and scaling of market-ready solutions. This will ensure that regional innovations contribute to Europe's strategic technological autonomy and global competitiveness."*

*To fully leverage the innovation potential of countries like Lithuania, EU policies should continue to support widening participation while simplifying access to funding and reducing administrative burden. Encouraging place-based innovation ecosystems, including Living Labs and regional testbeds, would help bridge the gap between research excellence and market uptake across Europe.*

*To fully harness the potential of innovations, stronger EU-level support for cross-border collaboration, technology transfer, and applied R&D is essential. By fostering public-private partnerships, improving access to shared research infrastructures, and aligning funding schemes with climate-resilient and circular economy goals, we can accelerate the translation of scientific knowledge into market-ready solutions that benefit all EU citizens.*

*Develop more targeted funding for Baltic region.*

*Maintain predictable, mission-oriented EU R&I funding and reduce administrative complexity, while strengthening support for scaling deep-tech innovations from research organizations into global markets.*

*The most effective way to untap the innovation potential of the EU would be sharing the good practices and shared policy creation for supporting the R&D&I development.*

*Land your dreams - avoid overengineered solutions, localize software, engineering knows how for developing and governing scaling outside EU.*

*Ensure faster uptake of technologies (reduce regulation burden, e.g. new genomic technologies).*

*The EU can accelerate innovation by reducing administrative complexity, increasing support for TRL 6-9 deployment, and ensuring that smaller research-intensive countries can access large-scale European test environments and markets on equal terms.*

*Officially recognise art and culture as catalysts for innovation and integrate them into innovation strategies.*

*Even distribution and accessibility of resources/grants across the EU, with greater attention to small EU countries whose economic growth is especially dependent on innovations.*

*Focus EU innovation policy more on market uptake and scaling by aligning funding mechanisms with stronger incentives for commercialisation and public-sector adoption of research results.*

*Increasing flexible, high-risk funding and simplifying regulations to enable faster scaling.*

*Strengthen support for Widening countries by enabling greater access to leadership roles in Horizon Europe, increasing funding for capacity building, and fostering deeper integration of emerging innovation ecosystems into European value chains. Make all efforts to attract venture capital to EU.*

*Enable special calls for TTOs of the Baltic States to increase research valorisation.*

*Assess the geographical location of the Baltic States and increase funding for defence research, distinguishing this region from other EU countries.*

## Chapter 4: Concluding remarks

### ***Latvia's investment climate: cautious confidence, yet frustration with a lack of progress in critical areas***

The foreign investors describe Latvia's investment climate as resilient, while the innovation ecosystem as promising, but fragmented. Their assessment is one of conditional confidence. They recognise progress over the last 20 to 30 years and increasingly compare Latvia with its Baltic neighbours. The geopolitical concerns continue to negatively affect assessment of the investment climate, yet this is due to a lack of coordination at the national, regional, EU and NATO levels.

Besides geopolitics, the requests of the foreign investors remain the same for many years. Nevertheless, critical reforms, especially in the areas of human capital development and availability, continue to be missing. As a result, a growing frustration is visible, and it affects the long-term investment plans of the foreign investors.

### ***Good innovation ecosystem foundation in the Baltics, yet a lack of coordination and communication***

An analysis of the Baltic innovation story should not begin with limitations, but with proof that the region already knows how to create momentum. Estonia shows what happens when a start-up community develops cultural confidence and international visibility, with its innovation ecosystem still carrying the legacy of the “Skype generation”, supported by accelerators, angel investors and a strong digital-nation identity. Latvia already demonstrates promising signs through sandboxes, student pitch programmes, inter-university collaboration, many promising start-ups and strengths in sectors such as manufacturing, agriculture, health, and ICT. Lithuania adds another powerful signal, with interviewees pointing to visible progress in lasers, semiconductors, defence technologies and deeptech.

These examples do not suggest that the Baltic innovation ecosystem is complete; rather, they show that the foundation is real. Moreover, both foreign investors in Latvia and the Baltic research community representatives positively assess the availability of talent for R&D&I, the quality of infrastructure, and the quality of applied research in the Baltics. The challenge, however, is the absence of a sufficiently integrated system that can connect ideas to markets, researchers to companies, and national initiatives to Baltic scale to utilise opportunities through synergies and generate a meaningful impact.

The level of awareness about the key national research, scientific and technological achievements over the last 4-5 years is surprisingly low among both the foreign investors in Latvia and throughout the entire Baltic research community. This suggests not only a visibility gap, but also a strategic communication gap. Achievements exist, yet they are not sufficiently translated into opportunities that can be utilised. As a result, it is unimaginable how many opportunities that could have boosted innovation, growth and competitiveness, have been wasted and continue to be wasted. Moreover, given that public funding is a key financing source for research institutions, the question becomes even bigger – how much public money

has been wasted and continues to be wasted if academic outputs (e.g., publications) are considered the end rather than a means for practical application or commercial impact?

### ***Numerous non-financial barriers block development of the innovation ecosystem***

The two worlds – the world of researchers and the world of private sector actors/foreign investors – are largely living apart. Researchers tend to conduct R&D&I collaboration activities with researchers, while foreign investors with other private sector actors. The barriers are not only financial, as some might argue, although limited private and public funding does play an important role. Both foreign investors and researchers point to significant differences in terms of priorities, focus and collaboration approaches between the industry and research communities. The willingness to adjust to the industry needs is particularly problematic for researchers. The structural barriers, such as the evaluation systems of researchers, play a fundamental role in discouraging collaboration with industry.

Besides that, other non-financial barriers add complexity to the picture: a relatively risk-averse innovation culture, low local demand for innovative products and services, low attractiveness of STEM careers, ineffective innovation governance and regulation. If these are not addressed, even financial instruments will be ineffective.

### ***The current Baltic innovation ecosystems lack powerful drivers***

Across the three Baltic countries, R&D&I remains heavily dependent on public funding, public programmes and institutional cooperation. The findings also show that universities and research institutions largely cooperate with the stakeholders, such as SMEs and start-ups, that have limited financial resources, infrastructure for R&D&I, management and absorptive capacity, and a low global market access required to scale research-based innovation.

The large companies with operations in the Baltics, however, remain underrepresented in research and innovation agendas of the Baltic research organisations. This is a missed opportunity, as most interviewees from both communities indicated that large companies are best positioned to become drivers of innovation ecosystems. They can set a concrete industry and innovation mission, which they would strive to achieve with the support of other innovation ecosystem stakeholders (e.g., research organisations, SMEs, start-ups), thereby integrating them into the value chains, providing market channels, technology platforms and scaling opportunities. Such ecosystems would also boost regional economic development, as small companies/organisations would be connected to the strong industrial and research partners.

Many Western European countries have been fostering the development of innovation ecosystem through large companies, and such instruments proved to be highly effective. To illustrate, even during interviews some respondents referred to examples in Finland, Germany, the Netherlands, where the government is providing R&D funding for the so-called locomotive companies with the aim of fostering R&D&I investments and export competitiveness.<sup>3</sup> Some interviewees indicated that Estonia is considering launching a similar programme, which has

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<sup>3</sup> An example from Finland: Funding for leading companies and ecosystems: <https://www.businessfinland.fi/en/services/funding/funding-services/financing-of-leading-companies-and-ecosystems/>

been praised by interviewees. As indicated by responses of foreign investors in Latvia, 89% of them would increase their R&D&I investments as percentage of turnover during the next 5 years if the government would provide innovation-related policy instruments.

### ***High potential of multi-stakeholder collaboration***

Despite a lack of collaboration between researchers and foreign investors, it has a high potential. First, researchers point to applied research capacity in industries, where, according to the foreign investors in Latvia, the innovation-driven investment opportunities are highest, such as professional, scientific and technical activities, education, agriculture, manufacturing, health, ICT and environmental services.

Second, the views of the foreign investors and research community representatives are relatively aligned on multiple issues – key challenges and strengths of the Baltics, policy instruments that would help to unlock the innovation potential of their countries, industries with high innovation potential and those that would benefit from stronger R&D&I collaboration between the Baltic States.

Third, many interviewed researchers indicated that they dislike the current evaluation system, which fosters a publication-oriented career, and realise the importance of effective communication and coordination of R&D&I activities with industry, government and other stakeholders. Although some highlighted that the research community does not have a “strong voice” when appealing to the policymakers, they are willing to contribute to the discussion on the system change and engage more in commercialisation activities.

### ***Pan-Baltic collaboration: shared challenges, complementary capabilities, numerous benefits***

In view of respondents across the Baltic States, a stronger pan-Baltic collaboration is considered a smart strategy and a necessity, given common challenges, strategic interests, limited resources, similarities and complementarities. Estonia, Latvia and Lithuania each show sectoral specialisation, but the similarities are strong enough to justify Baltic-level vertical initiatives. Latvia shows concentration in manufacturing, agriculture, financial and insurance activities, health, transportation, ICT and professional services. Estonia shows a visible role for manufacturing, electricity and energy, construction and ICT. Lithuania highlights ICT, manufacturing, agriculture, energy, water and waste management, and professional services. The region therefore has both shared challenges and complementary capabilities.

A stronger regional collaboration matters, as national innovation systems in small economies often lack the domestic market size, private capital depth and specialised infrastructure needed to scale research-based innovation alone. A Baltic-level approach could help address these limitations collectively, share infrastructure costs, strengthen the region’s value proposition for global partners, and create enough critical mass to compete with larger European innovation ecosystems.

Among the apparent shared limitations across the Baltics, which could be addressed collectively, is an existing gap in supporting transition between TRL 3 and TRL 7. By pooling public funding, research infrastructure, industry networks, and venture capital resources, the

Baltic States could significantly improve the transition from academic research to market-ready solutions and create the basis for stronger innovation collaboration.

The key question is the political will of the Baltic policymakers – are they ready to make a long-term, strategic move that could help to build competitiveness and resilience of their country through regional collaboration?

### ***Limited geographic pattern of R&D&I collaboration***

The current geographic pattern of R&D&I collaboration suggests that cooperation remains strongly national, Baltic and European. This provides an important foundation, but it may not be enough for more ambitious innovation goals. Universities and research institutions appear to be missing opportunities offered by global corporate and scientific communities, particularly in the United States and Asia, where major technology companies, research-intensive corporations, advanced laboratories and venture ecosystems could become strategic partners.

The conclusion is that the Baltic region should not pursue cooperation for its own sake. The objective should be cooperation that improves the diffusion of innovation, strengthens ecosystem orchestration and helps innovators anchor their value proposition in sectors where adoption and scaling are possible.

### ***Final message on how to utilise Latvia's and Baltic investment and innovation potential***

Latvia, and Baltics generally, has demonstrated genuine resilience, maintaining institutional stability, investor confidence and infrastructure development despite external pressures. However, this resilience has not yet translated into EU-level productivity, innovation or long-term competitiveness. Foreign investors and the research community alike recognise Latvia's real assets: digital and physical infrastructure, talent, applied research capacity and sectoral know-how in areas such as defence, energy, AI and manufacturing, but both groups point to the same core problem: these ingredients are not yet connected into a coordinated, high-impact innovation system. The solution is not simply more funding, more cooperation or more general innovation promotion, but ecosystem orchestration - building focused sectoral verticals, where global demand, Latvian and Baltic economic strengths, and research capabilities align, so that defence becomes an innovation platform, energy independence generates exportable technologies, and digital infrastructure drives productivity across the whole economy.

At the Baltic level, Estonia, Latvia and Lithuania should move from parallel efforts toward joint action, using their shared scale, complementary strengths and regional connectivity to build value propositions that are visible and competitive on the global stage. This will require governments that set clear priorities and measure outcomes, universities that actively translate knowledge into solutions, companies that treat innovation as a route to competitiveness, and investors that bring strategic knowledge alongside capital. Each stakeholder has an important role to play in unlocking investment and innovation potential of the Baltics.

It is time to move beyond being resilient. The next stage is to become strategically ambitious — not by waiting for perfect conditions, but by identifying where shared will, existing capacity and real market opportunity already overlap, and building purposefully from there. The foreign investors in Latvia wish the Baltic policymakers the ambition and courage to go beyond

existing geographic borders, cultural, institutional, political and psychological limitations to create a good future for the Baltics!

**Table 12: SWOT analysis of the Baltic research and innovation capacity, summarising previously discussed findings**

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
Accumulated physical and digital infrastructure in universities and research institutions.	Strong dependence on public sector funding and public programmes.	Build Baltic-wide instruments that increase scale and reduce fragmentation.	Small national markets may continue to limit innovation absorption and commercial scaling.
Visible research cooperation in ICT, manufacturing, agriculture, health, professional services, energy and environmental sectors.	Private-sector participation in R&D&I collaboration remains low.	Reach global industry leaders and scientific communities, especially in the US and Asia.	Research agendas may remain too local or regional if internationalisation is not more ambitious.
Similar capabilities and challenges across Estonia, Latvia and Lithuania create the basis for coordinated action.	Large companies and R&D-intensive corporations are underrepresented as research and innovation partners.	Develop joint vertical initiatives in sectors where the Baltics have existing or emerging strengths.	Fragmented national initiatives may duplicate efforts and fail to create critical mass.
Strong role of universities and research institutions as knowledge producers and potential ecosystem orchestrators.	Limited support for scaling innovation and insufficient culture of risk tolerance.	Strengthen training for commercialisation, industry dialogue, entrepreneurship, IP management and ecosystem engagement.	Administrative burden and weak incentives may continue to discourage researchers from industry cooperation.
Existing cooperation with SMEs and public institutions provides a foundation for local innovation diffusion.	Cooperation is often concentrated among stakeholders with limited access to private funding and global markets.	Use large companies operating in the Baltics as anchors for market-relevant research agendas.	The gap between research output and market value may increase if cooperation does not become more strategic.

## Appendix 1. Quotes of the foreign investors from Latvia

How has your sentiment of Latvia's investment climate changed over the last year? Why?

### *Quotes of respondents/interviewees from Latvia*

**Transportation and storage** – *Nothing has changed in terms of the investment climate. There is a lack of collaboration between institutions, and some functions are being duplicated. There is a lack of a change. For example, where is the port reform? We have not seen it in practice.*

**Other service activities** – *Our sentiment has not changed over the last year. Geopolitics remains a key concern. I know the world has changed and it is hard to point to a totally safe region, but I care about what happens here and I understand that our neighbours remain our neighbours. We have to live with it.*

**Manufacturing** – *In terms of progress of development of Latvia - maybe we would like to be faster, but overall progress is great. I am very proud of Latvia, it has so many achievements over the last 30 years and let's be honest – the neighbours in the East are not a gift, the country does not have gold or oil or gas, therefore all its achievements have been the result of a hard work and dedication. So, I am proud of Latvia and of the Baltics generally.*

**Real estate activities:** *Given geopolitical climate, do we have the environment for investments to take place? This is not so much the problem of the Latvian policymakers. We have more optimism now in terms of economic growth, KPI in our industry and business. This is cautious optimism, but the international situation does not help to make investment decisions. The commercial real estate has experienced a challenging environment. I hope that some topics would be easier – like interest rates. Overall, not much change in terms of investment climate compared to last year.*

**Construction:** *There is a political will to improve things – this is appreciated. But the conflict within the coalition last year was concerning. I see that some reforms (e.g., laws on climate) are moving forward, the defence efforts, defence industry development - the drone coalition is moving forward. The Latvian government has made a lot of efforts to be heard at a regional and EU level and this improves security of the country.*

**Financial and insurance activities:** *Earlier I have been more positively thinking about the investment climate in Latvia. Everything has been going downwards during the last year, this was the worst government. The Progressives party has been keen on increasing control over entrepreneurship and private sector development, which is very damaging.*

**Financial and insurance activities:** *Geopolitics still is a big factor for business. Construction sector has a lot of challenges, they are not persuaded that it is a safe region and they need to make long-term investments. People get used to the situation with geopolitics – forever unknown, forever threat. There are some signs that Russia is weak, Ukraine managed to get some achievements. After 4 years the geopolitical uncertainty and a lack of safety have become a norm, therefore we feel relatively safe.*

**Information and communication:** *Latvia has a relatively good investment climate. There was great scepticism when we came to the Latvian market, but with years we see that the country provides many advantages – stable political and macroeconomic situation, stable policymaking, smart people, good infrastructure, good tax system, great place to live and work.*

**Information and communication:** *The geographic location is a big negative factor. Despite greater stability and predictability of the policymaking still at times there are government decisions, which revert investments. We have mobilised resources and then suddenly there is a*

change of decisions or a lack of implementation on the government side. Business needs to trust the government and believe in stability of their decisions, as it will affect medium to long-term plans.

**Financial and insurance activities:** I would say the investment climate has improved, actually. I think my personal perception is a lot of that is down to Siliņa, to the Prime Minister, and I think she's personally managing the coalition the best she can, which is likely very difficult circumstances. So, I would say she's having a good personal impact on the investment climate. I also saw some data from LIAA on investments. I think we're at record levels, which is clearly a good sign. I would say over the last year, 12 to 18 months, it improved my sentiment of the investment climate.

**Electricity, gas, steam and air conditioning supply:** The war in Ukraine has changed things considerably, and the energy crisis that came with it made the initial reaction quite negative, particularly in 2022. Sentiment improved in the years that followed, and what has been publicly communicated and done by the government since then provides some assurance on the security side. At the same time, within the energy and district heating sector specifically, we see a number of shortcomings in how our critical infrastructure is treated from a defence perspective. There is still significant work to be done to strengthen resilience. The district heating companies operating outside the capital at a regional or municipal level are not recognised as critical infrastructure by the Ministry of Defence or by the Climate Ministry, despite clearly qualifying as such. A few years ago, legislation was introduced requiring ministries to list all critical infrastructure within their fields of responsibility. That exercise was only partially completed, and regional district heating companies were left out entirely. The updated national security law now places the obligation on critical infrastructure holders to proactively engage the relevant ministry themselves, which is unreasonable. This is not in the interest of society, and in many cases not in the interest of businesses either, as it carries additional costs. There needs to be a clear and consistent approach, with a defined responsible authority.

**Electricity, gas, steam and air conditioning supply:** Our overall sentiment of the investment climate is quite high - there are many factors that provide a degree of security, good investment opportunities, and Latvia is in a meaningfully better position than it was a few years ago. That applies broadly across the Baltic states as well. On workforce availability, this is sector-specific. We work with engineers and plant operators, who are in high demand, and that situation has not improved. The company is actively exploring ways to bring back qualified engineers, who have moved abroad. Building new facilities under these conditions is difficult, and the practical response is to invest in automation as much as possible, even where that comes at a higher cost.

**Education:** I rely on quite affluent clients coming through our doors. When I struggle to hit my targets, I tend to assume the general economic environment is also less healthy. There is a knock-on effect in that respect. I rated the investment climate as moderate, because I sat on the fence, really. I have targets on how much revenue I need to generate, and at the moment, I am just slightly under where I should be. Overall, things are stable, which is not bad news.

**Other service activities:** Latvia's investment climate has changed over the past year primarily because of geopolitics and the war in Ukraine. Foreign investors have become much more cautious when selecting locations. Even if they do not always say it openly, security concerns are clearly part of their decision-making, especially because Latvia and the Baltic States are close to Russia. A lot still needs to be done to reassure investors that the region remains secure. Compared with four years ago, the situation is not better. Compared with two or three years ago, there is not a major difference either. Many investors remain in a waiting position, looking for signals that the situation could stabilise or improve before making decisions. News about possible security threats in the Baltics can strongly discourage investment decisions. The level of perceived political risk is not reflected in costs. Investors may be willing to accept higher political risk if there is a cost advantage, but in Latvia that trade-off is often unclear. Real estate and other costs have not fallen because of the war, and in some cases prices have increased. As a result, investors may compare

*Latvia with other markets where investment costs are similar, but perceived risk is lower, which makes Latvia less competitive.*

**Information and communication:** *Sentiment has worsened over the last year. At the moment, entrepreneurs are taking a more cautious approach to investments. There is a general expectation of a potential crisis, depending on the information sources, either an economic downturn or escalation of geopolitical tensions. This is not specific to Latvia, but is largely driven by broader geopolitical and regional developments.*

**Transportation and storage:** *The company's business is not significantly affected by the domestic political environment. The company is much more dependent on geopolitical developments. Overall, I would say – we are satisfied with how things are in Latvia.*

**Real estate activities:** *On the one hand, there have been some positive steps, mainly from the Ministry of Economics. In April 2024, an action plan was adopted to improve the investment climate, particularly in the real estate development and construction sector. It includes 62 measures, with a clear plan and responsible persons assigned. From that perspective, everything looks quite positive, and the Ministry itself is active in this area. On the other hand, the execution of these 62 measures is largely not happening. Only a few are moving forward, while most remain at a preparation stage. To implement these changes, involvement from other ministries is required, such as the Ministry of Finance and others, and this is only possible with real support from the Prime Minister. While publicly there appears to be support, in practice it is not there. This is the biggest disappointment. Across the economy, there are many plans and programmes, but in reality, nothing is happening.*

**Real estate activities:** *Overall, it feels like there is a lot of talking, but very little actual delivery. There is a strong focus on communication in media and social platforms, but not on real investment-related actions. The Ministry of Economics is the only institution that is more or less actively working on investment attraction, including changes in the state investment agency (LIAA) with more business-oriented leadership. From that organisation, there are visible efforts to attract investment, which is good news, of course.*

**Real estate activities:** *However, at the broader government level, and especially from the Prime Minister, there is no real support or interest in taking action. There are no tangible results, only statements. This pattern can be seen in multiple areas of the economy. Even in the construction and real estate sector, where there are some positive initiatives, the lack of coordination and support from other ministries limits real progress.*

**Real estate activities:** *In the defence sector, although funding is increasing, the system is highly opaque. Information about projects is not accessible, even for relatively simple construction projects. Access to tenders is restricted to a small group of pre-selected companies, and new entrants face a circular barrier, where participation requires prior involvement, but there is no way to enter the system initially. Compared to Estonia and Lithuania, where only specific elements are classified, Latvia applies a much broader level of secrecy, which limits participation and transparency.*

**Human health and social work activities:** *Latvia's investment attractiveness remains low from the perspective of our sector. We operate in a highly specialised field with high service delivery costs, and Latvia is a very small market. The limited population makes it difficult to build commercially viable high-cost services locally. At present, part of our operational model relies on using group-level infrastructure abroad. We would prefer to offer more services domestically, but the investment needed to establish the required infrastructure in Latvia would be very high and difficult to recover in a market of this size.*

**Human health and social work activities:** *There is also a broader concern about the gap between formal transparency and actual practice. From our perspective, neighbouring countries are moving faster and are more dynamic in turning potential into real progress. Latvia has the potential to become a regional hub, but the pace of development is too slow.*

**Human health and social work activities:** *At country level, the main issue is the regulatory framework, especially the reimbursement pathway. In Latvia, the time from approval to actual patient access is too long, and this is further limited by budget-related restrictions. That makes the market less attractive from an investment perspective. By contrast, another Baltic country is taking a more strategic approach to life sciences development, including better conditions for research, clearer policy direction, and more active engagement with companies. Latvia has not made comparable progress in improving its investment environment in this area.*

In view of the upcoming elections, what should be the key priorities for the new government to (further) improve the investment climate in Latvia?

#### ***Quotes of respondents/interviewees from Latvia***

**Transportation and storage :** *Human capital availability and development remain a key concern. At the moment, the education sector keeps producing humanitarian professionals - lawyers, marketing specialists, psychologists etc., while Latvia needs people with STEM knowledge and skills. Yet not many students are studying these subjects. As a result, there will be a labour market mismatch or a mismatch between what the Ministry of Economics writes in their strategic economic development papers with the reality. No people – no economy. This has been highlighted over and over, but does not seem to get through to the politicians. Building human capital is extremely investment-intense exercise. Companies should not bear all the costs and reskill people. Instead, the government, the education sector should realise that it is their key mission. People build the country, therefore human capital availability and development should be taken seriously!*

**Other service activities:** *Priorities for the next government – make Latvia’s economy more competitive, therefore invest in the development of the innovation ecosystem, invest in infrastructure, and ensure stability of the political environment. If we have such instability given the geopolitical situation then at least internally we should stay sober and smart.*

**Manufacturing:** *A key priority is a defence. I don’t understand the strategy of NATO and of the EU – do they work together? In case of an actual war in the Baltics, there should be a clear plan at the NATO, EU, Baltic level. This is where the Baltics, Finland and Poland should collaborate very closely – I believe more in the regional collaboration, as the EU institutional processes are extremely lengthy. The defence plan should not be just on paper, but in reality, and it should focus on prevention, not letting Russia in.*

**Real estate activities:** *The Baltic political direction has been stable, has been correct – pro-cooperation, rule of law, and this really helps business. The cooperation between the Baltic countries is also important, as large investors are interested in stability and prosperity of this region. Stability and predictability of the political situation could be a political advantage of the Baltics, given all changes in the world. Political stability is extremely important for business. The international political environment is becoming very challenging.*

**Real estate activities:** *Tax policies are very important. I see some risks in Latvia, compared to other Baltic States. The corporate income tax system is quite good at the moment and we hope it will stay in place. This is an important competitive tool. In addition, personal income tax – there were suggestions to increase a progressive tax. This might decrease attractiveness of Latvia. It*

certainly depends where to set a headquarter, where investments are made, where expats are attracted to. The government should understand that the current tax system is a competitive tool and any changes will have a long-term impact on the economy. No change something is the best decision.

**Real estate activities:** Defence and large infrastructure projects should remain priorities for Latvia. The timing of this is very important. There should be ways to implement the RailBaltic project. Latvia has not been able to find ways to develop such an important infrastructure project and I wonder why other countries do not share their experience to boost efficiency and effectiveness of project implementation? This should be encouraged.

**Real estate activities:** The question of productivity is becoming increasingly important. The costs of labour are increasing in Latvia, but not the productivity. This creates a question – does it make sense to relocate or to invest in Latvia now? What measures are needed to increase productivity? This comes to research, innovation, development, education. Latvia needs agility to be competitive and attractive. Latvia is too slow with activation of the capital markets. Capital markets are important in so many ways – capital is needed for the expansion of businesses, for long-term investments for the population. Financial literacy in Latvia is certainly lagging behind – this should be fixed and it is urgent. The speed of changes should be increased, otherwise, we are losing a lot of opportunities.

**Construction:** Energy independence and competitive energy prices should be the priority. This is linked to all large investments (any new industries, technologies, data centres etc.). Without energy accessibility and energy price competitiveness, no real manufacturing or large-scale production is possible.

**Construction:** Education should be more targeted towards needs of investors/business in Latvia. The labour market mismatch should decrease and education should become a priority. Smart people are useful for all economic sectors. Dual education, vocational schools should be supported. The Human Development Council should get more power – it seems that there is a political crisis, as the three ministries cannot agree on what should be done and how to manage activities. There should not be an internal conflict between the three ministries. Plus, funding is very limited for human development.

**Construction:** Defence is still a priority. We need to finalise a deal with Rheinmetall and cooperate more with the Baltic countries. We started last year with the FICIL initiative and the ministries of economy across the three Baltic States showed interest in collaboration, but as I understand real action is limited. The defence strategies of the three Baltic countries are very different, there should be more coordination and alignment with investors in that field. We all have a border with Russia and Belarus – it does not make sense to work in silos. If we or our neighbours do not consider something related to defence, it will become a problem for all of us, and for the entire Europe.

**Financial and insurance activities:** We cannot sustain a country without people. It is not sustainable for the public sector and for the private sector. Labour force availability is absolutely critical. Latvia needs smart migration. The government should define sectors, where we could or should attract skilled labour. Of course, companies that can offer high salaries can find a way to attract labour, but currently it is costly, and for small companies in Latvia labour availability is becoming an increasing struggle. I hope the government will be smart enough to support AirBaltic – it is one of our key advantages, it is important for the entire economy.

**Information and communication:** The government should not replace the private sector. Latvia's effectiveness is a joint effort of the public and private sector – why does the government try to reinvent the wheel, to replace the market? Companies could provide services, which the government currently tries to replace. The government is a very bad businessman, therefore please let businesspeople do business. It will do good for both sides. The government tries to control a lot

of e-service provision, but cannot manage them well. The government should do only that what they must do, where market cannot replace them. The government should say – let's create an open competition and then the government will free up resources for other critical priorities – defence, education, economic development incentives. We have to take painful decisions, otherwise, we will not move forward.

**Financial and insurance activities:** A clear alignment on priorities is needed. There should be greater consistency in political messaging and direction, as differing answers from politicians create uncertainty and weaken confidence in the overall investment environment.

**Electricity, gas, steam and air conditioning supply:** Speaking from the energy sector perspective, the clearest priority is energy independence. Latvia has been structurally reliant on gas for base capacity electricity production for many years, with very limited alternatives. This is both a national security question and a significant operational problem for district heating in Riga specifically. Whenever gas or oil prices spike, the effect is felt directly by the end users. In the regions, the transition away from gas towards biomass as the primary fuel source has largely been completed. In Riga, however, gas dependency in district heating remains a major and unresolved issue.

**Electricity, gas, steam and air conditioning supply:** From the energy sector's perspective, the priority is renewables. However, there appears to be no clear political consensus yet on how to approach the green transition. Latvia's energy strategy is explicit about the destination, but the path to get there remains contested. The market urgently needs a clear signal from policymakers about the direction of travel, so that investors can plan with confidence.

**Education:** Workforce is clearly important, and so is the cost of employment, because those are what make a location attractive in the first place. Whatever company you set up, you need your workforce, but you also need people who can afford what you sell. So, ultimately it comes down to showing foreign investors that Latvia is still a growing economy. And I think Latvia could still be marketed more effectively than it currently is. Latvia could market itself very strongly, particularly to families looking for safety, security, and a good quality of life, including those working in management and business roles. There are many people in that situation who could no longer afford a comparable lifestyle in their home country, but who could have very high quality of life in Latvia. The quality of life comes from the quality of the natural environment, the beauty, the low crime rates, rich culture, relatively good salaries for the management level employees - all of these are genuinely compelling. But this requires a government that is committed to an immigration policy that actively welcomes people, who are not Latvian.

**Education:** The focus should be on attracting people from countries, where immigration genuinely benefits the host country, rather than drawing in populations, where a significant share of income is sent back abroad. English-speaking countries are a natural target, partly because Latvians are so strong in English, which means having English speakers here would not create much concern or friction. From my own experience running a school, attracting teachers from the UK, the US, and other countries has become increasingly difficult and stressful. Every employee at our company earns at least €50,000 a year, and the tax contribution from that is significant. They are also unlikely to ever draw a Latvian pension. So, it is clearly a net benefit. Most people only come for a period of time, but they contribute to the social security system and probably never draw from it. The annual immigration renewal process for our employees is a real problem. It is a waste of money and time for both the country and the individuals going through it, and it makes Latvia look unnecessarily unwelcoming. I think this is an area, where Latvia could genuinely stand out from many other European countries. It is increasingly hard for non-EU nationals to live anywhere in Europe, yet every country needs them.

**Other service activities:** A key priority is demographics. Without a clear plan to address population decline, Latvia will struggle to develop. This requires a serious demographic programme that

*includes immigration. The issue is well known, and there are already examples from other EU countries showing both what works and what should be avoided. At present, however, there is no clear policy, only fragmented and politically driven decisions. This creates uncertainty for investors. There have already been cases where Latvia signalled openness to relocating specialists, but later reversed the course, because of domestic political pressure. That undermines trust and raises doubts about Latvia's reliability as a partner.*

**Other service activities:** *Latvia has a competitive offer in higher education, particularly for foreign students studying in English at a comparatively affordable cost. This creates an opportunity to attract and retain talent, but the country is not using this potential fully. Instead of a clear system for identifying which students could stay and contribute to the economy, there is no coherent policy, only reactive debates around politically visible issues. From an investor perspective, the problem is not only demographics itself, but the absence of a credible plan to address it.*

**Other service activities:** *Another priority is improving the effectiveness of investment promotion. Latvia is visible through exhibitions and general promotion, and that can work in some sectors, especially where existing investors already create recognition. But if the goal is to attract major international companies, a more targeted approach is needed. Large corporations are not usually reached through exhibitions alone. A more effective model would involve identifying specific target investors and approaching them directly with a clear value proposition, including tax conditions, real estate options, and other practical advantages.*

**Other service activities:** *Reputation also matters. Large public failures such as Rail Baltica damage confidence, because they reinforce concerns about poor planning and possible corruption, even if this is not always said openly. There also needs to be much greater clarity on what Latvia can concretely offer investors in each sector. In some industries, the offer is relatively clear, such as location, office availability, skilled people, and infrastructure. But even where the fundamentals are there, the question remains how to reach the right investors in a more focused and convincing way.*

**Information and communication:** *There should be a greater engagement with the business sector, with more support for business development and less focus on political manoeuvring. Currently, there is a strong emphasis on defence and cybersecurity, but expectations are that the focus should be broadened beyond these areas. A key priority should be human capital. At present, the responsibility for talent development and skills largely falls on companies themselves. There is a need for more active involvement from the state in this area. In practice, the organisation's activities in the local market have been limited in recent years, apart from workforce-related aspects.*

**Transportation and storage:** *The expectations for a new parliament and government would centre on having a clear plan and long-term strategy, and, more importantly, actually following through on it. Some degree of predictability and continuity of direction is what matters most. The situation is not entirely negative, but there is clearly room for more consistent follow-through on the strategic course that has been set.*

**Transportation and storage:** *The key priorities are largely the same as last year: demographics and defence. These do not change much in essence. What is also important is the willingness to take decisions that may be unpopular or difficult, though that is harder to achieve during an election period. Above all, the country needs a long-term vision that persists across changes in government.*

**Transportation and storage:** *A related concern is over-regulation and the slow pace at which legitimate business initiatives move through the system. A straightforward legislative change related to ship operations, one that would have significantly reduced port turnaround times and made Latvia more competitive as a location for shipping, took several years to push through,*

*because every ministry needed to be consulted and reassured. Latvia needs to keep the businesses that are still choosing to operate here. Not every proposal from the private sector needs to be approved, but ideas should not be left unresolved for years. A more competitive and less suspicious approach to entrepreneurial initiatives is needed.*

***Real estate activities:*** *The main priority should be attracting the foreign investment. The current geopolitical situation is challenging, but all Baltic countries are in the same position. Relying on internal funding alone will not lead to meaningful economic development. Without foreign investment, it becomes increasingly difficult to finance healthcare, defence, and other public needs. At present, Latvia relies heavily on international funding, around €2 billion per year, which is not a sustainable long-term strategy. Public debt is approaching 50% of GDP, and borrowing costs will increase.*

***Real estate activities:*** *Tax policy is a key element. In many cases, reducing tax rates can result in higher overall tax revenues, as higher taxes push part of the economy into the grey zone or reduce activity. There are examples where lowering tax rates increased total tax collection.*

***Real estate activities:*** *Currently, Latvia has some of the highest tax rates in the Baltic region. Real estate tax is significantly higher than in the neighbouring countries, despite Latvia being smaller than Lithuania. Estonia collects even less tax, partly due to long-term stability in cadastral values and a clear policy objective to support residents.*

***Real estate activities:*** *Personal income tax is also relatively high, especially for higher value sectors, such as IT, making Latvia less competitive for attracting such businesses. As a result, companies often choose Estonia or Lithuania for higher value activities. Overall, the tax policy should be designed to encourage business activity and investment, rather than focusing on short-term revenue increases.*

***Human health and social work activities:*** *The main issue is accountability. Too often, there is a cycle of promises before elections and very little delivery afterwards. There should be stronger mechanisms to hold elected officials responsible for inaction during their term, rather than allowing a long period without meaningful consequences.*

***Human health and social work activities:*** *Another major priority is reducing the disproportionate burden on small businesses. A very small company should not be expected to meet the same administrative requirements as a much larger enterprise. That creates unnecessary pressure and discourages initiative.*

***Human health and social work activities:*** *There is also a broader problem in how the state treats businesses. Too often, companies are approached with suspicion, as if they must constantly prove they have done nothing wrong. That mindset is deeply demotivating and does not create a supportive environment for entrepreneurship or investment.*

***Human health and social work activities:*** *Healthcare has to be a top priority. Population health outcomes are significantly weaker than in much of the EU, and that has long-term consequences not only for individuals, but also for the economy. When people become chronically ill earlier and spend fewer years in good health, it reduces their ability to remain active in the labour market and adds to the broader fiscal burden. The second priority is the investment climate, which is closely linked to the first. If Latvia does not take a more proactive approach to attracting investors and reducing regulatory friction, it will continue to miss opportunities in health innovation and the wider economic activity that comes with it. The third priority is education, particularly the development of skilled human capital. The issue is not the number of structures or initiatives on paper, but whether they actually lead to meaningful capability-building. These three areas, healthcare, the investment climate, and education, are closely interconnected.*

What are the key R&D&I activities that your company has implemented during the last 3-5 years (product, process, service, other)? Please share some examples, good practices.

### *Quotes of respondents/interviewees from Latvia*

**Transportation and storage:** *We have integrated a 5G network, many companies come to us to check how we operate and how this network works, what is the impact on our activities. We have introduced some green innovations in our company as well. It is a step-by-step process. We test one thing, then introduce another. It takes years to decide what and how to integrate, how to innovate.*

**Other service activities:** *We help other companies, develop modern solutions, therefore innovation is part of what we do and part of how we live. We innovate each year, and it is a norm. I do not even think about it. AI technologies are replacing young labour force. We've hired significantly less employees last year, especially of those who have limited knowledge and work experience. We have no need for small tasks, which now can be done by AI. AI training is a must at our company. You cannot work unless employees have completed the trainings.*

**Manufacturing:** *Currently, we are working with the automation of processes. We have robots and automatic conveyors. We use the EU funding for the last couple of years. In addition, we are creating novel products for the local market. For decades, we have been growing R&D&I competences internally and now we have an in-house R&D&I department. In addition, we have some patent innovation that we do on the group level. For some of our projects, we have been collaborating with the RTU. It was a good experience.*

**Real estate activities:** *Not to have innovation is not an option for business. We are integrating AI and many other technologies. This affects user convenience, improves business processes and efficiency, increases sustainability and helps to meet several targets at the same time.*

**Construction:** *We have developed more sustainable resource hubs, invested in new labs structure with new testing facilities. We have a technology test centre to improve our production processes. Innovation is part of a normal business development.*

**Financial and insurance activities:** *We have integrated AI in our company. It is part of processes and part of products. We are learning and playing with the AI technologies. I believe in the future there will be a bigger AI breakthrough.*

**Financial and insurance activities:** *Our company collaborates with universities on R&D&I, but it depends on concrete opportunities, which should be mutually beneficial. It is not so easy to find them, as the academic world does not see their mission as to be useful to the private sector. I don't expect researchers to abandon the academic/research world and shift completely to serve the market, but there should be some balance. If research institutions are funded by the taxpayer's money, then sorry, they have to be useful. We pay a lot of taxes, we want to develop new, competitive products and services, and our research institutions have a lot of technologies, facilities, smart people. Why don't they want to collaborate? I don't understand. Perhaps, a different culture needs to be developed – useful for society and business, focused on collaboration.*

**Information and communication:** *We have participated in the cluster projects – they have been very complex. The normative context is very limiting. For companies to research something what cannot be commercialised does not make sense. We have been working with several research institutes. We invested our resources – human, time, infrastructure etc. It took half a year to align interests and, in the end, it did not make any sense for us. Researchers simply want to*

produce research publication, they want to test theories. Tilde managed to find a good match between research and business – this is a good practice. But it takes time to find something what is most useful.

**Financial and insurance activities:** I think there's probably two key areas that we've focused on and invested in quite heavily. One is data analytics and the other is artificial intelligence, and both are clearly quite well-connected. In terms of data analytics, for example, we're implementing a new data warehouse, which is a fairly significant resource investment. In terms of data handling, we're really trying to automate as much as we can. So that's a combination of both data analytics and artificial intelligence. When customers submit applications, they submit them through an app and we put money into the customer's bank account within 11 seconds. So, from the customer perspective, this is very useful and easy. We've been using AI in one form or another for probably five or six years now and we're constantly building on that.

**Financial and insurance activities:** We've also strengthened our data analytics team and expanded their area of responsibility. So, they've gone from quite hardcore data guys to really developing their AI capability. That team itself is expanding in number, but also in capability. It's really quite a growth area for us and something we're embracing quite heavily. We also use artificial intelligence in our pricing sophistication now. The two big areas for us are application automation and pricing sophistication.

**Electricity, gas, steam and air conditioning supply:** R&D&I for our industry is highly complex. The innovation focus has primarily been on digitalisation. A key example is the implementation of a digital twin technology in the company's plants in Lithuania, and in the facility currently under construction in Latvia, where approximately 6,000 operational signals are generated from across the facility at any given time. A single operator can realistically monitor around ten key signals. A digital twin system processes all signals simultaneously and makes real-time, informed adjustments to plant operations, resulting in substantial efficiency gains. In addition, we have introduced digital systems that produce a rapid response to prevent operational failures. Working at this level of operational detail with plant staff has made it possible to identify and act on inefficiencies that were previously inaccessible.

**Electricity, gas, steam and air conditioning supply:** Most of our R&D&I activities are conducted through external partnerships rather than purely in-house. But the broader digitalisation work requires data science expertise that is not typically available within the company, which makes collaboration with external specialists essential.

**Electricity, gas, steam and air conditioning supply:** The second area of innovation in Latvia specifically involves the use of residual material from specific production processes. These are being tested for application in forest fertilisation, a practice already established in Finland. This required regulatory changes at the national level, and the company worked alongside the national forestry authority and other market participants to lobby successfully for amendments to the relevant legislation. The process is now at the implementation and fine-tuning stage. In terms of technological processes, the primary technical challenge involves heavy metal content, particularly cadmium, which occurs naturally in biomass and is more concentrated in younger trees. Determining safe application frequencies and quantities to avoid harm to the forest ecosystem requires extensive assessment. This practice is not yet used anywhere in the Baltics, but it is expected to be adopted in time.

**Education:** The motivation for innovation activities is ultimately financial. We offer around 50 additional activities/services, with a specific skilled local supplier. These include things like scuba diving in our swimming pool, where students can earn their PADI certificate, as well as roller skating, biking, and driving theory preparation. We have also worked with language schools

*and local universities, including paying to use university facilities so that students can access facilities that are not available at the school itself.*

**Education:** *We are currently developing a partnership with a local tennis academy that is due to be built nearby, with the aim of creating an elite sports performance programme. Student athletes would train at the academy for the first two hours of the day, then attend a school later with a coordinator, who plans their lessons around their training schedule. It is about adding real value to students' lives beyond the classroom, while also increasing the attractiveness of what the school offers.*

**Other service activities:** *Over the past 3 to 5 years, the main focus has been on a process innovation, automation, and the use of AI and machine learning to improve the back-office operations, including IT, finance, logistics, documentation, and legal functions. In a large corporation, innovation can be more difficult, because many rules and procedures are already in place, and these do not always support experimentation. Unless there is a clear corporate objective for R&D or innovation, local branches may have limited room to develop it further. In this case, however, there has been enough flexibility to test and implement improvements.*

**Other service activities:** *A key area has been making daily work more efficient. The pressure is to process more volume with the same number of people, so the main solutions have been automation, process improvement, and review of workflows to remove unnecessary steps and bottlenecks.*

**Other service activities:** *We have had several collaborations with the universities in Latvia. One example was a pilot project several years ago, before tools like ChatGPT became widely used, when the potential of AI was already visible, but internal expertise was limited. A local university contributed data science capacity, and together a machine learning-based solution was developed around potential business use cases. That solution was then proposed more broadly within the company group. Collaboration with universities has generally been useful, especially where they actively approach companies with practical offers, such as pilot tasks or hackathon participation. The most active cooperation has been with Riga Technical University and TSI, while larger universities have seemed less open to this kind of practical collaboration.*

**Information and communication:** *The main focus has been on process automation and the use of artificial intelligence. Several internal teams have been tasked with automating at least two processes each. The organisation has developed an AI selection tool, specifically for the Latvian market, which has also been publicly presented. In addition, the organisation provides a wide range of IT services, including customised AI solutions tailored to client needs, as well as isolated AI environments to ensure secure and controlled use.*

**Transportation and storage:** *Despite operating in the oil sector, there is active thinking about how to green operations and improve efficiency. We have engaged in a collaboration with a company, where meaningful innovation work has been done around fuel efficiency, operational optimisation, and the exploration of alternative energy sources.*

**Transportation and storage:** *The company is also currently constructing a biogas facility that will use the latest available technology and will be the most innovative solution of its kind in Latvia at the time of completion. Innovation in the sector does not happen through independent collaboration with local Latvian scientists, but largely follows international technological developments. One specific project, however, did involve some local collaboration: research into anti-fouling hull coatings for ships. Slowing the rate at which algae and mussels accumulate on a ship's hull directly reduces fuel consumption, and this was one area, where cooperation with local expertise took place.*

**Real estate activities:** *Our company has implemented several process and operational innovations, particularly in the digitalisation of construction processes. This includes the use of BIM and other planning tools to improve construction efficiency and coordination. However, the broader innovation environment is not supportive. Public funding for research and innovation in Latvia is significantly lower than in the neighbouring countries, and the private sector investment is also limited.*

**Real estate activities:** *Construction companies must pay an annual fee to remain in the construction register. This fee is significantly higher than in Estonia and Lithuania, where such costs are minimal or non-existent. These funds could otherwise be invested in employee training, digital tools, or innovation. Instead, companies are required to allocate resources to administrative costs without receiving corresponding value. This reduces the ability and willingness of businesses to invest in innovation.*

**Human health and social work activities:** *Our main innovation in recent years has been the introduction of a digital registration and ordering platform for clients. Previously, services could only be arranged through direct contact. Now clients can review options, build a personalised service package, and assess suitability remotely and at any time. This significantly improved accessibility and simplified the customer journey. This development was based on a clear understanding of our target audience. Our clients are highly digital-oriented, use mobile devices extensively, and expect a simple and efficient decision-making process. The platform helped reduce the number of steps between initial interest and engagement.*

**Human health and social work activities:** *We have changed our approach to communication. This includes a more structured use of social media, the introduction of educational video content, and the adoption of AI tools to support content preparation and meeting planning. For a small team, these tools have improved efficiency and reduced preparation time.*

**Human health and social work activities:** *Virtually every core internal business process has been upgraded in recent years, including digital tools used for operations, internal knowledge and content management, and AI-supported internal workflows. On the external side, several examples stand out. One solution supports primary care practices in managing preventive screening more effectively. Another uses combined data from different parts of the healthcare system to help identify patients who may not be meeting treatment targets, allowing earlier intervention. A further tool supports patients with serious long-term conditions by helping track symptoms and outcomes between consultations, making clinical follow-up more efficient.*

How would you describe Latvia's innovation ecosystem – extent of collaboration, its current status, development potential? What are the key scientific/technological achievements during the last 4 years, innovation-related success cases and their enabling factors? What would increase awareness about the innovation ecosystem development?

#### **Quotes of respondents/interviewees from Latvia**

**Transportation and storage:** *Latvia has many scientific and technological achievements, especially in the areas of IT, pharmaceutical, medical. But there is not enough communication about them. Perhaps if we/business knew more about them, it would stimulate more R&D&I activities on our side. I know Latvia has many smart people, therefore we definitely have a lot of great, innovative ideas, but it takes resources to implement them. Businesses need incentives to take risk and to do innovation. Collaborative innovation with the academic/research sector is not so frequent.*

*Innovation ecosystem as such is not really a term of how we think about innovation. We think about innovation in terms of what our company does.*

**Other service activities:** *Latvia has many promising industries, many promising start-ups. But the number of unicorns in Estonia and Lithuania is higher. This depends on how the government, and all stakeholders are stimulating innovation. This is a question of innovation strategy. The Latvian government is not paying sufficient attention to stimulating innovation, innovation ecosystem development, and is afraid to support a specific industry to boost its innovation potential. But without prioritising one, two or three industries, investors see no clear opportunities in the country.*

*It is a too blurred picture currently – invest in everything, means invest in nothing. Markets, investors need a clear sign – here is an opportunity, come and take it. Once one industry develops, it will boost other connected industries. Not supporting any industry is worse than selecting even the wrong one. I understand it is a difficult political decision, but politicians are paid for making decisions and solving problems, instead of avoiding them.*

**Other service activities:** *There is limited information on key scientific/technological achievements during the last 4 years. The average person, who is not part of the science bubble is not well-informed. I think it is a problem. Perhaps companies would innovate more if they knew what is happening in the science world.*

**Manufacturing:** *At first glance, the innovation ecosystem is difficult to fully assess—we only scratched the surface. Still, certain patterns are already visible. There is a foundation in place. Startups can access support, guidance, and even funding if they are capable and well-connected. Universities are playing an active role: they are testing technologies, building prototypes, and providing access to design and testing labs. RTU is doing incredible job by the way in helping start-ups. Overall, for those who know how to navigate the system, opportunities exist. At the same time, there is clear untapped innovation and investment potential in Latvia. Many production facilities could significantly improve efficiency through automation and streamlined processes. In some sectors, valuable materials are simply discarded, even though they could be reused in other industrial processes. These missed opportunities highlight a gap between what exists and what could be achieved.*

**Manufacturing:** *Innovation depends on people—their experience, their competence, and their ability to learn from one another. The knowledge is there, but it must be actively sought out and shared.*

**Real estate activities:** *The ability to change is critical for innovation. Latvia struggles to take risks, to go forward, despite history, not be struck in the past. People in Latvia focus on stability – it has its advantages, but also disadvantages. Capital will go there where there is readiness for innovation, for risk. Latvians are very creative, have ideas, but they don't have boldness and tools to realise their ideas.*

**Real estate activities:** *There is a need for a framework on how to develop creative ideas and it is sad that people don't have an opportunity to develop their ideas, don't know where to find tools. A lot goes back to seed fund instruments, to capital markets, to mindset of boldness.*

**Construction:** *The universities are doing a lot of things for themselves, but there is little cooperation with the companies. There is a will, but execution is lagging behind. There should be targeted centres of excellence and professors for certain technologies. These should definitely be more proactive actions at universities. We have been invited to the University of Latvia to meet different faculties, and we were asked to contribute to technology centres. This is a good initiative, it should move forward.*

**Construction:** *There is no clear innovation strategy in the government. There is a draft strategy of Latvia's development for 2050, let's see if this is the right instrument and if it will give the right results. But the overall plan on boosting innovation is missing. There should be joint/coordinated initiatives across the universities, in collaboration with companies, start-ups and other stakeholders.*

**Construction:** *LIAA has improved its work in recent years, we see a lot of good initiatives and good communication. Perhaps LIAA should be more active in promoting success stories of Latvia and establish innovation clusters, innovation valleys – ecosystems, where there are multiple actors working in the same field and building synergies. We need such systems, innovation needs an exchange of ideas, alignment, resources, joint infrastructure.*

**Financial and insurance activities:** *I think we have many smart people and we could do so much more. Progress of Latvia in the last 20-30 years has been incredible. We complain a lot, but it means we are free to complain, although let's admit – it can be damaging.*

**Financial and insurance activities:** *We have many companies, organisations and people that innovate, but I would not say that they work in an integrated system, which could be called a functioning ecosystem. Information on who does what is very limited and sometimes it seems that nothing is happening, while then suddenly you go to a conference and find out that Latvia has so many great achievements. It is surprising sometimes, but I wish to be more pleasantly surprised, so it would be perceived as a norm. The Latvian "everything bad.lv" (visslikti.lv) is a bad joke, but very telling about the local mentality.*

**Financial and insurance activities:** *Collaboration between universities and companies in Latvia is happening, but not in the most optimal way. Universities expect that we will come to them, but it should work the other way around. We must think how to be useful for each other and more so for the academic/research sector.*

**Information and communication:** *Latvia could position itself as an innovation hub, but Latvia needs a success story of innovation – this will create an international brand. Printful is not enough. We try to follow Estonia, but we are terrible at marketing. We have many successes, which we do not know about and terribly communicating. Mikrotik and other companies are doing a great job. LIAA is not communicating enough about success stories. We need a book with such stories.*

**Financial and insurance activities:** *Latvia's innovation ecosystem is growing, it's becoming stronger. And it feels like, a couple of years ago we were behind our Baltic neighbours, both Estonia and Lithuania. And I think we're at least level with them now, possibly even ahead. Startup organisations are doing good work. TechChill has become quite a big, high profile annual event. There was the recent AI event held at Hanzas Perons with the high-level speakers, which has put Riga on the map. So, I think we're moving in the right direction there.*

**Financial and insurance activities:** *On key scientific/technological achievements – when you asked the question, my first thought is around defence and particularly drones. Over the last few years, I believe that Latvia has made great progress in terms of the use of drones. That's an area of expertise that seems to have been built quite quickly within Latvia. Obviously, it's very relevant, it's very topical, it's very geographically beneficial for us.*

**Financial and insurance activities:** *On what would increase awareness about the innovation ecosystem – for me, what really makes a difference is when you've had an absolute success story. So, it's not some theoretical exercise, it's tangible – this has been a success, this is how we did it, this is what we're capable of. And then all of a sudden it becomes not a story, it becomes a fact that this is what Latvia has achieved. And it shows that we've got the people on the ground that can*

*deliver such complicated solutions, we've got investors who are ready to invest, and we've got the whole sort of support system with the development agency, with Startup House, etc. So, for me it's very important to have real success stories and then go out there and tell the world about them.*

**Electricity, gas, steam and air conditioning supply:** *The innovation ecosystem seems to risk averse. Because of this, we have been thinking about creating our own innovation fund. Looks like the industry needs to do things on their own or find cooperation partners. Regarding special regulation zones (e.g., SEZ), which allows lower tax and better synergies, this is a tool for the states to improve the manufacturing and create synergistic zones to expand. It's clear that we can't compete with Finland or Sweden on energy prices, so the good thing is the connection possibilities. For example, in the Netherlands it is impossible to build a data centre, but in Latvia it is possible - it is just the matter of costs and taxes. So, the government needs to decide how to attract these investors. Especially, this would be doable through the SEZ – investors would be keen to use special tax conditions.*

**Education:** *The innovation and economic potential Latvia has, as a country, is significant, precisely because what Latvia offers is not available in many other places – space, natural resources, smart and hard-working people, good climate, rich culture. The level of technological development is quite remarkable, given how quick Latvia was able to build its infrastructure. Because so much was built in the past 30 years, particularly in digital infrastructure, Latvia is actually quite advanced in many respects. Things like public transport apps on trams and trains, or the quality of the internet, are well ahead of countries like the UK. There is a great deal to be proud of, and I am sure there is room to innovate further.*

**Education:** *Latvia and Estonia - the two countries diverged significantly depending on the paths they chose. Latvia took the more traditional route, while Estonia was far more willing to take risks. And I think that risk aversion is still very present in Latvia today. You see it in the banking sector, for example, which is extremely conservative about lending and very focused on making sure every box is ticked.*

**Education:** *My perception is that innovation is somewhat strangled by this culture of caution, this tendency to think/discuss for too long rather than simply trying something. What is there to lose? I was genuinely heartened to hear about the work being done in various sectors, particularly defence. But it feels like that only happened because the situation forced it. Would it have happened without the geopolitical pressure? I am not sure. So yes, innovation does happen here, and it can happen, but it tends to be reactive rather than proactive. That is my honest perception, though I acknowledge it may not be entirely fair.*

**Other service activities:** *Universities have been able to build parts of the innovation ecosystem, especially in recent years. Institutions, such as Riga Technical University, appear to have strengthened their position, likely supported by stronger national and EU financing. New solutions are being developed, and there is visible activity in the academic environment. The main weakness is that this is not communicated well enough. There is too little public visibility around achievements, and information about new developments reaches a limited audience. More promotion of concrete solutions and success stories would help increase awareness.*

**Other service activities:** *There is clear potential in the younger generation. Hackathon experience has shown that students are highly active, capable, and motivated to create new solutions. This suggests that the talent base is there.*

**Other service activities:** *At the country level, innovation is developing, but progress is uneven. Geopolitics has made areas such as drones and military production more important, and these sectors require a high level of innovation. Even so, Latvia seems to be lagging behind its*

*Baltic neighbours. Recent examples in defence-related business suggest that Estonia and Lithuania are currently producing more visible success cases.*

**Other service activities:** *Latvia has some notable innovation success cases, such as Printful, but overall there is still considerable room for improvement at the state level. The academic environment is strong enough to support further development, but this potential is not yet being fully translated into broader innovation success.*

**Information and communication:** *There are many opportunities, especially for startups. Various forums, platforms, and funding opportunities are available, including support from European Union programmes. However, whether companies fully utilise these opportunities is another question.*

**Information and communication:** *The ecosystem currently appears fragmented, with no single platform or centralised process. A lack of coordination is a key feature of the innovation ecosystem in Latvia. In the organisation's experience, there has been no proactive outreach from the state, and there is a lack of clear, accessible guidelines for new companies. Overall, there is a shortage of comprehensive and centralised information.*

**Information and communication:** *There has been no direct collaboration with the research sector so far, and as the organisation has only recently started operating in the Latvian and Baltic markets, its local experience remains limited.*

**Information and communication:** *In terms of technological achievements, developments are most visible in areas, such as defence-related technologies. There is also an increasing use of AI in professional services. A notable example in Latvia is a local language technology company. Overall, the market appears more focused on adapting existing solutions rather than creating new ones.*

**Transportation and storage:** *The innovation ecosystem in Latvia shows signs of developing. One positive example involves a former lecturer from the Maritime Academy, who began researching ship measurements as part of his teaching work and has since moved to doing this at a commercial level. It is a very specific niche, but it illustrates that something is happening – people build knowledge in academic and commercialise ideas or continue their R&D&I activities in the private sector. More investment for R&D&I is always possible, and more resources could be directed to this, but the picture is not entirely negative in Latvia. I am optimistic about progress and potential.*

**Real estate activities:** *here is a good innovation potential, particularly in collaboration with institutions such as Riga Technical University, where there are ongoing developments and research activities. However, there is a lack of incentives for businesses to invest in innovation. There are no meaningful tax benefits or support mechanisms for companies that invest in R&D. At the same time, there are concerns about the effectiveness of public funding. There is a perception that funds are sometimes allocated without sufficient oversight or quality control, leading to low-value outputs. This reduces trust in the system. As a result, private businesses are hesitant to invest in innovation. This is further compounded by low profit margins in sectors, such as construction and high overall tax burdens, which limit available resources for innovation activities.*

**Human health and social work activities:** *From our perspective, collaboration across the innovation ecosystem remains weak. The main reason is practical rather theoretical. In a small company, a large share of time is consumed by administrative obligations, leaving little capacity to engage more actively with other businesses, research actors, or support organisations.*

**Human health and social work activities:** *There is also very low visibility of what is happening in the innovation ecosystem. We have discovered innovative activities and capable*

*organisations almost by accident rather through any clear communication channel. That suggests the problem is not necessarily the absence of innovation, but the absence of a platform that makes it visible.*

***Human health and social work activities:*** *What is missing the most is stronger communication of success stories. Too often, achievements remain fragmented, unknown, or under-promoted. A more visible and accessible platform for highlighting innovation, research, and applied success cases would increase awareness and help connect actors that currently remain isolated from one another.*

***Human health and social work activities:*** *The ecosystem exists, but it often feels inward-looking and more focused on access to public funding than on engagement with industry. There is also a recurring assumption that companies are mainly interested in participating in funding schemes, which is not necessarily the case. As a result, much of what is being developed locally remains largely invisible from an industry perspective because it is not actively communicated.*

How would you assess the quality of support of R&D&I-focused organisations (e.g., clusters, incubators, technology transfer offices)? Why?

#### ***Quotes of respondents/interviewees from Latvia***

***Transportation and storage:*** *Not much experience, hard to comment. But maybe it is also sort of indicative that I don't know what to answer about the quality of business incubators, TTOs in Latvia.*

***Other service activities:*** *I don't have enough experience about the quality of support of R&D&I-focused organisations in Latvia. But I also don't see their results. What happened to some sandbox initiatives we had? I suspect they try/tried to do something, but this something is simply not enough to ensure that Latvia has great unicorns, innovative projects between the public and private sector etc.*

***Manufacturing:*** *Latvia's innovation ecosystem is very fragmented. There are a lot of institutions, and I am not sure they coordinate well and are well-aligned. In fact, I seriously question if they are aligned. There are some efforts here and there, but it does not seem there is a logic, strategy behind all these institutions. Why do they exist? What do they do? What have they produced over the last 5 years? I think there is a need for a thorough analysis of who does what and why, and then the government should decide where it makes sense to invest.*

***Real estate activities:*** *Not enough support from institutions for ecosystem building, only solo initiatives.*

***Construction:*** *I think the quality of the R&D&I institutions is overall good. There is a technology transfer centre at the University of Latvia. They are working on a technology that we were not aware of, but we were working on a similar technology. Sounds good what they are doing, but they should have been more vocal about it. It could have been a key technology for us. Communication is key. Communication is missing often on who does what, what are opportunities for collaboration.*

***Financial and insurance activities:*** *I don't see results of these incubators. I know they create networking opportunities, but I question if they really stimulate innovation. It is critical for start-*

*ups to feel even psychological support, but I would rather vote for a few really strong incubators with great expert support, network to investors etc. than many small and rather useless organisations.*

**Information and communication:** *R&D&I organisations are important, but in the business world it is essential to get a result. Current organisations should be measured by the outcome – where is it? Where are Latvia's unicorns? They are framework organisations, which spend money, they delegate functions, but in essence they request national or EU funding and spend it. No result, no impact.*

**Financial and insurance activities:** *In terms of good R&D&I organisations in Latvia, I immediately think about RTU. My perception is that RTU does some quite interesting work. I'm probably not that qualified to answer this question in detail, but my perception is that we're reasonably well-placed and we're getting stronger in this area.*

**Education:** *I see a lot of activity in the innovation space, including conferences, focus groups, and frequent discussions about innovation. It feels like the infrastructure exists and that things do come out of it. But I cannot point to specific concrete outputs. I know there are various support agencies, and that they are not particularly well funded, but they do exist. The fact that I miss information about their results is worrying me – either there is nothing to report or it is poor communication.*

**Other service activities:** *Support has come only from the academic environment, through information or proposals related to possible innovations and solutions. Nothing comparable has been experienced from other R&D&I organisations or the state side. This seems to reflect a broader issue of unclear state priorities. Some sectors appear not to be seen as strategically important, even when they can bring strong long-term value. For example, service-based operations are sometimes still viewed too narrowly, despite their role in retaining young talent in Latvia and offering international-level work experience without people having to leave the country. There is a need for a clearer government approach to where support should be directed and which sectors should be actively promoted.*

**Information and communication:** *The quality of support depends largely on universities. However, Latvian universities have been declining in international rankings, which is closely linked to human capital challenges. Talented individuals tend to leave for countries offering better salaries and opportunities. In Latvia, it is relatively difficult to build a sustainable career in research, which contributes to talent outflow. The organisation's experience with incubators has been limited, mainly restricted to networking events related to startups. I wish incubators provided more technical expertise and mentoring.*

**Transportation and storage:** *The innovation support infrastructure exists in a modest, but developing form, with individual academics and researchers beginning to commercialise their work. The general impression is that collaboration happens in isolated pockets, driven by motivated individuals, rather through well-structured support institutions.*

**Transportation and storage:** *Our key innovation-related challenge in our sector is a demographic and societal one. As societies become more affluent, fewer people are willing to choose a profession that requires being away from home for months at a time, even when compensation is above average. We run scholarship campaigns in schools and work with the Tallinn Maritime Academy on joint officer training, to encourage people to choose professions in our industry.*

**Real estate activities:** *Hard to comment – limited knowledge. But would be good to learn more about the ecosystem and supporting organisations.*

**Human health and social work activities:** *In practice, the existing support mechanisms are not especially relevant for this kind of business. What is needed is not small-scale incentive support, but a functional regulatory framework for secondary health data use, together with a clear pathway for procuring and scaling validated pilot solutions.*

Could you please elaborate why you have selected [the following – depending on a survey response] 3 industries with the highest innovation potential in Latvia?

#### **Quotes of respondents/interviewees from Latvia**

**Transportation and storage:** *Selected industries have to be developed – Transportation and storage, manufacturing, IT. We should create products with high added value, instead of exporting raw materials abroad. These industries in Latvia are large and have a great potential, therefore there is definitely a great need for innovation in them. What kind of innovation? I don't know.*

**Other service activities:** *IT and finance (fintech) – something is happening there. They have a good collaboration, new technologies are coming out. This is a part of global tendencies, but I am glad that Latvia is following the lead.*

**Other service activities:** *Cybersecurity is extremely important for Latvia and we could develop great potential. Estonia has a cybersecurity centre, but we have many highly qualified employees in this area. I hope Estonia and Latvia will collaborate more in the area of IT. It would be best for everyone.*

**Other service activities:** *Historically Latvia has several strong pharma companies, we are developing some biotechnologies. I know that Latvia has many very knowledgeable biotechnology/medicine researchers and scientists, but there is very limited support available for them. I hope the government will invest more into these industries, and I hope that young people would be attracted to these fields, as they offer a great potential and it would be good for the country in so many ways.*

**Manufacturing:** *Agriculture definitely has a huge innovation potential. If we compare ourselves to the Netherlands, they are much more focused on technology, they analyse costs, how efficiently they use all the materials they put in the ground, how they process it afterwards. We are lightyears behind. The EU funding is available, therefore there is a huge potential to be much more efficient and competitive.*

**Manufacturing** – *huge potential in terms of both product and process improvements. Companies simply have to do a consistent analysis of their activities and then identify areas for improvement, new technologies, market niches. Innovation is not something revolutionary, it is a requirement, a gradual transition towards better products and services. For me, the amount of innovation in a company shows the quality of management. If the management really cares about the business, they will look for most innovative solutions, they will know what problems need to be solved. The same applies to the government and the public sector – if the government or the public sector do not seek improvements, do not innovate, it is not a good government.*

**Manufacturing:** *Greentech, medtech, govtech, AI...you name it...Latvia can excel in anything, but to do it we should start with something and that something should be very concrete. One industry, one focus is needed. I know this is not what politicians want to hear, as they need to make a decision in terms of industry, but they have to make that decision. Without this decision, Latvia*

*cannot excel in anything. Investments and innovation in one area will definitely bring a spillover to other industries and build R&D&I capabilities.*

***Real estate activities:*** *The construction industry has been conservative, but new technologies, such as robotics, AI and others, can provide many business opportunities. There are good collaborations with disruptive innovation IT companies to boost development and innovation of the industry.*

***Real estate activities:*** *Public administration productivity, bureaucracy, slow processes can be improved. Govtech certainly would boost attractiveness of Latvia and there are so many competitive edges that Latvia could use. Technologies provide so many opportunities. Latvia could become a best in class, best in Europe if Latvia was bold and fast enough to implement new technologies. Consultants certainly can help to ensure it is done in a constructive manner. We should not waste this opportunity.*

***Real estate activities:*** *The sector of education can benefit a lot from technologies. The younger generation should adopt technologies as soon as possible. Latvia should introduce in the curriculum courses on economics – how to become economically skilled, how to spend money. This is critical, as these skills and knowledge will have a life-long impact for the economy. This is possible to do next year, we only need a political will.*

***Construction:*** *Electricity, renewable production, storage – are very important. This should be aligned around the supply and demand. This would be an energy cluster and then optimising the use of the grid and of the renewable resources. Real estate development is another promising sector – targeted industrial parks would be good for Latvia. Manufacturing – we need high technologies. Power electronics is very important for Latvia's economy.*

***Financial and insurance activities:*** *We should innovate on the basis of what we already have in the country, what are our largest industries, what is the knowledge base of our people. For example, we have natural resources – great food and food making traditions, clean environment, good climate, Baltic Sea – so foodtech, food products, fish, sea-related products.*

***Financial and insurance activities:*** *Latvia is very developed in terms of digitalisation, compared to most so-called developed/Western countries. Data availability, public sector services – this is fantastic what has been achieved in Latvia. This is our comparative advantage. We should continue! Everything should be one-click, one-stop-shop. Our country is small, we could digitalise, speed up and facilitate so many processes and become unique. The public sector definitely could be more digitised and govtech could create a new booming industry, while also improving the overall investment climate. IT sector in Latvia is our amazing opportunity, we are already doing great things and we should do more. In the area of medicine – we have great technologies for surgeries and great professionals in this area. There are small steps in medtech etc., but they should be noticed. Wood technologies – Latvijas Finieris – they develop and go forward, how to use wood in a sustainable way. This is a huge industry and we should invest in its development. Why can't we produce furniture instead of shipping wood abroad?*

***Financial and insurance activities:*** *I really look forward to the edtech solutions. Our people are smart, but the education system is not optimal. If we had edtech, it would boost productivity and development of all industries. Actually, it is possible to develop any industry, the government simply has to create a supportive environment and people will find a way.*

***Information and communication:*** *Biotechnology, wood, IT are Latvia's strongest industries with high innovation potential. We have a massive knowledge pull there and a few large companies, which could push the ecosystem further. If we focused on these industries, we would be so much further.*

**Financial and insurance activities:** *Why I picked energy, education and IT as industries with high innovation potential - it is because it feels to me like we're not starting from zero in any of those areas. And I think we're already at a reasonable level. Some are probably more advanced than others, but we're already at a reasonable level and therefore we can kick on to the next stage.*

**Financial and insurance activities:** *Energy and innovation should go hand in hand – we need to power the entire economy and the entire country. I think we have the natural resources in terms of wind and solar. So that, to me, seems to be a natural opportunity and innovation. And I remember when Kariņš was the Prime Minister, there was some talk that we were trying to become the world leaders in terms of turbine technology. Frankly, I don't know what's happened with that, but it feels like there's an opportunity there.*

**Financial and insurance activities:** *I've worked in different countries, and I think Latvia's reputation for education is very good. And I think this is a way of attracting innovation and the benefits there are that it can attract more foreign students. I know we already have quite a few, but we can attract more foreign students. More importantly, target foreign students - the ones that we want coming, and that can basically uplift society with their knowledge and skills. And perhaps they would finish their studies and stay in Latvia, perhaps not. But while here, they can certainly add to the innovation society. Would be great if the government came up with the way to keep these foreign students once they graduate – Latvia needs young and smart labour force. As far as I am aware, Latvia does not have a smart migration strategy.*

**Financial and insurance activities:** *Information and communication – I think Latvia is reasonably strong in this area. I think TET does a lot of good work. Defence industry innovations are super important, because if we can reassure investors that we're a secure nation, you're simply more likely to get more investment. Sadly, we have to keep coming back to defence and security.*

**Financial and insurance activities:** *Why I picked energy, education and IT as industries with high innovation potential - it is because it feels to me like we're not starting from zero in any of those areas. And I think we're already at a reasonable level. Some are probably more advanced than others, but we're already at a reasonable level and therefore we can kick on to the next stage.*

**Electricity, gas, steam and air conditioning supply:** *The insurance market for the energy sector represents a significant structural problem with a direct link to innovation financing. There is effectively only one insurance company in Latvia currently willing to insure assets in the energy industry. The lack of broader market participation stems from the highly technical nature of the sector, with complex equipment sourced from multiple international markets, making it difficult for standard insurers to properly assess the risks involved.*

**Education:** *I selected industries, based on where Latvia has natural strengths and genuine room to grow. On agriculture and forestry: Latvia has so much space, and that is genuinely rare in Europe and in the world generally. In many other countries, agriculture is under serious strain, because land is being consumed by industry and housing. I do not think Latvia is anywhere near running out of space. Forestry is already a significant sector, but could it not be bigger? I think there is considerably more potential that has not yet been tapped.*

**Education:** *On tourism, particularly rural tourism: this is a massively underused opportunity. There is often talk about how different Riga is from the rest of the country and about the need for more investment in the regions. Rural tourism could be exactly that investment, attracting both domestic visitors and people from many other countries if marketed properly. My thinking here is partly shaped by experience of living in Spain, where the government developed a deliberate rural tourism strategy that is now worth a great deal. There is real learning to be taken from that.*

**Education:** *On food and accommodation: people are increasingly looking for sustainable living and farm-to-fork food experiences. Latvia is well placed to offer that, and it sits naturally alongside the space, the coast, the sea, and the work that has already been done on energy sustainability.*

**Education:** *On arts and culture: this is an area with huge potential, not just for Latvia, but for the whole of the Baltic region, which is one of the most culturally rich parts of the world. I am not convinced enough is done to promote it.*

**Education:** *On financial services: this sector is growing everywhere, and it ultimately depends on regulation and government appetite. Latvia has historically been cautious here, because of past difficulties, which is understandable, but it remains a real possibility if the legislative conditions change.*

**Other service activities:** *Defence is one of the industries with the highest innovation potential. Geopolitical developments have made it strategically important, and the sector is now attracting much more attention. There are also companies in Latvia that have been developing relevant technologies for years, and hopefully now they could reach a broader market.*

**Other service activities:** *Technology is another area with strong potential. Latvia has a long-standing base of experienced technology professionals, including people with international experience. There are companies that have adapted over time to market shifts, for example, in data infrastructure. Some faced difficulties when cloud adoption accelerated, but demand has grown again with the rise of AI. There have also been significant success cases, including companies that attracted major investment, which shows that large-scale growth is possible. The potential is there, but success stories are not communicated enough, and many of these companies have developed largely without the state support.*

**Other service activities:** *Pharmaceuticals and chemicals should also be seen as promising industry. Latvia still retains capabilities in these industries and has not lost them in the same way as in some other sectors, such as maritime industry and shipbuilding, where much of the competence base has disappeared.*

**Other service activities:** *Business services should also be included among the high-potential industries. Latvia has a strong talent base, good English skills, and people who compare well with other European countries. There is still room for growth, especially in medium-sized shared service operations. Compared to countries such as Poland and Lithuania, Latvia still appears to have untapped potential in this area.*

**Information and communication:** *The healthcare sector has strong potential due to rapid advancements in artificial intelligence. Cybersecurity also presents significant investment opportunities, alongside quantum technologies. There is also a clear need for closer cooperation between the Baltic States, particularly in relation to human capital. Stronger regional cooperation would effectively expand the market, support sector development across the region, and improve talent availability.*

**Transportation and storage:** *On agriculture and the energy connection: the primary focus is biogas. Heavy industry and shipping are sectors, where a full transition to electric power is not feasible in any realistic timeframe. Biogas is one of the viable solutions. The model involves processing agricultural and organic waste into gas that can be pumped into the pipeline network, similar to approaches already operating at scale in Germany. Biogas currently has strong market demand and a clear distribution channel, making it a sector with significant potential. Our company is building a biogas facility in Latvia that will be the most innovative of its kind domestically.*

**Transportation and storage:** On electricity, steam and air conditioning supply: this connects directly to the energy transition theme, encompassing the development of more efficient energy systems and linking to the broader biogas value chain.

**Human health and social work activities:** I see a strong innovation potential in the ICT sector, because digitalisation continues to expand into new areas and does not appear close to saturation. The progression from paper-based processes to electronic signatures and increasingly advanced digital tools shows that this field continues to evolve rapidly and opens up new opportunities. Plus, Latvia is a champion in digitalisation in Europe, therefore we must capitalise on it.

**Human health and social work activities:** Professional, scientific, and technical activities have a strong potential, as Latvia clearly has capable researchers and applied expertise. The issue is not a lack of ideas, but that many good examples remain too invisible and disconnected from wider recognition, investment, and commercial application.

**Human health and social work activities:** Human health and social work also have a major potential - there are many unresolved needs in this area. Better care delivery, improved access, diagnostics, and support solutions - all represent significant opportunities. With sufficient resources and a stronger development platform, this field could generate both social and economic value.

**Human health and social work activities:** There is also unrealised potential in adjacent fields, such as waste management and recycling, where local innovation exists, but does not always receive practical support or market opportunities.

**Human health and social work activities:** Health is directly relevant through diagnostics, clinical science, and care pathways. ICT is closely connected because the infrastructure that enables health data use and digital health solutions sits within the digital sphere. Defence is also relevant in the current geopolitical context, as health systems are not only economically important but also part of critical infrastructure.

Why do you believe that the [the following – depending on a survey response] industries would benefit from stronger R&D&I collaboration with the Baltic States? What are the strengths/weaknesses of other Baltic States, and of Latvia?

#### ***Quotes of respondents/interviewees from Latvia***

**Transportation and storage:** Collaboration with the Baltic States is essential, we should not reinvent the wheel. We should adopt existing technologies and integrate to the local environment. We should concentrate on best offers whether they come from Latvia or from abroad. For example, Ukraine suggested for Latvia to purchase tested systems in the defence industry, but we start creating our own not knowing how they will function. Public procurement also raises a lot of questions on how transparent it is.

**Other service activities:** Defence and defence innovation is critical for the Baltics. Politicians say – it is safe, it is safe. But let's better be ready for anything and invest in defence, defence tech development and collaborate. At the moment, Baltics do not collaborate enough, they could not create even one joint project, while investments in the defence industries could boost the regional economy and create a more collaborative environment. In addition, the Baltics should create a

*joint defence strategy, as it does not make sense to put land mines in one country and not to do it in other Baltic States.*

**Manufacturing:** *We have three sales teams in the Baltics – there are three different mindsets, you can be amazed how different Estonia, Latvia, Lithuania are. But, just like a team, we can be different, and we can work together. We face a great threat – Russia. If we seek a structured approach towards defence, energy, infrastructure, agriculture, we will solve our individual problems much better. Collaboration is key everywhere – in business, in life, in the public sector. Nobody should fight all battles alone and certainly not in the current situation. I am not sure how alone we can sustain our investment climate if we will not collaborate.*

**Real estate activities:** *Demography is the most important factor for the development. This is a big reason for investors to go to Lithuania. In Latvia, the market continues to shrink. Lithuania's growth is also rooted in entrepreneurial mindset – it is their cultural orientation. Defence sector cooperation is also critical, there are so many opportunities. We should attract investments as a region for the defence sector. We understand there are differences between the Baltic States, but still we should be partners rather competitors. Retail/wholesale needs scale, therefore Baltics should work together and innovate together. For retail to grow, to be productive and efficient they need scale. Manufacturing also needs access to labour, procurement – everything what goes into the value chain. Each Baltic can specialise in a specific thing, but together they create a strong, competitive and attractive region. For Latvia, it would create a lot of sense.*

**Construction:** *It would be good to have a common electricity grid, which should be connected to the EU mainland – Baltic interconnected. Now electricity costs are very different across the three Baltics. We should have a connection between the Baltics. Rail Baltica is important. It would affect the business environment, support the security efforts. Finance and insurance – there are different pension systems across the Baltics. There is not enough insurance to avoid poverty of old-aged people. Estonia has already released the second pillar of the pension system. There should be common products for the pension system and a unified approach. Real estate – industrial clusters across borders, electricity parks.*

**Financial and insurance activities:** *Each neighbour tries to be competitive, but we can work together in the face of joint challenges. Defence industry – we work alone, despite a joint threat. Why can't we buy munition together? Drones can be bought from Ukraine – they are testing technologies and know best how it works. Where is our Baltic collaboration? I think we can only dream about it. I know it is easy to say – go and collaborate, but best collaboration is when you have a lack of money and have a joint challenge. So, we have perfect circumstances, but still prefer to be stubborn and do it our own way.*

**Financial and insurance activities:** *IT is a Baltic strength, why not sell it as a regional advantage - Baltic digital tigers or something like this? Fintech is definitely growing in the Baltics – same principle. Why not create most competitive fintech products and services in the world. If we work together our ambition can be much higher. At the moment, our ceiling is competition at the Baltic level, which is wrong. If we, as Baltics, work together our target is to create a global brand for the Baltics. This is a win-win, but politicians don't think like businessmen, they like to complicate things and create artificial walls. Transporting and logistics have been historically the Baltic economic advantage, because of our geographic location. Why don't we continue?*

**Information and communication:** *I believe the Baltics should collaborate in manufacturing, as it needs scale and manufacturing is not the strongest industry across all Baltic States. IT is a hallmark of the Baltics, let's capitalise on it and work together. Besides that, there would be so many opportunities in other industries, like energy, education, professional services etc., but until now the Baltics like to play too much politics.*

**Financial and insurance activities:** *I selected industries, where Latvia is already at a relatively high level and surely collaboration will make us even stronger in those areas. At a Baltic level, we seem to sort of not really want to be in competition with each other. But in some way it's highly competitive, because we want to be better than Estonia, we want to be better than Lithuania and they want to be better than us. But at the same time, we shy away from competition. Actually, competition is super healthy, because it will push you to the next level.*

**Financial and insurance activities:** *I think there's nothing wrong with having, I don't know, three wind energy specialists in each of the countries. And in my opinion, may the best man win, may the best company win, and they will all push each other to greater things. I think competition is important, but also collaboration is then important, and I think that's quite a difficult balance to achieve, because if you're all in super competition with each other, you're less likely to collaborate. But the end of my point is if you start off with, say, 100 companies – and this is what happened in China with electric vehicles – if you start off with thousands of companies, slowly but surely, the survival of the fittest, you'll end up with a few companies and then they can really collaborate and they're the best of the best. And all of a sudden, you're really jumping forward, making huge progress. So, I think you have to go through this process of survival of the fittest.*

**Financial and insurance activities:** *On strengths and weaknesses — I still feel like Latvia still does not have this aligned set of priorities or this overarching game, you know, what do we want to be known for, who are we? I think we're getting better with this. I think this whole innovation hub and technology thing is coming through, but I think we still need to be absolutely focused on what do we want to be known for.*

**Financial and insurance activities:** *At a Baltic level, we are creating this reputation of innovation and agility. The businesses are small, they can move quite quickly and be agile. I think the weakness is our geography. We're at a disadvantage, because we're on Russia's doorstep. Having said that, it doesn't seem to really affect the investment climate, which is good. And I think there might still be some sort of association with Russia, although I think that's quite quickly becoming less and less. In some rather strange way, the invasion of Ukraine has helped us there, because it has created this very clear separation between Russia and the Baltics, which in the past may have been a bit blurred.*

**Electricity, gas, steam and air conditioning supply:** *Contrary to some views, R&D&I is unlikely to be a primary driver of significant GDP growth for the Baltic states in the foreseeable future. The resources needed to compete at scale with the leading EU regions, the United States, or parts of Asia. More realistic outcomes would be incremental improvements to productivity and efficiency, and the development of exportable solutions in specific niche areas. That said, there is at least one area, where meaningful Baltic collaboration on R&D&I could have a genuine strategic value: CO<sub>2</sub> storage. There are promising potential storage sites in the border region between southern Latvia and northern Lithuania, suitable for large-scale CO<sub>2</sub> sequestration, comparable in concept to existing natural gas storage infrastructure. The CO<sub>2</sub> capture and storage sector is not yet commercially mature, but it is developing. Energy companies are already investing in capture technologies, and the question of where to store CO<sub>2</sub> will become critical within the coming decade. If Latvia and Lithuania do not develop the necessary research base now, they will be years behind when commercial activity begins. Offshore oil reservoir storage options around Europe will eventually run out, and the question of alternative storage locations will become urgent.*

**Electricity, gas, steam and air conditioning supply:** *On the risk capital and the financing of innovation more broadly, the challenge is for the early-stage startups. Engagement with Latvia's startup ecosystem suggests that while most phases of startup development have a functioning support structure in place, the pre-seed phase is almost entirely unfunded. There is very little risk capital available in the Baltics for this stage, and the state support is largely absent.*

**Electricity, gas, steam and air conditioning supply:** A broader observation on the energy sector specifically: R&D is structurally more difficult in this industry than in others. The technical complexity requires that business development functions operate at the same level of understanding as engineering teams. Organisations where engineers are represented in management are better positioned for this, but building that kind of culture takes time. The energy industry has generally lagged behind other sectors in creating the conditions necessary for meaningful R&D investment.

**Education:** The industries I selected for Baltic collaboration are largely the same as those I see as having the highest innovation potential in Latvia overall. In terms of how Latvia compares to its Baltic neighbours, Latvia always seems to be the one lagging behind, which is a bit of a sore point. I think it comes back to that same risk aversion and fear of getting things wrong. Estonia is consistently cited as the leader in terms of technological edge and innovation, and rightly so. Lithuania, I hear less about, but its larger size and geographic proximity to Poland and the rest of the EU probably give it certain advantages. Latvia's perceived disadvantage, in my view, comes down to the same issue: too careful, not bold or brave enough.

**Other service activities:** Stronger R&D&I collaboration across the Baltic States would be beneficial, as innovation requires additional time, people, and funding, and these costs are difficult for one company to carry alone. In many cases, there may be an interesting idea, but no clear business case at the beginning, which makes it harder to justify internal investment. Shared regional cooperation could reduce these barriers by pooling resources, expertise, and risk. This could include access to specialists, researchers, students, or targeted funding that would make experimentation more feasible for companies.

**Other service activities:** Lithuania and Estonia appear stronger in terms of policy stability and long-term direction. The main difference is that they seem to follow longer-term programmes that are less affected by short-term political decisions. In Latvia, situational political changes create more uncertainty, and that weakens confidence.

**Other service activities:** Estonia, in particular, appears more open to experimentation. Even where mistakes have been made, the system seems to tolerate risk better, and people are less afraid to try something new, build startups, or test ideas. There is a clearer understanding of business risk and how to manage it. In Latvia, there is still more caution, especially because of uncertainty around political and economic decisions. Younger people are more open, but overall there is still more hesitation, despite the growing visibility of startup culture and technology initiatives.

**Information and communication:** Although there is no direct organisational experience with Baltic cooperation, one key gap relates to device-level innovation. Cybersecurity is no longer limited to software, but increasingly involves hardware and devices. This is an area that requires greater attention, as large manufacturers are currently facing significant challenges in finding qualified talent. Strengthening regional collaboration could help address these gaps. Latvia's key strength lies in its human capital, particularly in the IT sector. There is strong potential, a willingness to learn, and the ability to adapt quickly to new technologies. For example, technologies can be adopted within six months in Latvia, whereas in some other countries this process may take up to two years. Another strength is work attitude, with employees showing strong commitment and readiness to work.

**Information and communication:** At the same time, there are concerns regarding education and workforce preparation. Universities should place greater emphasis on how young talent is trained, particularly in terms of work culture, communication skills, and client interaction. Remote learning has had a negative impact on the social and communication abilities of younger generations.

**Transportation and storage:** *The fundamental argument is one of the economy at scale: the larger the combined market, the better the outcome for everyone, regardless of the specific sector. A larger economy generates benefits across all participants. Food security is one area, where Baltic cooperation makes clear sense. Other sectors, where collaboration would be beneficial include insurance services, manufacturing, accommodation and food services, and transport and storage.*

**Real estate activities:** *There are areas, where cooperation could be significantly improved. Large infrastructure projects, such as Rail Baltica, are an example. There is limited coordination between countries, despite clear opportunities to standardise procurement and achieve economies of scale.*

*In addition, transparency is an issue. Key project information is often classified, limiting both public understanding and business participation. This reduces efficiency and trust. Overall, while there is both cooperation and competition between the Baltic States, there is untapped potential for more structured and effective collaboration across them. It would be beneficial for everyone, I am sure.*

**Human health and social work activities:** *Stronger Baltic collaboration could be valuable in many sectors, including manufacturing, medical services, ICT, and business services. The basic logic is that the three countries together create a more meaningful scale and could function as a stronger regional platform, especially in relation to the Scandinavian market.*

**Human health and social work activities:** *Manufacturing is one clear example, because the region has an industrial base and there is no structural reason why stronger productive capacity could not be developed further together. More broadly, the same principle applies across sectors: cooperation can work where there is complementary capacity, shared demand, and a practical route to scale.*

**Human health and social work activities:** *The main weaknesses are not sector-specific. They are the broader business environment issues that affect almost everything: high labour taxes, heavy administrative burden, and the lack of a genuinely supportive regulatory approach. If those conditions improved, the Baltics could position themselves much more effectively as a regional innovation and service hub.*

**Human health and social work activities:** *There is real potential for cooperation, especially in areas where the countries face similar regulatory challenges and have broadly comparable systems. This is particularly relevant in areas linked to health data and innovation. At the same time, there are differences between the countries in terms of openness, connectivity, and how cooperation with industry is approached. Even so, the overall potential for closer Baltic cooperation is significant.*

Why do you believe the [the following – depending on a survey response] 3 policy instruments would be most effective to untap the innovation potential of Latvia?

#### ***Quotes of respondents/interviewees from Latvia***

**Transportation and storage:** *First, the Latvian government should set a clear goal – where do we want to excel, what industries we want to develop, and then think about instruments that could support these goals. Without a clear goal, any policy instrument will be useless.*

**Transportation and storage:** *Often, we complain that Latvia is a small country, we have limited resources. It is true, but there are many small and very developed countries, and they manage to attract investment, develop technologies, effectively collaborate with the government. Size matters,*

*but it is not the only determining factor. We can innovate and do great things - it is up to us if we are bold and ambitious enough. There is EU funding available. I feel that sometimes we simply waste it or not use enough of it. Funding should be goal-oriented and sustainable to ensure that whatever was achieved/developed with the funding instruments can be sustained. Otherwise, it is just a waste of money.*

**Transportation and storage:** *I don't believe start-ups should be the cornerstones of innovation.*

*You need the entire ecosystem activated to ensure innovation happens. Startups have limited experience and few resources, they are like kids that need to be helped. They have potential, but to utilise this potential they need a massive support system. When I think about a functioning innovation ecosystem I think about multiple types of stakeholders that are doing innovation in a coordinated way – they communicate, they collaborate, they achieve results together. Ecosystem is not just a bunch of actors, it is about a coordinated, targeted system of stakeholders. This is what the Latvian government should focus on, not on individual silo efforts. Investments are needed for the real ecosystem development, not just for small projects here and there.*

**Other service activities:** *Policy instruments for innovation should focus on concrete projects. Selection of projects should focus on the quality of their teams. These projects should be large to create an ecosystem, which involves multiple stakeholders. This would be most effective and create a lot of positive spillover effects – sharing of knowledge, infrastructure, decrease of costs, potential business long-term partnerships. Projects should focus on the creation of innovation ecosystems, which form long-term, sustainable partnerships. Once people collaborate, are integrated into the supply chain, know who has what expertise and needs, it will create a system of relations, which will sustain each other after the end of the project. Startups have limited capabilities, universities do not have a pragmatic approach to project management. I believe large companies should become drivers of these innovation projects. They would be most suited and have the resources to pull the stakeholders into their network.*

**Manufacturing:** *Baltics are seen as a cheap production region. Cost-competitiveness is certainly an advantage, but the region could offer so much more than that. Latvia has smart people, who are willing to work, good logistics/connectivity, but this is something what should be promoted, and the government should invest in strengthening R&D&I capacities, infrastructure. Only then the government can “sell” Latvia or Baltics as a “smart region”. Without public investments, the private investment will not come. Plus, innovation will not happen if Latvia will not bring more brains to the country. The world is fighting for talent. Majority of investors have offices in many countries. Thus, the local management should convince the headquarters to do innovation exactly in Latvia. So, the government should point to very concrete opportunities for that.*

**Real estate activities:** *R&D is always linked to education, therefore investments should go to the education sector. Latvia needs entrepreneurial mindset. For innovation, you need collaboration. Finding as many contact points as possible to create as many collaborations as possible – this is critical. Collaboration should happen not only across sectors, but also across countries. This would go back to the education institutions. Culture could be developed through education institutions and business ventures – where people meet, they collaborate. It is not easy to establish collaboration, but there should be an effort to cooperate, it will always bring a lot of benefits. Politicians should create platforms for cooperation. Collaboration is also connected to pride – people clash, it is psychological, but the more people get used to working together, the better it gets and this is how you build culture.*

**Construction:** *Innovation needs a certain critical mass of companies and technologies to boost innovation, so companies can benefit from each other. These companies could cooperate with universities and then develop the centres of excellence. Big core innovator/investor should become drivers of the innovation ecosystem, integrating smaller companies and universities into the value chain. In such situation, everyone will benefit and the big company, which has a capability to*

connect stakeholders, manage an innovation project/ecosystem, and take bigger risks, could drive innovation forward and build an ecosystem around itself. A small company or a start-up cannot do it. Such ecosystems work well in Finland: the government supported a creation of innovation ecosystems, which focused on R&D intensity and export. For example, for the development of battery technologies – you need a big investor, who would use it and connect smaller players.

**Financial and insurance activities:** We have to copy-paste from other places – learn their best practices and apply here. We are very passive in terms of commercialisation, due to weak connection between academic and business worlds. High-risk innovation financing is needed, as people are afraid to bear all risks and costs. This would help to push the ambition further. Currently, too much bureaucracy for high innovative financing. You apply for funding and then regret, because of bureaucracy. Capacity-building instruments are also important, as people create ideas, not machines. Plus, we need to work on our risk tolerance and culture of risk aversion. This is a must. The younger generation seems to be less risk-averse, but also less responsible.

**Information and communication:** There are specifics in each industry, but it is possible to find commercialisation opportunities in any industry. But Latvia needs to look at industries, where it has strongest capabilities, instead of listening to lobbying of specific companies. If people, natural resources, knowledge base are in a specific sector then this is a logical opportunity. What is left for the government is to create a helpful framework to allow all that creativity to flow. Innovation should happen in clusters, which stimulate collaborate, rather in silos, as it is now. Thus, innovation cluster development is critical, where several companies, research organisations and start-ups are coming together. The Latvian IT cluster tries to stimulate the IT industry development, but more can be done, as the IT can trigger transformation of multiple industries.

**Financial and insurance activities:** If we can get the education system right, the STEM education, it would hopefully breed or build the next generation of students, who can help with the whole innovation ecosystem. Education, human capital is critical for innovation.

**Financial and insurance activities:** Scale-up support is lacking. Supporting start-ups is a separate story. We need to invest in start-ups with high market potential. Good ideas breed in an innovation-healthy environment. We need more cluster-type instruments or effective platforms/organisations that foster collaboration among the innovation stakeholders.

**Electricity, gas, steam and air conditioning supply:** Latvia already has a national regulatory basis for Special Economic Zones (SEZs), with relevant provisions also at the EU level. SEZ could be a great innovation-driving instrument. Liepāja and Valmiera both have established SEZs that offer reduced tax rates and a more streamlined regulatory environment, supporting investment and creating synergies within those areas. To date, these zones have primarily been used to attract manufacturing investment.

**Education:** On innovation culture initiatives: this is probably the most important of the three for me, and it has been a thread running through this whole conversation. Latvia does not feel as willing to take risks as some of its close neighbours, or as ready to jump on opportunities and give things a chance. I think that mindset needs to be taught at a younger age. There are some genuinely good competitions and workshops, where young people can run their own businesses and experiment with innovation, and we have entered students in some of those. But I wonder whether we need to go further and embed innovation more deliberately in the school curriculum, so we are actually developing the next generation of entrepreneurs and people who think differently.

**Education:** Looking at the current education curriculum, even with the 2030 plans for Latvian state education, there is still very little in this area, partly because teachers are not yet prepared or motivated to teach innovation. That kind of thinking is hard to cultivate if it does not start young. There is also something broader in the culture that needs to shift. People here can be very quick to

*criticise and be negative about new things. Rail Baltica is a good example: yes, there have been problems, but when it is finished, it will be remarkable. Rather than focusing on what went wrong, it would make a real difference if people got behind the vision. The same goes for other achievements that deserve recognition rather than criticism. There needs to be a broader cultural shift in how people relate to trying things and the possibility of failing.*

**Education:** *On special innovation zones with preferential regulatory frameworks: the appeal is that they give people the space to try things and make mistakes in an environment that supports rather than penalises them. I have seen it work in other countries. Given the amount of unused office and building space in Latvia, you could create innovation zones in currently empty buildings, offering them rent-free to projects that want to innovate, with advisors and support on hand. Bringing creative minds from different industries into the same space is also part of the value, because cross-sector idea exchange is something that is often missing. There tends to be a silo mentality rather than a culture of bouncing ideas off people.*

**Other service activities:** *Demographics remain a central issue. A larger and more diverse talent base means more ideas, more perspectives, and better conditions for innovation. Diversity matters in practice because different backgrounds and viewpoints strengthen how companies think and develop solutions. The Latvian government needs to address demographic challenges, either through smart migration or other instruments – perhaps, several instruments are needed. People are a key instrument for innovation and for economy generally.*

**Other service activities:** *There also needs to be much greater clarity about what exactly the state wants to support, in which areas, and how that support will be implemented in practice. It is not enough to define priorities on paper. There must be dedicated people working on them every day. If innovation is seen as a priority, then resources need to be assigned to identify the most promising areas, understand what companies need, connect the right actors, and provide ongoing support. Without that, companies and startups end up spending their own time trying to navigate the system and find relevant support.*

**Other service activities:** *Continuous support for the academic environment is also important, together with much stronger promotion of innovation results coming from universities and research institutions. A lot is already happening there, but it is not visible enough.*

**Information and communication:** *There is a need to promote collaboration and increase funding to support cooperation between companies. The creation of regulatory sandboxes would allow companies to test new solutions in environments where they currently avoid taking risks.*

**Information and communication:** *If funding were available, the organisation would be willing to engage in collaborative formats involving multiple companies and contributing to ecosystem development.*

**Information and communication:** *A regional approach is also essential. The idea of a Baltic innovation corridor reflects the need to address innovation at the regional level, as the Baltic States currently lag behind countries such as Germany and France.*

**Transportation and storage:** *Science commercialisation and knowledge transfer is an essential instrument. The ship efficiency improvement project is a concrete illustration of how this works in practice. The research task came from the company, driven by its interest in reducing fuel consumption costs. Universities then developed models based on real operational data provided by the company. That data was crucial. For any meaningful innovation to happen, collaboration between industry and academic institutions is essential, and that collaboration requires industry to provide real problems and real data. There is an encouraging trend of researchers and lecturers*

*proactively approaching companies with proposals for what they could investigate, and the model works when both sides engage.*

**Transportation and storage:** *Public funding for research is also needed. The private sector engagement alone is insufficient to de-risk early-stage work, therefore public support for research is needed to allow models to be developed that can later be commercially applied.*

**Transportation and storage:** *The central concern is over-regulation. Sectors with the highest potential are currently being held back by bureaucratic barriers. Latvia lacks a sufficiently competitive and ambitious orientation, with too much emphasis placed on regulatory control rather than on positioning for regional and global competition.*

**Real estate activities:** *For sure, increased public funding for R&D&I would be very important. At the moment, the level of funding in Latvia is significantly lower than in the other Baltic countries, and this directly limits the development of new ideas and technologies. There is clear potential, for example, in cooperation with institutions like Riga Technical University, where new solutions are being developed, but without sufficient funding these opportunities are not fully realised.*

**Real estate activities:** *The support mechanisms for companies that innovate are missing. If a company invests in innovation, there are no meaningful tax benefits or incentives. This reduces motivation for businesses to engage more actively in innovation activities. In that sense, improving governance and regulation, especially by introducing supportive mechanisms such as tax incentives, would make a real difference.*

**Real estate activities:** *From the business perspective, the ability to scale innovation and link it to real market opportunities is also critical. At the moment, many companies operate with low margins and high tax burdens, which leaves limited capacity to invest in innovation. Without stronger support that helps translate research into practical, scalable solutions, including export-oriented opportunities, the overall impact remains limited.*

**Real estate activities:** *Overall, the policy instruments are important and they need to work together. More funding, better governance, and real incentives for businesses would create a much more effective innovation environment.*

**Human health and social work activities:** *Compliance requirements should be differentiated by company size. A small business should not be expected to carry the same administrative load as a large enterprise. Reducing this imbalance would immediately free up time and capacity that could be used for development and innovation.*

**Human health and social work activities:** *The regulatory mindset towards business needs to change. Companies should not be treated by default as potential violators that must constantly prove their innocence. A more trust-based and proportionate approach would create a healthier environment for entrepreneurship and experimentation.*

**Human health and social work activities:** *Public procurement should do more to support domestic innovation, where competitive local solutions exist. Too often, local capability is overlooked even when it offers clear value. Procurement can be an important tool for strengthening innovation uptake and helping new solutions reach the market.*

**Human health and social work activities:** *A broader issue is also political accountability. If decision-makers faced clearer consequences for long periods of inaction, there would be stronger pressure to address the structural barriers that continue to hold back innovation and investment.*

**Human health and social work activities:** Collaborative R&D and innovation funding through co-financed projects is useful, as is investment in technology infrastructure. But the issue that underpins everything else is the governance and regulation of secondary health data use. This kind of innovation depends on data, and without a clear legal framework, projects remain difficult to scale. A regulatory sandbox is also needed, so that companies and their partners can test solutions in a defined environment without facing the full burden of procurement rules already at the pilot stage. At the moment, even when a pilot has been validated in practice, there is often no clear path for it to move into wider public adoption. That gap between successful testing and actual scale-up remains a major obstacle. Support for startups and smaller innovation partners is also important. Small-scale early funding can make a real difference in helping them test and develop solutions that could later be implemented more broadly.

## Appendix 2. Quotes of the research community in the Baltics

To what extent is your organisation motivated to conduct applied research, R&D&I activities in collaboration with different types of innovation ecosystem actors (particularly with the private sector)? Why?

### *Quotes of respondents/interviewees from Estonia*

*In the research landscape, public universities and private research organisations operate according to fundamentally different logics.*

*In a public research or university setting, research is typically driven by a central idea or long-term scientific focus. Teams and partners align around this core direction, and researchers tend to stay within their established fields of expertise. The emphasis is on continuity, depth, and advancing knowledge within a defined domain. However, this also makes universities relatively slow and less flexible when responding to rapidly changing or highly specific external needs. This is why companies often complain that they cannot work with universities on R&D&I activities – two different worlds, two approaches, two goals in mind.*

*Public research organisations are focused on research, methodology and publications as a key output. Companies are focused on commercialisation, application/applicability, profit. By contrast, private research organisations are driven primarily by client demand. Their work begins with a concrete problem: how to help a specific client. Research is costly, therefore at times they need several companies/clients to have enough resources and to explore a problem in detail or to develop a concrete solution. The work of the private research organisations is similar to consultancies – they operate on a demand-basis, provide a follow-up support to companies, which many times is really important as companies do not have large research or data science teams. So, private research organisations can be much better partners for the companies. In contrast to the public research organisations, the private research institutes are focused on being financially healthy, commercially funded, therefore commercialisation or commercial activities are critical for them. Typically, around two-thirds of activities are commercially funded, while one-third is dedicated to scientific research and publications. Meaningful scientific questions often emerge directly from industry needs, therefore commercial work feeds into academic research.*

*Operating in a small market like Estonia adds another layer of complexity. Every activity must be carefully validated, and resources must be used efficiently. Private research organisations are not low-cost providers, and they cannot afford to tackle overly complex or unfocused problems without clear value. Their work is shaped by local demand, with most clients and partners coming from the domestic market. This results in relatively little overlap between different fields, as organisations specialise based on specific market needs.*

*The funding environment is essential for innovation. Around 5 years ago the Estonian government has launched the R&D&I funding programme for companies. This way the government supports companies in carrying out research and development activities. Companies are free to choose how they will implement these R&D&I activities. Few companies have internal R&D&I teams, especially if they want something complex and need laboratories and diverse expertise. Hence, most companies approach public and private research organisations. This certainly boosts R&D&I collaboration and activities generally. Of course, if companies want a fast, tailored solution they are more likely to approach a private research organisation. However, if they have a few years and solutions is related to fundamental science then they will prefer to collaborate with the public institutions. Ultimately, the difference in collaboration between public and private research organisations comes down to speed, flexibility, and orientation.*

*This Estonian R&D&I programme is super important, and I hope it will continue, as it really motivates companies to innovate.*

*The EU funding is super competitive. It plays a role and some research calls imply that we need a big consortium of different partners, but willingness to collaborate comes down to trust – if you trust the partner, can rely on him/her, then you will do it.*

*Our organisation collaborates only with the stakeholders in Estonia, we focus only on the local market. There is some demand, but maybe with time we will expand our activities.*

*We are required to do this. Within the university, collaboration with entrepreneurs and the private sector is an institutional obligation. A new European competitiveness framework was also just introduced to us, which seems to be pointing in the same direction for the future.*

*But beyond the requirement, I personally do collaborate with small entrepreneurs and have been doing so for several years. They come with practical questions, for example about the hygrothermal properties of their products, and as a researcher I am interested in those questions too. We work together. There is no financial exchange between us specifically, but our students get their thesis work from it and I get publications. At the level of the whole university, there are larger formal agreements in place. I am speaking only about my own situation.*

*We are motivated and we are looking for partners. We are ready to cooperate, but it is not always easy to find a joint topic or issue that everyone wants to work on together. We have different knowledge, maybe different needs and such things. In our region, the companies are ready to meet and to discuss. But if we say, okay, let us move forward and start working on something, then it is not so easy anymore. And if they have to pay for something, then you have to prepare very clearly what you are planning to do, what kind of problem you will solve, and so on. In our case it is project-based. Companies need us to help them solve very practical problems that they have today, and they need quick results.*

*We do research for industrial partners, and it is one of our main sources of funding, besides EU and national research projects. In that sense, our motivation to do applied research is different than of most research organisations. We treat industrial partners as our customers. There is national innovation funding available for companies, the funding is provided to minimise innovation risks. We approach local companies to help them do these innovation projects. Collected data through projects can be used in our research projects. Many PhD students use this data as well and then publish papers. I think it is a win-win situation.*

*Most researchers value basic research, as it is embedded in a university culture. Publications is a key metric for researchers, therefore, of course, when we try to encourage researchers to engage with industry it is not easy. When we have new people/researchers joining our organisation, the biggest struggle is cultural. We need to explain to them why it is important to do collaborative projects with industry, why we should listen to the needs of industry. Shifting the thinking process is hard, it takes a really long time. We also struggle how to make companies and scientists work together. The values of professional researchers are contrary to business priorities – business wants something quickly and it can be 80% perfect, while scientists want to triple-check something, they focus so much on methodology. It is also interesting to see that at times researchers don't perceive that what they do with industry is a real science. I think there is a bit of arrogance, if you ask me, scientists feel that real science is something abstract, something so theoretical and unimaginable, something what is far from normal life.*

#### ***Quotes of respondents/interviewees from Latvia***

*The key systemic challenge remains the same - research organisations are primarily evaluated based on academic outputs such as publications, attracted funding, and the number of PhD students. As a result, communication and engagement with society and industry are not prioritized. Many research institutions in Latvia receive relatively low evaluations due to limited collaboration*

*with the economic sector, prompting ongoing discussions on how to improve this aspect. But I don't think a practical solution will be found until the evaluation system of researchers will change. Our organization focuses on applied research, particularly in the field of environmental studies. Funding plays an important role in stimulating applied research projects and enabling their development. Without funding we would not be able to do any applied research and projects, as it is more resource-intensive.*

*Given that we focus on research of the Baltic Sea, the organization's main partners are located within this region. We share the same natural ecosystem. Working together with other regional, European partners makes it easier to address complex environmental challenges. We work with companies, but mostly local – Latvian. This is largely due to the nature of the work, such as analysing water quality, which requires access to local materials and data. Among the most important industry partners are wind park companies.*

*Company size matters for collaboration. At least in our experience, large companies are more likely to have a clear request and resources to collaborate, while small companies sometimes come with unclear requests and needs, and it takes time to understand their expectations. Occasionally, such small companies approach the organization with the hope that it will help to get funding on their behalf or simply write project proposals for them. These companies often perceive research and funding applications as bureaucratic processes and are not always interested in being active partners. However, it is important for the private companies to understand that we are not a public administration, we do not have capacity to simply deal with bureaucracy, we are here to help to do research.*

*To ensure effectiveness of collaboration with the private sector, it should be a long-term relationship building and commitment to partnership. It takes time to develop trust, to understand needs, to understand communication styles and approaches. Trust and a human factor are critical for cooperation. Having dedicated individuals on both sides who maintain regular communication and develop relationships over the years significantly improves collaboration outcomes. There are a few companies in our network, with whom we have long-term collaboration and we understand and trust each other, we can share resources, we help each other, when needed. Once a foreign company expressed willingness to collaborate with us. Initially, there was some scepticism on our side about the potential for cooperation. However, through regular communication—both messaging and calls—the relationship gradually developed. Differences in communication styles became apparent, as expectations varied between individuals and cultures. For instance, some partners expect quick responses and may disengage if communication is delayed. Over time, effective communication was established, leading to a strong and productive collaboration, including joint project development. This experience highlights that communication style and interpersonal skills play a crucial role in successful partnerships. In the Latvian context, trust-building can take longer, compared to other countries, where researchers may be more open and quicker to engage. Our cautious approach can sometimes slow down collaboration. Therefore, qualities such as charisma, diplomacy, and strong communication skills are essential for success of joint projects. Good communicators are a key, a good communicator is a person, who understands and can manage different people and working styles, as flexibility is key in building and maintaining effective partnerships.*

*What is important to note about collaboration – it is also connected to competition and risks. Researchers collect data to publish findings. If someone else has access to the same data and manages to extract, publish findings faster than you, your work will lose the value. The researchers' world is weird and it is essential to keep "secrets" to yourself, otherwise, some else will take it before you. So, we are not great collaborators – too many risks, too much uncertainty, too much trouble for making collaboration work. Open data initiatives, to some extent, are a beautiful myth. Really important and valuable data will not be disclosed. Some so-called "data-rubbish" could be easily given access to, but not the really good data that can still be utilised.*

*Very motivated. I myself have been a partner on joint research projects. There is full openness to this. These research activities don't feel like something unwanted. Maybe not everything works out, but the openness is definitely there.*

*The motivation is more of a combination, both internal and external. Internally there are various measures that motivate people to write grants and develop ideas, along with support mechanisms.*

*On the external side, for example, research grants currently place quite a heavy emphasis on applied research, much more so than on fundamental science. So right now there are relevant grant calls we are planning around.*

*In terms of recent examples, the biotech project competition is currently popular. Colleagues are quite active there and developing their ideas. There have also been post-doctoral grants that were very much in the applied direction. There is also short-term sector funding and project competitions that require direct researcher involvement. As for direct collaboration with regulators, I believe it exists, but I would rather not name specifics.*

*Some researchers do applied research, but it does not seem appealing for all. It is more complex, of course. Collaboration with the private sector can be beneficial, but researchers do not always have the capacity/time and flexibility to respond to urgent industry's requests, proposals and needs.*

*Researchers are already combining multiple roles – we teach, participate in multiple research projects, conferences, do publications, interviews etc. So, our ability to collaborate and respond might be limited. And most researchers are too much focused on publications, as it is a key KPI.*

*The private sector and other stakeholders want to collaborate on R&D&I activities, but usually do not have the resources to do it - money is a key issue. The EU fund allocation to the private sector is limited. Similarly, for researchers – we need to report on every hour worked on a specific research project and explain our activities.*

*Collaboration with other countries at times is affected by a lack of solid scientific reputation. It is not about reputation of a concrete scientist, but a general reputation of a country or of Baltics, maybe even of Eastern Europe. I don't think we have built a strong international reputation as scientists, innovators. So, it might affect the number of partnerships.*

*Biophot programme is a great example how innovation can take place. We need more of such programmes, which will help to promote innovation and industry-research collaboration across different fields.*

*Researchers have the capacity to do innovation, but very few actually do it. Researchers' assessment is conducted based on a number of publications, therefore there are no motivating mechanisms. Technology transfer knowledge is also limited – how to do it, where to start. You need a professional team that can help a researcher. Otherwise, the innovation idea will remain just an idea. I am not sure our TTOs know how to maximise effectiveness and impact of their work.*

*Large companies typically come to research organisations and ask for data or for specific expertise. In addition, they need infrastructure. This is where we could collaborate more, but again it will depend on willingness of a specific scientist – is he/she interested to share data? Does he/she want to help a company? Will he/she give access to the infrastructure? This depends on a person.*

*When a company or an investor is interested in the work of a scientist, they want to create a product and ask about its potential characteristics, about production processes to define a possible price, costs. Researchers try to escape such discussions and anything related to commercialisation. The argument is the following - we are researchers, instead of laboratory product developers. We only do research and leave it there. Such attitude obviously does not help to build collaboration or to commercialise an idea. I am not saying that all researchers, scientists are like this, but it is common, as they only focus on publications.*

*Researchers have two paths – publish or patent. The overall trend is an academic direction, which results in becoming an expert with publications. Outcome is a publication. The alternative path is patent-based. This is an active learning path, which requires an ability to be resourceful, to collaborate with industry, to think outside the box and be willing to risk. I would say that currently there are only about 5% of researchers that have chosen the alternative path and consistency focus on patents, instead of publications. There is a definitely a need to review which path the researchers should take, as creation of publications is not useful if they are not communicated outside the researchers' community, if there is no attempt to be useful to the industry and solve current problems. This is not the problem only in Latvia or in the Baltics, it is a more global problem and policymakers try to avoid to look in this direction.*

*Starting from a university, researches should be encouraged to think about an impact of their work and not only on the academic world, but also on industry/economy. Besides just promoting applied research and commercialisation, real support is needed for researchers – how to create an IP, patent, how IP will be divided if I commercialise? Many researchers don't know how to solve these practical issues. Lastly, personal motivation is needed – what is my benefit, what will happen if I manage to commercialise? People need to be motivated.*

*Most difficult is to close the gap between TRL 3 and TRL 7. You need regulation, financial resources, infrastructure to do it etc. This is resource-intensive, therefore it is not easy to solve it. However, there is a good practice in Latvia – Biophot programme. It is about TRL growth, from TRL3 upwards. The programme focuses on specific challenges, connects numerous organisations and has produced good results. So, it is definitely possible to close the TRL gap, but it needs people, who are willing to take the initiative and lead the change, in collaboration with industry. Would be great to have more of these initiatives.*

*Our research always happens in collaboration with the private sector, therefore we always look for collaboration partners. Predominantly, we collaborate with the EU countries, but key partners are not decided based on geography, but because of the expert networks and necessary infrastructure.*

*The government tries to encourage commercialisation, but if I am not mistaken, overall the Ministry of Economy has allocated 17 mln Eur for all research organisations for commercialisation purposes (to conduct a proof of concept). You realise that this amount is small. Potential commercialization projects go through two phases – first, an industrial panel listens to the pitch, and then science credibility check.*

*We have daily collaboration with the private companies, but the research collaboration depends on company capacity. We are on company boards, they are on our boards to build successful collaboration. We have our competence, we inform them on what we can do. But the decision where is a business case is their. We will not intervene, as they risk with money, they make the business decision. Overall, I would describe our collaborative approach, as successful. We share the IP, we trust each other, we make long-term plans. It is strongly embedded in how our organisation works.*

### ***Quotes of respondents/interviewees from Lithuania***

*Actually, we are really motivated and keen on this, and increasingly so. Despite the fact that we are a budget-funded institute, a significant part of our revenue now comes from programmes we apply to, such as European Union Horizon calls and cross-border cooperation programmes which operate more at a practical level. We also have projects in those frameworks. So, from that position, we are more and more interested in finding investment alongside the activities we normally carry out. Because once you are involved in different projects or consortiums, you serve the societal needs much better, you have better access to real data, you can model real situations*

*and propose concrete decisions for society. And we have good relations with policymakers, so the results of our work also feed into policy briefs and real solutions for different legislative or strategic processes. This collaboration has been going on for nearly a decade now. It is nine years since we started our first project within this collaborative framework, and it now makes up an increasingly large share of our institute's overall revenue.*

*Our institution has a motivation system where researchers who lead internationally recognised projects can receive direct financial support from the institution itself. So, if you are a project leader, you can submit your documents to the institution and receive a grant from them.*

*For finding external partners, we use the EU platform, where we describe what we can do and what we are looking for, and apply from there.*

*On the private sector side, yes, there are contacts as well. Every researcher is interested in making such connections. For myself, I work in plant physiology with controlled environment growing and LED lighting. Our research is connected to vertical farming and controlled environment greenhouses. So, personally I am in contact with various growers, greenhouse growers, vertical farm operators. We have a very large vertical farming company here and we are in quite close contact with them. It is personal contacts. I think that is the most effective way.*

*To do applied research is a requirement of the Ministry of Education in Lithuania. There are clear funding streams and commercialisation is something that we must do. The researchers are motivated by finances - there is a scheme, where the funds that are acquired could be converted into a financial bonus of scientists or into investments in infrastructure. This is quite motivating, but, of course, not for all researchers. Some researchers have a different profile, and applied research is not their thing.*

*We try to adapt to the private sector needs. We get funding either as public support, or we do research as a service on a commercial basis. For public research organisations, there is a competition with the private research institutions or consultancies. In the end, it is about showing specific expertise – if you have it, you won. As a public institution, we go for quality. It is important for us to ensure our good reputation.*

*Big companies have their own R&D departments, therefore, overall, I would say that the private sector itself does not have a high interest or demand in the research support of universities. They come to us if they lack competence. Overall, I would not describe our collaborate as intense. Everyone has its own focus. We research and teach. They private sector does business. If our interests match, we could do things together, but I don't think it is a must every time. The extent of R&D&I activities depends heavily on individual faculties. Some are focused on applied research, while others remain purely academic. When project funding is limited, collaboration with the private sector often does not make sense - not enough money to do something decent and to split it. As a result, we get one more paper, which is likely to have little added value.*

*In the faculty of engineering, we do real stuff. What is unfair – the amount of project funding we get is same as in, say, humanities department. But humanities department does not need expensive equipment, technologies for research. Their research costs less, but, of course, they are interested to have the same amount of funding.*

*Industry demand for scientific research in Lithuania is relatively weak and tends to focus on incremental improvements rather on true innovation. So, process innovation is more common and researchers, sadly, cannot embed their knowledge. Companies look for small improvements, they want innovations that can be scaled. I understand that companies might need to take risk and transform their business model, change their reputation, if they pursue an innovative path. But this means that while companies can participate in projects, they rarely push for breakthrough innovations. There will be no radical innovation under such conditions, there is no hunger for*

*innovation. This has contributed to stagnation in science and innovation across the Baltic States, although progress is now being made.*

*Science is not primary for innovation. It is industry. Science should listen to the demands of industry and address them, instead of inventing challenges and suggesting solutions in theoretical papers. If industry does not request, we cannot do anything. But the collaboration between science and industry is weak.*

*The university has been an active developer of applied innovations as well as an educational institution. Around 2015-16 a strategic visit to MIT in Boston anchored a new direction: moving from purely theoretical research toward practical, industry-facing science. The model was inspired by MIT's media lab approach -- collaborative innovation development with industry as a core institutional function.*

*The current strategy includes mandatory performance targets for each faculty and each research institute: every unit is required to generate a defined volume of contracted research services and research work with industry, covering both private companies and state-funded institutions. This is evaluated annually. The performance framework operates at two levels simultaneously: the university's own internal strategy mandates industry engagement, and a state-level university evaluation mechanism rewards institutions based on income generated from industrial research contracts. The interviewee also sits on the Estonian Board of Science evaluation board, giving her a comparative view of how similar incentive systems function across the Baltics.*

Please elaborate on how your organisation stimulates commercialisation of research.

#### ***Quotes of respondents/interviewees from Estonia***

*Commercialisation is a norm, this is something what should be explained to the researchers. Research for the sake of research is not the desired outcome. We need to educate researchers about it, cultivate to get out of their world and to collaborate with the private sector, otherwise, they get stuck in their little world. Often there are companies that do not know about the development of some ideas, useful research findings, which they could use to improve their services or processes. As a result, we waste the potential. This is very sad.*

*Commercialisation is something that is being forced through funding requirements. We recently completed a funding application where commercialisation was a mandatory part of the evaluation criteria. That is a new thing. Until now, getting any funding from a company was already considered a success. But there are new conditions being introduced where this part is required. I think this is an EU-wide direction, not just specific to our organisation.*

*Yes, of course, it is a goal of the university. The university is pushing us to commercialise our solutions. But it is not easy. We have developed some solutions and right now we are at the stage where we have prototypes, and we are looking for who needs them and what kind of problem we can help solve. Moving from a lab solution to production — I do not have much experience with that, but we have solutions that we are trying to move forward with.*

*It is a complex issue. In some cases, maybe there is no funding, because to understand who is our client, who needs our solution, we need to carry out market research and understand who our target groups are. But for this we do not have resources or maybe enough knowledge. That is maybe one reason.*

*But another thing we are facing here is that companies or municipalities — they say this is maybe interesting, this is useful, but today it is already arranged differently, it is working. Why do they have to change something? They have contracts and so on. In words they say they need innovation,*

*but in practical cases maybe they are not ready to change something. And maybe there are some risks, because you do not know the results, and maybe that is not something they want to take on.*

*It is really difficult for researchers to work with deadlines. For most of them, research is a creative and unpredictable exploration process, therefore they get angry if we put a deadline and try to formulate it as a project with clear KPIs and milestones. The resistance is incredible. We do a lot of training and connect project-oriented, experienced researchers with the right business attitude with the new researchers, who join our organisation. For the last two years, we have hired a lot of non-Estonians. We were able to onboard people from the Netherlands, France, the US. These people even with research background come with the mentality that commercialisation, collaboration with the private sector and deadlines are a good thing. I was so surprised to see it. I've never seen such mentality in the Baltics. I think there is something fundamental how we think about research, how we think about projects, or about application of knowledge and collaboration. We tend to be too academic and theoretical in our approach, while I must say that when it comes to the quality of research, I think Estonia and Baltics generally have to be proud of. But, as I said, everything comes with a cost.*

*We do a lot of discussions and trainings – formal and informal, to foster a commercialisation mentality. We talk about IP, business processes, how to develop a value proposition, and how to get feedback. The feedback look is extremely important, but, I must say, it is a real struggle from researchers to receive feedback from non-academics... They feel like a non-professional is commenting on their work and it is inappropriate. It takes time to make people feel comfortable with a change.*

*What really helps in fostering new culture at our organisation is when we talk about the impact of what we do on the world – we promote the fact that what we do should have an impact. We also talk about the importance of commercialisation, about success stories on how an idea was turned into a product. But yes, it is still not easy. The research or science system overall is not designed for having an impact or thinking about an impact. It is all about research publications.*

### ***Quotes of respondents/interviewees from Latvia***

*Commercialisation of research outcomes is currently rare within the organization. It is often perceived as a complex process, which discourages active engagement. There is also uncertainty about how to identify and connect with companies that would be interested in research findings and capable of bringing them to market. Finding mutually beneficial (“win-win”) collaboration models between research institutions and companies is difficult and time-consuming. Identifying opportunities for commercialisation requires sustained effort and investment.*

*We worked on one marine infrastructure project, which aimed to facilitate access to specific type of data. The intention was to enable automated data processing, which created a need for suitable IT solutions. However, finding partners who could both understand the technical requirements and contribute effectively proved challenging. This highlights difficulties in establishing mutual understanding in cross-sector collaborations and do commercialisation of research.*

*Some EU-funded projects explicitly require collaboration with the private sector and include an international dimension. Despite this, there are limited internal incentives to pursue commercialisation. It is not systematically encouraged, assessed, or rewarded within the organization, which further reduces motivation to engage in such activities. Researchers don't know how to commercialise, we are differently wired. Even if we are taught basic business principles, we are very far from a real business world. I think to make real collaboration and commercialisation work, we need to grow side by side and learn to understand each other. The current education system does not encourage it.*

*Efforts have been made to build relationships with companies by involving them in our networks, presenting research findings, and conducting pilot tests in collaboration with industry partners. However, there have been relatively few requests for such pilot initiatives. Business does not want to waste their time, if there is not clear visible benefit in the near future. And we don't know whether what we have discovered can be commercialised.*

*There is a recognition that the private sector demand and interest to collaborate and commercialise could potentially be higher if these opportunities were more actively promoted, communicated. At present, the organization does not widely publicize its capabilities, partly due to limited resources. Expanding activities related to commercialisation and private sector collaboration would require additional staff dedicated to these tasks. There should be a dedicated person or a team responsible for commercialisation, it could significantly improve outcomes. Such a role would help build a stronger culture of collaboration with industry and create more opportunities to translate research into practical applications.*

*I think the key component that most research organisations are missing is the culture of commercialisation. Right now, we are not encouraged to commercialise, we don't know how to do it, we don't know who and how to involve to do it. It is not part of researchers' DNA. We definitely want to be helpful, don't misunderstand me, but we don't think that our job is to commercialise. We can research, but there should be someone next to us to tell us that it can be commercialised.*

*Otherwise, we stop after doing the research. I know it sounds a bit like we are kids, who need parents to look after them, but to some extent it is so. Researchers tend to live in their imaginary world of ideas, we have pride, we fight for status – who is a professor, who is a junior researcher, therefore when we encounter businessmen or politicians, we are out of place, we shrink and prefer to come back to our comfort zone.*

*During this interview I've realised that actually we could do more in terms of commercialisation.*

*We would definitely get requests from the private sector. We simply do not popularise what we have, what we are doing. But I am sure a lot of what we do could be useful to companies. There are a lot of untapped opportunities. For instance, currently, we do research into underground waters. We explore some unique and previously inaccessible natural sites. Companies have shown interest in going there and maybe bringing tourists there or getting some materials, and such initiatives could be developed further. However, financial constraints remain a significant barrier.*

*Companies are often reluctant to invest in activities where profitability is uncertain, and research organisations cannot guarantee immediate financial returns. Additionally, companies typically lack flexible funding that could be allocated to exploratory R&D&I activities.*

*Despite challenges, there are clear opportunities for developing innovative products and solutions based on resources from the Baltic Sea. Unlocking this potential will require stronger collaboration, better communication, and more targeted support for commercialisation and innovation activities.*

*First of all, there is the culture itself. We have academic freedom, but if you choose the commercialisation path, it is very much supported. Patents are counted as a scientific output. We have an innovation centre that helps scientists specifically with these topics. I think that is an essential place. Students also have the opportunity to get support for their ideas there. It's hard to say with full confidence. There are probably more mechanisms than I am fully aware of, but what is currently visible is that there are spinoffs at the university, which are treated as a kind of undertaking by the university.*

*To facilitate commercialisation of research, we collaborate with companies, we've created our own incubator and organise public lectures. We encourage researchers to become innovators and we*

*invite companies to present/share their problems, so we could find ways to address them. There are a lot of efforts made to stimulate commercialisation.*

*We have created an innovation centre at our institution, which provides administrative support to researchers related to innovation. In essence, it helps with all documentation processes associated with technology transfer, innovation policy, IP rights etc. Similar structures exist in other Latvian research institutions. They are very helpful.*

*We try to commercialise research to produce socio-economic benefits – this is the culture that we've built in our organisation. Every colleague/employee knows that we do research to solve a problem, to see its application in an industry. There is no alternative, in our view. If we do something, we should always think about its application and potential commercialisation. Otherwise, why do we do it? We don't want to only produce endless papers.*

### **Quotes of respondents/interviewees from Lithuania**

*I would say we are still beginners in this field of research commercialisation. The situation has been that there was not much external stimulation for it before, but from the inside we started to feel that when you propose something applicable and with real impact, you find yourself in a better position in the overall market. That is what drove us to develop the Living Lab approach, which is essentially a participatory innovation-building approach. Last year we established a living laboratory as a branch of our institute's Innovation Transfer Centre. The main activity of this lab is to commercialise the research produced by our researchers. We are really at the initial stage. But last year we succeeded in certifying the lab under the European Network of Living Labs, so we now meet particular quality requirements and assessments. That certification is helping us apply for more projects and broaden the approach. The process is quite different from the usual forms of scientific output, which are typically a PhD thesis, a monograph, or a journal article. We have developed a certified process, originally designed by our living laboratory, and we are now starting to apply it by using AI at the initial stage to test the possible terms of application of different solutions. After that we apply a six-step process and then meet stakeholders in phases to examine what the real possibilities are for commercialising our research results.*

*It depends on the lab. We have different levels within the institution. There is plant genetics, plant physiology, plant protection, and then biochemistry and technology. The biochemistry and technology lab is basically designed for product development. They have a lot of contacts and they are already making prototypes. We, as plant physiologists, are more on the side of generating knowledge. But that knowledge should be commercialised, which is why we are contacting various growers, trying to understand how we can apply what we know and what we can offer them. Basically, we are selling advisory services for growing, particularly when collaborating with vertical farm operators. They lack some knowledge in this area and that is where we contribute. But it is not only agronomy and food. Our work is also relevant to pharmacy and cosmetics. Another direction is plant extracts. We can suggest substrates that are enriched with specific targeted metabolites useful for those industries. So we are not limited to only food and agronomy, there is also collaboration in those other directions.*

*The university also has a spin-off that handles some of this collaboration on the extract side.*

*Around 6-7 year ago we had a Cambridge training on commercialisation – this was a great practice. As a result, we've adopted some guidelines, forms for technology registration. We can categorise an invention and register it properly. Then it goes to patenting. We had training on entrepreneurship for researchers. I think it really helps.*

*TTO – it is our innovation department. We communicate with the scientists on inventions and look for a market fit. The benefit for scientists – they get 50% of licensing fees. In our TTO, our experts we know quite well what is done in the institute and each TTO expert has own specialisation – they know perfectly what is being done in the institute. We do proactive networking with the private*

*sector, try to sell our ideas, mention technologies that could be relevant for a field. I think good TTOs are extremely relevant for research institutions.*

*Sometimes the industry also comes to us. One of the most prolific and active departments is a laser department – they know the industry players and at times even develop solutions together.*

*Real commercialisation is possible only when you have a good dialogue with industry. If not, we sort of fake commercialisation. Researchers sort of do steps towards commercialisation, but it does not really affect the market. Industry knows what the market needs and can scale it. So, all university efforts in terms of commercialisation are a bit pathetic.*

*There is a gap between academic research and industry needs. Academic work often operates at Technology Readiness Level (TRL) 3, while industry requires solutions closer to TRL 7. Bridging this gap is a major challenge. In countries like Germany, this is addressed through applied research institutions, which work like open innovation centres (e.g. Fraunhofer-type models), where academia and industry collaborate, test and develop technologies, supported by dedicated engineering teams and infrastructure. Similar models exist in France and Finland, where institutions employ engineers and focus on product development rather than purely academic research. The Baltic States largely lack such structures.*

*The university has a dedicated innovation centre that serves as the interface between research output and market needs. The centre communicates and promotes the university's research areas and innovation outputs to industry, and conversely directs companies with specific problems to the relevant departments. A Centre for Artificial Intelligence, a newer initiative, works across universities and with industry to develop and apply AI solutions, including in student and industry education.*

*The environmental engineering institute has been particularly active since 1998, when it launched a cleaner production and sustainable innovation programme funded partly with support from the Nordic Environmental Finance Corporation (NEFCO), which provided low-interest loans to businesses to implement cleaner innovations. This created a three-way model combining scientific expertise, identified industry need, and bank financing. Businesses had a real financial mechanism to act on the solutions proposed. The interviewee cited this as a model worth replicating, science and market need are not sufficient without accessible financing to bridge the gap to implementation.*

What are the key research/scientific/technological achievements of your organisation during the last 3-5 years? Please share some examples, good practices.

#### ***Quotes of respondents/interviewees from Estonia***

*It is hard to point out to Estonia's key technological achievements during the last 3-5 years. We should be proud of something, but I am not sure what it is. Weird...*

*The worlds are very layered, everyone lives in their own bubble. Those who want to learn about innovation in a specific area, I guess they could go to a specific conference. But there is definitely a lot of silos, isolation.*

*Start-ups and companies promote what they do, as they have commercial interests. But research organisations have a limited focus on communication and, perhaps, it is not something what the society wants to know. Although if we want a more innovative country, the media should share news about it. Media definitely has an educative role, but not sure they are aware of it. Currently, media seems like a bad news or rumour spreading mechanism, rather informing and educating*

*I can only speak about our small branch, not the full university which has over 2,000 employees. Within our unit, we have conducted field technical research and some comparative studies. My own*

*work has focused on the hygrothermal properties of fine plasters. Those are the main outputs I can point to from our part.*

*I can speak about our innovation centre because we have developed a few things. For example, we have developed sensors to measure whether waste bins are full or not, and we also developed software so you can see online what is going on in your waste bins. This is one solution we are trying to commercialise.*

*Another solution is more specific to our region. We developed an AI-based solution to measure the calorific value of oil shale. Simply said, we take pictures of the oil shale and according to the colour we can measure what the calorific value is. You cannot see the differences with your eye, but if you use specific cameras or sensors, there are different colours and you can measure it. This is not maybe so popular anymore because oil shale is not so environmentally friendly, but the solution helps our industries to be more efficient. If you know the calorific value online, you can manage your production processes in real time. Today they do analysis in the lab — they take a sample, carry out the analysis, and only later they know what the calorific value was. Then they try to predict. We have tested this in our industries and they are interested, but they have not yet committed to our solution. They gave us good feedback and we have to make some changes, but we are trying to move forward with it. We are also working on a solution for drivers of big vehicles — how to spot and warn the driver about wild animals on the road. The solution warns drivers with a light signal: green or yellow when the animal is not so close to the road, and red when it is very close. Right now this is at a very early phase. But in this case we have a company that is very interested and they are pushing us forward, which is maybe good for us because we have a client, we have a partner who needs the solution.*

*And then we also work on digitalisation plans for companies. We describe the current situation and provide some guidance on how to move forward, what kind of changes they need to make and what funding options might be available. And in some companies we also help implement digitalisation projects. We work more like a consultant, because companies say there are so many different solutions on the market and they do not know which one is best for them — they need an independent opinion.*

*It is hard to point to specific scientific/technological achievements of Estonia or of our organisation. I am not sure how to measure what is a big achievement, but I think we have not done enough, to be honest. I think we are improving what we do, we try to be more useful, but we are still in the process of learning what and how we should do, how we could be useful to the economy, to society. So, it is hard for me to point to specific things.*

#### ***Quotes of respondents/interviewees from Latvia***

*We've developed numerous ecosystem-related analytical tools. For example, one tool helps to see and assess what resources the local nature gives us. It will help to analyse multiple dimensions, including the quality of soil and other organisms. This tool has been developed in collaboration with the Finnish colleagues. We are planning to add the impact of human activities on nature. This should be shown with connections and we visible on the website. This tool will help to see what Latvia's nature riches are, what functions they provide to the ecosystem, and classifies different activities. I hope one day the Ministry of Climate will promote it and people will learn about it. I know that the Bank of Latvia is also interested in the topic of sustainability, and I hope that they will also use our tools and findings.*

*That's hard for me to answer off the top of my head. There were certainly some research projects during Covid that were related to public health, but to give specifics I would need to look through some files and lists.*

*In general, I think the biggest achievements are in the health field. That is the main specialisation of the institution. I would also mention sports research as one area. Someone closer to the actual*

*projects could give a more precise account. I hope that if there is another round of interviews at the university, they will be able to describe this better than I can.*

*Latvia has developed many good, internationally recognised cosmetics and pharma products. Our IT sector and IT innovations in both public and private sectors are really great. We should be proud of where we are. Some start-ups have scaled in the US, as they could access to funding there, but we still should be proud that we've launched them here. For example, digital anatomy – it is in the US right now. Printify, Printful, Mikrotik and many, many others. We have many achievements in the optics sector. I know companies whose annual turnover is much larger than of Grindex, but nobody talks about them.*

*LIAA should tell stories to the society on what are our scientific achievements. They should advertise to ensure that people are aware of the success cases. I think the society does not really know what Latvia should be proud of in terms of science, technology, innovation. It could be a nice campaign that could attract not only foreign investment, but also motivate young people to choose STEM and to stay in Latvia.*

*We have a lot of innovations for the medical sector, which later were commercialised.*

*When I think about the scientific achievements, I immediately think about the weight-loss drug, developed by Mutule Ilga, about the spin-off company that created a spider silk technology, about another spin-off Cellbox, which focuses on organ chips, which imitates specific organs. There are so many nice scientific achievements. Of course, I know more about what happens in my field, but I hear a lot of good stories and news.*

#### ***Quotes of respondents/interviewees from Lithuania***

*During the last five years, we have been merged into a larger research centre and the overall political direction shifted toward increasing both the quality and quantity of scientific output from our institutes. So, there has been quite an exponential increase. We expanded our relations with foreign scholars and with international publishers. For example, we started publishing authored books with internationally recognised academic publishers, which was quite a significant achievement for us, because before we really only had local-level publications as our scientific output.*

*There have also been achievements at the individual level. Several scholars from our institute received a national award for advancement in the field of economics, covering research implemented over the last ten years across different topics, all aligned both with policy needs and the scientific interests of the country. So, the main achievements are the increase of high-level, high-impact publications, the move toward cross-border research relationships, and the growing ability to attract international scholars to work in our teams, also thanks to Horizon projects and other EU-funded programmes.*

*The biggest ongoing project is the creation of competency centres. We received 8 million euros of funding for this. The project started about half a year ago and the work involves creating research teams, attracting leading researchers, and building laboratories focused on specific thematic problems. We are collaborating with an international university partner on this. It is not a purely Lithuanian project.*

*Another example comes from the biochemistry and technology laboratory within one of the institutes. They are not working only in the agronomic field. One of the products they have developed is a device for infants, filled with biologically active compounds, which protects the baby's mouth from Candida pathogen. Babies often get white spots in the mouth from this and the device works against that. So that is a concrete product development example.*

*The spinoff company Litilit (fibreoptics company) is doing really well. We've developed a couple of products for defence application, such as speed detection systems, and we know they have a good market potential. Our advancements in the quantum field are also quite promising. We've developed organ chips and many other things.*

*The Lithuanian television from time to time highlights some scientific thematic and shows national science-related initiatives. However, I would say that there is room for improvement. Overall, society is not well-aware what is happening in the science field.*

*The university has nine faculties and ten research institutes, generating patents across multiple technological fields each year. Key areas of recent achievement include AI applications, energy efficiency technologies, innovations in material science including hologram-based materials, biotechnology technologies, digital twins, and circular construction. In construction materials, processes have been developed for incorporating industrial waste streams into new building and packaging materials. Food science is another high-performing area, including development of new food products, new polymers, and new textile materials.*

*Patent applications have been filed for air pollution filter materials. The institution's breadth, spanning hard sciences, engineering, materials, biological sciences, and food science, means that significant achievements exist across virtually every faculty. The environmental engineering institute has a particular track record in sustainability strategies and circular economy technologies, with over 20 years of international consulting experience feeding into the research agenda.*

How would you describe Latvia's/Lithuania's/Estonia's innovation ecosystem – extent of collaboration, its current status, development potential? How to stimulate the country's innovation ecosystem development?

#### ***Quotes of respondents/interviewees from Estonia***

*The development of the innovation ecosystem in Estonia is not fast enough. However, if you compare what Estonia had 20 years ago, it is much better now. R&D&I activities are more intense across all sectors and organisations. But I feel we are reaching a saturation curve. The global competition needs more innovation to stay relevant.*

*I am afraid that startups with high potential will leave Estonia and move to a larger market with more financial support, like the US.*

*AI has disrupted the market; we see it very clearly. Several companies and research organisations started to review what and how they do. Now they are not sure where to invest, hire or fire people, how the AI will change their market and what is our future. There is confusion and people are looking for answers. It is difficult to innovate in a situation of global uncertainty. Companies and organisations are very cautious, as they risk their capital. Therefore, the government definitely needs to support these efforts. Without innovation there will be no progress.*

*And failure is a norm; we should accept it.*

*There are many companies that are foreign investors, their headquarters is not in Estonia. Hence, they do not think much about Estonia. They do not really see Estonia as a place for R&D&I. There are IT companies that innovate, they have been draining IT talent from other industries. But the pool of talent is not endless. This is something what the policymakers should be mindful of. If you want innovation, you need talent and a lot of talent. Estonia is not a place to attract people from Southern Europe – it is cold and dark.*

*Estonian digital framework is very testbed like. If you can handle the legal burden and you have data, then it is easy to propose new solutions. But yes, administrative burden is real, it definitely discourages innovation.*

*In the past, Estonia made a huge effort to attract several innovation-focused companies, but Germany offered a very generous public support and, as a result, they left.*

*Startups impact on the economy is not as large, as we hope for. Large companies and SMEs are key economic drivers, therefore more attention, more support should be given for them to innovate, to scale, to export.*

*Export support is very limited in Estonia, but companies need a scale.*

*I think without a good innovation ecosystem we would not be such a successful innovative country. Estonia has over ten unicorn startups, all doing their own innovations, and I think most of them are somehow connected to research organisations as well. Universities are actively asking how they can help. Just last week, for example, the city organisations spent an entire day communicating with universities, explaining what exactly they would benefit from if the ecosystem expanded to include, for example, the national startup support programme, different startup accelerators, a NATO innovation accelerator which is now very relevant in the defence sector, and other clusters. All of these are forming the innovation ecosystem together with research organisations such as universities and specialised knowledge centres. The most active ones right now are AI, defence, and health tech. I think it is a very active ecosystem. And looking ahead, the specialisations are clearly pointing in the same directions. AI, defence, and health tech are guiding where we are heading. We are moving towards deeper and deeper specialisation in those particular sectors.*

*I find this difficult to answer well. My involvement in the broader ecosystem has been limited. What I do believe is that connecting research to the real world is important, because problems in practice are often completely different from what you imagine sitting at your desk. The ecosystem gives you that grounding. If you want to engage with it, the opportunity is there. But there is always room for improvement.*

*I do not know too much about this ecosystem, but I know that it exists and there are various activities and events carried out. We have funding organisations that support small companies and organise such activities. But I have not been too involved in that.*

*Our contacts with companies are good. More would be better, but it is good. The challenge is to find new companies. The existing partners are good, but new companies are harder to reach, and they are not so open. For us as a university, one goal is to develop stronger cooperation with companies, to take research into practical life. But to get new companies who are ready to work together with universities — that is not so easy.*

*I feel that there are two parallel systems in Estonia – one is encouraging innovation and the other is doing everything to stop innovation. On the one hand, the government is speaking about innovation, there are some funding programmes for innovation, we have many start-ups and institutions that support them, we position ourselves as a digital, innovative nation. On the other hand, there are so many challenges for innovators. For example, regulation-wise, we are affected by food and feed regulations – these sectors are highly regulated. When we look at product development the regulation is not clear cut. We communicate a lot with the local authorities. Regulators are there to find our faults, it seems that there is a strong belief that if you innovate you put someone in danger, you pose risks, you create troubles. Instead of working with us and becoming our partners, who help us to develop new solutions, products, the regulator does everything to question why we do what we do, where are possible risks etc. I have so many stories of when we got totally discouraged to do innovation. Innovators are sort of punished for doing innovation. I don't know how to explain to them – we are not troublemakers, we want to improve something or create new.*

*In the area of biotechnology, we try to develop proprietary technologies. Key challenge is the absolute uncertainty from the regulator. The regulation timeline is so unpredictable that it discourages innovation. For companies, for investors it is a nightmare. You need to have a lot of production already, you need investment to implement a project, but the regulator might end their assessment and issue a permission in 5 years. It could take between 2 years to 7 years before we sort out all papers. I think it is not OK and, of course, small companies don't have resources and cannot take such risks. For large companies it is also a challenge, so something fundamentally should change about regulator's attitude, processes and trust.*

*When we apply for EFSA (European Food and Safety Authority), the process is so complex, and the interface is so unfriendly that we need to hire a previous EFSA consultant/employee to complete the application process for us. We provide a lot of documentation and then EFSA has 6 months to look at what could go wrong. The process length is not clear. When we asked what we could improve, they did not tell us. I've spoken with a lot of investors – they do some innovation in Japan – it is easier with the regulation there. Singapore and USA have streamlined the process and, as a result, start-ups are going there. There was a study recently, it showed that many start-ups were born in Europe but were developed and capitalised in Singapore and the US, because of so many regulations. Cosmetics and pharmaceutical industries are also suffering a lot. I don't know when Europe and the Estonian government realise that with such regulatory processes, we will not have any innovation.*

*I think Estonia has made all steps to launch innovation fully. We have accelerators, start-ups, angel investors, different mechanisms for scaling innovation, we gradually build a culture of innovation. More export support is needed though. There is the innovation managers club for enterprises – it helps to network; to share experiences, we tackle different challenges together.*

*We have a strong start-ups community. Estonian start-up mafia is a community of successful start-ups that are helping other companies. They are cultivating innovation and risk-taking. It affects the culture. This is the direct result of the Skype guys – they became millionaires overnight and they brought the know-how and started investing in Estonia. Then "Wise" and other companies, they had good connections in San Francisco and brought this knowledge here. The people with experience and networks have put a solid start-up foundation here. I would not say that Estonians are very patriotic and therefore they invest or re-invest in Estonia, but I think it is related to our desire to be part of Northern Europe. The government vision in early 90s was to become a Nordic country, not a European country. This is where we've adopted a social responsibility, solidarity model. People feel that they belong to the Nordics and try to adopt these values. I think this is the key why the Skype guys started this movement.*

*The government created a very good foundation for business and innovation – I mean, the government is liberal, it enables the market and tries not to hinder things. Politicians are listening to start-ups; there is an open dialogue. It is important that we all are promoting our nation – the presidents, ministers, everyone is saying that Estonia is agile, digital, we are a test bed for new services. It is important, I know it has worked in our favour to attract investment and people.*

*The real challenge to innovation is how the local authorities interpreted regulation – national or European. Nobody knows how to do it right, what kind of rules are applied. Different agencies use different interpretation. Estonia tries to mitigate bureaucracy, but it is a slow process.*

*Enterprise Estonia is providing grants for innovation. This is good, but we receive so many incompetents and very specific questions from Enterprise Estonia – they want to understand what and why are we trying to do, but they are not scientists or businessmen. They are neither, but they don't know how to best allocate money, who should receive it. This creates friction. The application process to receive a grant is really long – for researchers and for companies it takes a really long time and there is no clear timeline on when we will get a response. So, grant money in Estonia does not have a good prestige, because it is so bureaucratic and lengthy process. Large companies prefer to take a bank loan, as bureaucracy is not worth it. They don't want the auditors to come in,*

*accountants to check every step, or to develop specific IT solutions that would ensure compliance with regulations. So, regulation really kills innovation. Maybe not in big companies, but definitely for small ones.*

*For business and innovation to grow, it would be great if we had direct flight connections. Many start-ups complain that a long travel discourages international partners to go to Estonia. The government is not doing anything there, as it is expensive.*

*Enterprise Estonia has a new strategy. They are putting 12 mln. Eur into a programme that will integrate universities with industries. They also onboarded two Estonian accelerators to connect them to start-ups. In my view, these are very good steps that are taken to improve commercialisation of research by creating start-ups and spin-offs.*

*Compared to 2014, a lot has improved – private R&D&I investments have increased. The key factor is the following – ICT, defence (linked to ICT), manufacturing industries started to invest in R&D&I. Until now, the focus has been more on industrial design and process innovation, but they start to gradually realise that if you want to export more, you need something unique.*

### ***Quotes of respondents/interviewees from Latvia***

*The role and perceived value of research, particularly in the environmental field, remains a challenge. Collaboration with the private sector is relatively weak, as many companies tend to focus primarily on their core business activities. Environmental and sustainability-related requirements are sometimes seen as an additional burden rather than an opportunity. Although certain companies clearly have an impact on the environment, they are not always willing to engage in consultation or research-based collaboration.*

*At the same time, there are companies that recognize the importance of natural resources, show a willingness to invest in activities related to research, development, and innovation (R&D&I) to support environmental protection. However, it is not always clear to what extent they actively engage in such efforts. Much depends on awareness and understanding of the value that research can provide.*

*There is still a broader perception in Latvia that environmental protection is less urgent because the country is already considered “green,” which can reduce motivation to engage in research partnerships.*

*I see progress in how private companies collaborate with research institutions – both in terms of intensity and quality of collaboration. Progress is definitely visible, but it is still not optimal, we could do so much more together. Companies gradually start to realise that researchers do important work, not all the time, but when it is applied, it can be very valuable.*

*International research partnerships also have not been growing. Other stakeholders, outside Baltics, value our expertise, look for data and seek collaboration.*

*The policymakers in Latvia do not seem to utilise available data, when drafting their strategies. This highlights a difference in attitudes toward research and its role in decision-making. Overall, I would say that researchers do not have a strong voice in Latvia, we do not feel powerful. Not sure about other Baltic States, but I feel that it is similar there as well.*

*We are not bringing a lot of money, like companies, therefore it seems that we are not really so important. It is a pity. We have data and expertise; we could help to develop evidence-based policies. Although not sure politicians are really looking forward to it.*

*The institute itself produces high-quality applied research, adhering to both EU and national standards and working closely with responsible ministries. Its work is highly regarded, particularly in areas such as territorial planning. The institute has accumulated significant amounts of data; however, a key challenge lies in its utilisation.*

*Both public institutions and private sector actors often lack the capacity, time, or understanding needed to effectively use this data. As a result, there is sometimes a perception that the institute's work is not fully needed or appreciated, and that environmental organisations may even be seen as obstacles rather than partners.*

*In the society, there is also a broader issue of limited understanding of what research organisations actually do. To a large extent, it is the fault of research organisations themselves. In the past, our communication and dissemination activities were often seen as unnecessary or a poor use of project funding.*

*This perspective has changed, and the importance of communication is now better recognized. The institute has even hired a communication specialist to strengthen these efforts.*

*At the level of goodwill toward science, things are generally fine, but in terms of funding availability they are definitely insufficient. The project competitions that exist are good, but the chance of actually receiving funding is very low. For example, our fundamental large-scale project competition receives around 600 applications. Less than 10% receive funding, but more than half pass the quality threshold, meaning those projects are assessed by foreign experts as good enough to potentially be supported. That is a problem in itself.*

*Another issue is that as soon as a new competition appears, like the biotech one, it is very good and encouraging, but in my opinion it has too great an influence on our own research direction. Long-term, that is not healthy, because we are not developing our own policy.*

*We are constantly adapting to various competitions, their rules, and foreign experts. We become a critical mass working on something, and then we carve out the segments needed for whatever competition is relevant.*

*In terms of funding, I do not see major improvements from year to year when it comes to state support. More funding would, of course, provide a better-maintained foundation for research. And if we also had additional instruments for developing innovation more directly, or for bringing in collaborative partners more easily, things would be easier.*

*Right now, I see myself becoming a kind of representative of niche sectors, which may not be good for society as a whole. There is a lack of mid-level researchers who can plan and develop their work normally. There may currently be certain areas where innovation can develop well, but others may not exist in the future, and we will not have the competence for them because we will not have maintained those areas.*

*We need human resources to do innovation, to develop science. Let's think how many PhD students we have and who will stay in Latvia. If we look at STEM student number – it is an issue. We work with children/students to encourage them to choose STEM studies. The economy cannot be developed if we only have artists, psychologists and marketing specialists. The bigger question is why do students not choose STEM? I think Latvia and Baltics generally suffer from a lack of reputation – reputation that we do science here, that we can do breakthrough innovation. The system collapsed in the 90s, when manufacturing stopped working and many skilled people shifted to other industries (particularly, services – to buy and sell). There is an assumption that as an engineer you will not be able to have a decent living/salary. What could help? Companies, such as Microtics, sponsor or contribute to research/science more than the government.*

*At the moment, if our university wants to sell a technology, it should go to an open auction. The process is extremely bureaucratic and complex. All documentation is prepared in Latvian, which immediately cancels participation of foreign investors. We cannot have a discussion with potential buyers of a technology about how much we could sell it for. It is considered illegal.*

*Such process is extremely inefficient. To overcome this barrier, we create a website for a specific technology to increase transparency, and it allows us to discuss a technology with potential buyers/investors.*

*In my view, besides regulation, there are two key challenges - a lack of financial resources and a lack of culture of innovation. Industry wants an immediate return on investment, but it should also understand that innovation is an experiment. Therefore, risk tolerance, patience is needed. Innovation needs funding, I am not sure we have sufficient access to capital.*

*Latvia and Baltics generally have made so many steps to develop their economies, to foster the development of science and innovation. The historical path was not an easy one. It is sad that the science base was almost destroyed following the collapse of the Soviet Union and so many scientists could not find jobs. Now the Baltics are rebuilding, but hopefully – building back better. I am proud of what the countries have achieved, and I am proud that we speak so openly about their challenges, especially Latvians – we are great at critical thinking with too much critical remarks and sarcasm.*

*My feeling is that Latvia has all the ingredients for success - many great researchers/scientists, infrastructure for innovation etc., but there is a lack of synergies between researchers with other players, which would help to develop an innovation ecosystem. There is no national STI and start-up strategy, the public funding for STI has not been significant, and I don't think the policymakers understand how to connect the world of science with the business world. Scientists do not communicate well the challenges they face; therefore the process of innovation is sort of a mystery. There is hope that it will happen somehow either in the business world or in the science world. Things do happen, but their pace of innovation could be much faster with a bit of help from the policymakers.*

*There are discussions between the policymakers and universities. For instance, what will be the return on investment? The return from publications is not large, of course. The university management is also not business-oriented, as institutions are also assessed, based on the number of research publications, students etc. The fundamental challenge is the motivation to do applied research, to do innovation, to collaborate with the private sector.*

*The secondary data law is being stuck somewhere in the Parliament (if I am correct), which limits the ability of researchers to use the data. I hope this issue will be solved soon.*

*There are many good practices in Latvia – sandboxes to test ideas, opportunities for students to pitch innovative ideas and then they get help to execute them. Things are happening. Largest universities collaborate with each other – this is also good. So, a lot of good initiatives, but probably their scale could be increased, and more synergies are needed for collaboration.*

*I am not an against, but let's be honest. Many researchers are not very young, they will reach the pension age soon and it is almost impossible to expect something spectacular from them. They will not change their working and research style. If they did not use to collaborate with companies, they will not do it now. But therefore, it would be essential to transform the science system now – we need new researchers, who will be motivated to do applied research in collaboration with industry.*

*The system is overregulated – it is a disease; we focus too much on process instead of result. Some regulations have not been approved; some are in an uncertain state. The country does not have a clear innovation strategy, and nobody feels responsible for innovation, therefore things happen, but in an uncertain way. I don't think there is an understanding of the direction we are going towards.*

*Key challenge right now is to commercialise IP, which has been produced by researchers, using the public resources. There are complex auctions, inability to communicate information about a finding/output. If it is not TRL 4 or 5, we cannot prove to the business that there is a business case. In other words, there is a mess, caused by regulations. Besides that, some things are clearly*

*overregulated. They make the lives of researchers really difficult, and I don't think someone cares to fix it.*

*For research institutions, there are different commercialization ways: start-up development, license or sale. Latvian companies, even large ones, have a limited capacity to absorb innovation. Hence, Latvia's research findings are being sold outside Latvia. I mean, foreign companies buy project outputs and turn them into real products. It is sad that we export our research findings/ideas, but there is not enough demand locally, not enough resources, and most importantly, not enough ambition to create a really innovative product. This is one of the reasons why we do not hear much about Latvian innovation.*

*Latvia has scientific talent, but we would certainly benefit from more. We have been recruiting talent from abroad, but the process for researchers from the third countries is getting worse. It will take half a year before we sort out all documents. We should not be limited to people who only live in Latvia. People from India, China, Pakistan - they are talented, they want to get to the EU, and we are an attractive destination for these people. We should facilitate migration process for them. We should use the situation to our advantage. If we close the doors to a foreign talent, how can we justify it?*

*I think the major problem in Latvia is the general culture of risk aversion. If you fail, you are a loser. If you take risks, you are putting yourself in trouble. This is very toxic. I know that young people are slightly less risk-averse, but we need to radically change the attitude towards innovation, towards life generally.*

#### **Quotes of respondents/interviewees from Lithuania**

*I can share this mostly from personal experience. About nine years ago we were invited by Finnish partners to join a consortium where we first really understood how innovation ecosystems should be built, developed, and brought to strong, mature units in society. So, we took those first steps about a decade ago. Now there is still quite a large gap, I would say, between the technological innovation ecosystems and those in social sciences and humanities. The technological side is clearly the most advanced, and that is where the best achievements are visible. Lithuania has a lot of inventions and real advancement in areas like the laser industry and other technological fields. In social sciences and humanities there is progress too, but the levels are different. But compared to the view from external partners, they say we have already moved from being beginners in innovation to actively developing innovators, and that applies in social sciences as well. And if you look at where the Baltic states stand compared to others who were previously in the eastern or Soviet part of the world, we have really stepped forward in many fields.*

*In terms of how we practically build these ecosystems, we use what is called the quadruple helix approach, which we learned from our Scandinavian partners. It starts with building connections, personal ones, finding specific contacts in state institutions, business, NGOs, and local communities. We bring them to a round table, present what we want to develop, gather feedback, and keep working until we reach expected results. And to make the ecosystem sustainable, we stay connected with those people after individual projects end. We keep them in our network and use their experiences and connections when building future products or solutions. We also modify the ecosystem depending on the topic, but we try to keep participants close and make them feel that their voices are heard and translated into a language that policymakers can understand and businesses can benefit from.*

*In the agro sector, one area of active innovation is fertilisation. Our lab is working with nanoparticles, and we are trying to propose nanoparticle-based solutions for fertilisation. That is one current innovation direction. On the ecosystem more broadly, it is mainly state-sponsored. Involving private business is quite a challenge. Sometimes companies contact us or we propose solutions to them, but getting to actual collaboration from that point is not easy. Private sector*

*companies generally do not have funding to dedicate to research collaboration. It mainly happens through joint projects. There are some small private contracts, but they are small, around 10,000 to 20,000 euros.*

*How active the ecosystem depends a lot on the area. Our research centre comes from three different institutions, and they each have different dynamics. In the agriculture institute, there is very high collaboration with growers, because the main crops are cereals and they work on this very closely. In the forestry institute, there is high collaboration with the relevant ministry. So, it really depends on which institute or field you are in.*

*Entrepreneurship in Lithuania is contributing to the innovation boost. During the last years, the industrial players try to focus on innovating from their own R&D departments but also attracting other partners and working together to create a greater value.*

*Overall, I think Lithuania has a good quality of high-tech research and skilled scientists. Lithuania's infrastructure for deeptech, chemistry and physics is quite good. But, of course, we should not deny the challenges. There are a few, but I would not want to highlight them. Building good reputation of a country is important.*

*The European project funding does not include funding for repair and spare parts. This is especially relevant for infrastructure projects. There should be paragraphs for such things – maintenance, improvements. In addition, it would be good to have a greater freedom for researchers and to focus more on applied research. The issue with applied research is that it is riskier. In addition, to create innovation there is a need to remove strict rules for academic publishing. The process will not move faster if the researchers will still be predominantly focused on publishing papers.*

*The Baltics have destroyed their science base since regaining independence. In the 1990s almost all the manufacturing companies got closed, demolished. Public funding for science was minimal. Scientists, engineers were left without jobs. Being a scientist meant being a dreamer and being poor. They had two options – work for a salary that is extremely low, but remain faithful to the profession, or to switch to another profession. Most people left the profession; some even left the country. It is understandable, there were simply not enough jobs. Now suddenly the government starts to scream about the importance of STEM. But we lost the generation of engineers, of physicists, of chemists. We have destroyed our science base. Still the salaries of, for instance, engineers are not high enough. It makes more sense to go into law, business than to choose a career in the STEM fields. This links back to why Lithuania has little manufacturing. There are no people, who can develop it. Engineers have similar salaries as baristas.*

*Evaluation systems of researchers in Lithuania are based primarily on scientific publications. This is accepted at the ministerial level. Bureaucrats still want papers; I guess in that sense some researchers and bureaucrats have a lot in common. Bureaucrats, politicians don't understand the difference. This creates a divide within academia: some researchers focus on publishing papers, while others aim to engage in practical, industry-oriented work. To some extent, both types of researchers have value, but the current system tends to reward publications over real-world impact. Writing papers is often the safer path – you don't need to take a risky path and try to make a real change, find partners, test technology etc. Until the evaluation system of researchers does not change, we will not have real science.*

*What is even more unfair – applied, innovative or risky work is more likely to go unrecognised, it is not something what will give you a professor's status etc. But if you publish papers, then the career path is much clearer and more successful. This disconnect is not always understood by policymakers, therefore until now the evaluation system has not been corrected. To help researchers*

*in the medical, engineering or other STEM-related departments to get recognition for their work they create departmental awards. This, to some extent, helps to celebrate success among peers.*

*At present, the research system exists for the sake of researchers. They have a job; they have a nice hobby that the society is willing to pay for. The value for the economy and society is minimal. The researchers are not incentivised to do real research that will bring a change to the world. So, we have an artificial system of research. To improve the system, reforms are needed. Evaluation criteria should shift from prioritising publications to recognising real-world impact and applied outcomes. This would require strong political will. Funding should be directed toward institutions and faculties capable of delivering applied research, and a closer alignment with industry needs should be encouraged.*

*Not all students need to pursue university education. Currently, we have almost 80% of children going to higher education. This is not realistic. There is an oversupply of university graduates relative to labour market demand. Technical and applied training pathways should be strengthened.*

*In addition, such professionals as engineers remain undervalued and underutilised. This discourages talent from entering or staying in technical fields.*

*It is important to realise that STEM scientists cannot fake their findings, cannot manipulate data, because they need to produce something real, something what actually works. So, they cannot be bribed. This is in contrast to some social scientists, who can easily manipulate data, which then can be used by politicians. What is the outcome of this – STEM scientists do not have power, while social scientists are in power positions.*

*Women in science and engineering is a serious topic. There is a strong promotion for girls to go into science. There are some talented girls, who can make a career, but for many, many girls it is not a suitable career. Their talent is somewhere else. I see how much they struggle in STEM classes, they study harder than boys, but their talent, their skills do not fit what STEM needs. And then they suffer – they end up working in a completely different field with a science degree and this is my question – why did we brainwash girls to go into science? It is not for everyone. People should do what is in line with their talent.*

*Lithuania's innovation ecosystem has genuine strengths in specific niches. Semiconductor technology is globally recognised, Brolis Semiconductors is an internationally known example. Laser technology is world-class and represents a significant area of research concentration.*

*Military technologies, drones, laser systems, military textiles, have become an increasingly prioritised area in the current geopolitical context. Circular economy and construction materials optimisation represent a growing field. Energy is an area of significant potential, including solar panel production, smart grids, offshore wind, and gas technologies.*

*Geographic concentration is the ecosystem's most significant structural weakness. The interviewee visited 26 Lithuanian municipalities over approximately 18 months as part of a green municipality network analysis and observed dramatically unequal innovation capacity between urban and remote areas. Small and medium businesses in remote regions are poorly served by state support and financing mechanisms, procedures are complicated, possibilities are unclear, and communication from state institutions does not reach them effectively. This pattern, innovation concentrated in capital cities and major centres, thin capacity elsewhere, characterises Latvia and Estonia as well.*

*Structural improvements in Lithuania include the Kaunas-Vilnius axis: improved highway and rail connections between the two cities have created a competitive dynamic between the two main technical universities that drives both institutions. Infrastructure improvements in Klaipeda have also expanded the innovation geography. Brownfield investments by larger companies in*

*previously abandoned industrial sites in remote regions are beginning to create positive spillover effects. However, the fundamental challenge of building innovation capacity in municipalities outside the main centres remains unresolved.*

How would you assess the quality of support of R&D&I-focused organisations (e.g., clusters, incubators, technology transfer offices)? Why?

#### ***Quotes of respondents/interviewees from Estonia***

*There are few R&D&I focused organisations that are actually effective and we see their results, but many other organisations are simply symbolic support – some networking events, some coffee/tea, some information exchange, but not real support, which would result in innovation.*

*I think the willingness is definitely there. Research organisations really want to provide support. Of course, I can see a gap between what they want to do and what is actually needed. But they are moving towards business. They are hiring people specifically to bridge the business side and the research side. So, the trend is clearly towards a better understanding of the needs of entrepreneurs and companies. And the R&D institutions are not hindering development; they are genuinely trying to do their best.*

*Academia and business are traditionally very different, but they are moving closer to each other. Towards practical use, I mean. There will always be some gap, but it is no longer a situation where academia argues one thing and business argues another and they just talk past each other. That confrontation is definitely gone. The gap is closing.*

*I do not know too much about this. We are mainly working within our own university. We have an entrepreneurship department and they help us, they run programmes to raise our understanding of entrepreneurship, and if we have any issues or problems, we can discuss with them. But maybe it is difficult for me to assess the general situation because I am not so involved with the broader ecosystem.*

*Not all our R&D&I organisations are effective, let's be honest. I think many organisations don't know what to do besides stimulating networking or using EU funding for some short-term initiatives. But there are also good accelerators, incubators that are really helpful to start-ups. I would say the government should better support a few key organisations than spread money across hundreds of small organisations, which really cannot be effective – they don't have resources, they cannot scale services, solutions. I would vote for quality instead of quantity.*

#### ***Quotes of respondents/interviewees from Latvia***

*We have an innovation centre with competent people who deal with these matters. So, when scientists reach a certain stage and want to try to transfer something, whether it's a commercialised project result or something else, there are definitely capable people who make that process go smoothly.*

*I also noticed something when attending a recent lecture where an investor was speaking about these topics. I felt a bit uncomfortable, because the message was essentially that I need to become a bit of an entrepreneur myself. But that is not what I want to do. I want to do science. As scientists, maybe we should not be pushed too hard in that direction.*

*I think that most scientists want to do science and leave the rest to specialists. Having consultants or specialists involved from the beginning of a project through to implementation is the right approach, because scientists do not naturally think in those categories. The support is definitely needed, but I do not have direct stories to draw on, so I cannot say concretely how well it works.*

*The key point is learning to separate competencies. We should not expect scientists to go straight from laboratory work to producing a product on a store shelf. Many already know how to navigate this, but I see that it is sometimes expected, and that may not be right.*

*Latvia has many R&D&I-focused institutions, perhaps too many. I am not sure how useful all of them are. It would be better if we have a few, but really good ones. I know that some incubators provide good support for the student start-up creation, but there are no mature incubators for researchers. There should be a clear difference between the two, as the type of help they need is different.*

*In our university incubator, we provide a full range of services, support, offer a different type of expertise. It is easy to get it, there is one email address, and you will get help easily, we will try to help in addressing all kind of requests.*

*A challenge that should be mentioned is related to the IP. If something has been developed within a university – IP belongs to the university. But if a university wants to offer it to the private sector, there is a problem. There should be a public auction, and process is not well thought-through.*

*Effectiveness of organisations depends on leadership. If you have a leader who cares and who is competent, everything will work as it should. The human factor is key.*

### **Quotes of respondents/interviewees from Lithuania**

*As social scientists, we have built very good connections with the national research council, and that relationship has been really important in building connections with different stakeholders. That kind of state support is of top importance for us.*

*We also have good relations with government institutions. For instance, some colleagues say they cannot easily knock on the door of a ministry or get a message through to them, but for us it is the opposite. We have good working relations with several relevant ministries. So, state support is really central.*

*On the business side, we normally collaborate with business representative associations and business-linked structures rather than approaching companies directly. Though sometimes, for a specific project, we do contact larger companies directly because we need them in our ecosystem. But usually, we go through the associative structures first and then find direct contact points from there.*

*It is not a fixed structure. It moves and changes constantly according to the needs, and that adaptability is actually what makes it work.*

*We have a food cluster connected to our institution. A few years ago, it received a bronze medal for its activity. What they do is bring together people from business and from research to generate common ideas, think through what is useful for both sides, and from that discussion and collaboration, projects emerge.*

*We also have an open access centre that was opened maybe 10 or 15 years ago, where small and medium-sized companies can come and test things at a small scale before adapting to larger production. It is not just the facility they offer, but also the knowledge. The collaboration goes from the beginning through to the final product.*

*Overall, it is good, but I think at every step something could be improved. When you start working on something, you always find something to improve. But the overall assessment is positive.*

*The quality of support of R&D&I organisations depends on an institution. We have our own incubator, we established it 8 years ago, as we felt that start-ups do not get enough support elsewhere and it is easier for our researchers to get support here – in the institute. Some start-ups that are not from our institute also come to enjoy our services. It is a great place for networking and for creating value.*

*The overall assessment of R&D&I support organisations is mixed. A key structural problem is ministerial fragmentation: almost every ministry manages its own separate funding stream, making it effectively impossible to pool resources across ministries for a single large, national-scale*

*initiative. The result is multiple small parallel sandboxes rather than coordinated, joint support programmes.*

*A concrete example: approximately four years ago, a competition for the establishment of an innovation hub resulted in two competing hubs receiving divided support rather than one well-resourced national hub. Industries seeking innovation support face confusion about which ministry or mechanism to approach, and duplication of working groups is common, the same group appearing simultaneously across three different ministerial processes. Instead of combining funding, topics, and expertise into something nationally significant, resources are fragmented into marginal contributions. This silo mentality is a genuinely significant barrier to scaling innovation support to the level required.*

Could you please elaborate why you have selected [the following – depending on a survey response] 3 industries with the highest innovation potential in Latvia/Lithuania/Estonia?

### ***Quotes of respondents/interviewees from Estonia***

*There are some advantages of doing business and innovating in Estonia, but innovation is very industry specific. For example, Estonia is a great place for casino software, as there are an IT industry and talent for this kind of software development. So, innovation opportunities are industry specific.*

*Technologies are critical for innovation these days. Technologies power innovation and more so data. Most current innovations are data-driven. If you have data, you will have a service or a product, or at least a process innovation. Data is critical, we live in a data economy, data century.*

*No data – limited innovation potential.*

*Technologies can transform any industries, but I would want to see innovation across several industries – agriculture, forestry, fishing, manufacturing, construction, energy, IT, defence, public administration. It is possible, just need to create clusters of these industries and fund their activities.*

*The question on the return of investment is important. It depends on a case-by-case. There are innovations that are critical for the society (agriculture, energy etc.) – this is where more public support would be needed.*

*AI and defence, I would say those two are for certain. For the third, it is probably health tech or cybersecurity.*

*On AI, I mean practical applications, not chatbots or light consumer tools. In Estonia we already have companies that have been working in this space for over twenty years, starting from what was just machine learning back then and developing all the way to proper language models. Among startups, we are now seeing a lot of very specific, practical AI applications. Identity verification was one of the early ones. Now there is quite a lot of generative AI with genuinely specialised use cases.*

*On defence, we are in the same position as Latvia, holding the eastern flank. A couple of years ago defence innovation was something you could think about if you wanted to be involved. Now it is not optional. It is about ensuring safety, including the safety of our own citizens. We are still at the beginning really, but drone defence systems and protection of critical digital infrastructure are clearly the key directions.*

*On cybersecurity, if that counts as its own sector, Estonia is genuinely among the best in the world at this. The national cybersecurity authority is highly capable, a NATO innovation accelerator is based here, an EU cybersecurity agency is also operating here, and there are quite a lot of cybersecurity startups active in this space. Everything is related to IT now and so cyber security sits at the core of defence. We can either work with drone systems or protect our own and NATO systems. That is the defence sector for us.*

*Actually, I would now put cybersecurity above health tech as the third priority. So: AI, defence, and cybersecurity. I have not thought through this carefully, but that would be my honest updated view.*

*I can really only speak confidently about the construction and building sector. I think prefabricated building elements, particularly for insulation and renovation, have significant potential. The reason is that this type of production could be highly automated. IT tools, digital planning tools, and similar technologies are all applicable to fabrication in this area. It is not yet widely adopted but the potential is clear.*

*Beyond my own field, I would add energy production and information technology. For energy production, the key driver is the need for energy independence and resilience. Circular economy aspects are part of this too, though that is developing more slowly. For IT, the focus should be on automation and technology integration. It is important and increasingly necessary.*

*We are mainly working with manufacturing companies and in our region, there are quite a lot of them. I know that they are actively using industrial robots, automation, and digitalisation solutions.*

*But there is still quite a long way to go because the potential is much higher.*

*Information and communication are also a very active industry in Estonia and I think it can continue to grow. Young people are also interested in this field.*

*For scientific and technical activities, maybe I thought that if you use high-level solutions or scientific-level solutions, this has very high potential. I see what different institutions in our university are doing and there is quite high potential to develop scientifically high-level solutions.*

*Maybe I was thinking more about our own work here.*

*I've selected industries, where we have expertise. But I think that each research organisation should contribute to specific industries to make them more competitive, innovative. I think this is our responsibility. But, as I said earlier, it is still a long way to go, and the evaluation system of researchers and their mentality about the purpose of their work and collaboration with industry should fundamentally change.*

### **Quotes of respondents/interviewees from Latvia**

*Latvia is rich in natural resources, therefore we should use it and use it more wisely – not just shipping abroad raw materials. Plus, the climate change is creating new challenges for agriculture and forestry. Our soil is relatively soft, which affects water quality and ecosystems. While we cannot return to the practices of natural resource management of 100 years ago, new methods are needed and we could be competitive there. We do some good research in this area. With the right approach, we can make resource use more efficient, economical, and innovative.*

*In the field of IT, virtual infrastructure, data, and data systems play a crucial role. Data can drive innovation across multiple industries, enabling deeper research and better decision-making.*

*However, access to data remains a complex issue that needs to be addressed.*

*The arts sector has a large innovation potential. Actually, we collaborate a lot with different arts-related companies and organisations through exhibitions and creative projects. Materials, such as plastic can be transformed and reused, contributing both to artistic expression and research. We've built some valuable synergies across theatre, concerts, and exhibitions, helping to promote sustainability and recycling to a wider audience.*

*Innovation in education is essential. Improving the quality of education and training is a priority, and collaboration with students—such as involving them in laboratory work—helps bridge theory and practice. Overall, the education process and the education system should be adapted to modern circumstances and needs.*

*In the health sector, research into algae and genetic materials has promising potential. These natural resources could support the development of new health-related products, highlighting the importance of environmentally focused innovation. Overall, I believe the environment-related and health-related sectors have a great potential and could work in synergies.*

*Agriculture and forestry, I don't know those sectors in depth, but I see them as our core resources that need to be managed wisely. Research is definitely needed there, so it's not just about raw output. The aim should be to add as much value as possible through research.*

*Education, not just in the sense of teaching students, but making education a genuine export capacity. My institution does this well. We have significant reach per student even compared to larger countries like Germany. There is a niche where we can, in a sense, trade in education. Manufacturing similarly, doing increasingly advanced things, research-based, with smarter technologies.*

*These may be industries where one can try to achieve something without requiring billions in investment.*

*To some extent, investment opportunities depend on what is the government strategy – where it plans to invest and what policies it will put in place. There is no point to invest in industries and to innovate in fields, where there are no people, no expertise. People are a critical resource, therefore before making a strategy, I would suggest to the government to check where we have knowledge, capacity, market interest.*

*Biopharma has a huge potential in Latvia. We have many great researchers, publications and ideas, large companies, professional institutions that could be of help.*

*We do a lot of innovation related to the defence industry. In that sense, it is actually dual use. There are several large research organisations in Latvia that are collaborating and helping each other, therefore I am sure Latvia is well-positioned to contribute to defence innovation.*

*I know how much interesting research findings we have in different areas, therefore it is really difficult to select industries, which could benefit from them. I think if you have a smart and collaborative researcher on one side and you have an ambitious and wise businessperson on the other, success is guaranteed, regardless of industry.*

*Overall, I think Latvia is well-positioned to present itself as an innovator in the IT, bioeconomy, medical/pharma, agriculture and forestry sectors. We have many smart people, we have good companies, natural resources. We just need a bit of coordination, good policymaking and smart investments to give proper direction or to help a bit.*

### ***Quotes of respondents/interviewees from Lithuania***

*Agriculture was selected because we have worked extensively on evaluating and assessing the adoption of precision agriculture techniques and technologies. We have seen a huge shift from traditional agricultural activity toward very modern, very digital agriculture. As one of our senior colleagues puts it, twenty years ago driving to a farmers' gathering meant having one of the biggest vehicles in the car park, and now you can hardly find your car among all the large modern machinery. Everything became very digital, very large-scale, and very precise. That is the core argument for agriculture.*

*Transportation and storage was selected because from our field of work, we have observed major improvements in how different transport flows and logistics systems are being managed. We also have a PhD candidate currently developing a thesis in this area. We consider it one of the key directions where innovation is moving now.*

*Information and communication was selected because we are closely connected to research on digital infrastructure change across the country, including in the regions. What we notice is that Lithuania is genuinely ahead compared to much of the rest of Europe in terms of broadband connectivity and internet infrastructure. When we sit with colleagues in cross-border projects, they are still discussing problems we solved twenty years ago. So we consider Lithuania a well-digitalised and well-connected country in the European context, and that creates the base for further innovation in this field.*

*The primary reason is that these fields are within our competency. Agriculture and forestry and fishing is what we do. And in all of our collaborations, we are working across different directions, including medicine and human health. In all projects and collaborations, we specifically need to*

*have a social impact. So, my choices were based on that, on where our knowledge would have an impact on society.*

*On the technology side, when looking at global challenges like water saving and energy saving, we are working with hydroponics, aeroponics, and renewable energy sources like solar panels. It is mainly about resource use efficiency, how to make it better, how to manage it. The technological aspect also combines with artificial intelligence. How to combine everything and deliver it to the grower is one of the key questions. There is not much data available yet for digitalisation in agronomy. For medicine, for example, they have very large databases for things like lung scanning. For agronomy, such databases do not yet exist. But that is where the potential is.*

*Manufacturing is a large part of what our institute does. We manufacture semi-conducts, lasers, textile, defence, microwave sensing, additive manufacturing. I wish Lithuania could develop a stronger manufacturing base and be less reliant on other countries. We should gradually shift from a predominantly service-based economy.*

*Three sectors were identified as having the highest innovation potential in Lithuania: ICT, energy, and construction. IT was selected as a clear first choice, Lithuania has strong existing capacity and the potential for digitalisation is essentially unlimited across all economic sectors. Energy was selected because of Lithuania's growing activities in solar panel production, smart grid development, offshore wind, and clean gas technologies; this sector combines legacy industrial expertise with rapidly expanding renewable energy innovation. Construction was selected because the sector continues to drive strong demand for innovation in materials and machinery, particularly in the circular economy context, using industrial waste streams as inputs for construction and packaging materials.*

*Agriculture and agro-engineering were identified as an additional area of high potential. Lithuania has a high level of digitisation in agricultural yield management and is actively introducing precision agriculture technologies, reducing dependency on fertilisers and integrating advanced agro-technologies. The interviewee chairs a PhD committee in environmental engineering that overlaps with agricultural engineering. Chemical industry was also mentioned as a further area of potential, particularly in the context of shipping and liquid cargo.*

*Across these sectors, the key enabling technologies include: AI applications for process optimisation, circular economy materials processing, energy systems modelling and smart grid integration, advanced material science, biotechnology, and digital twins for industrial and construction applications.*

Why do you believe that the [the following – depending on a survey response] industries would benefit from stronger R&D&I collaboration with the Baltic States? What are the strengths/weaknesses of each Baltic State?

#### ***Quotes of respondents/interviewees from Estonia***

*Market size matters. Full stop. Innovation also needs an ecosystem, as you can access more resources, save costs, develop better ideas and launch them faster on the market.*

*I believe the Baltics should collaborate in the areas of defence, energy, natural resources, IT and many other areas. If our energy sectors were connected and developed, it would give a more stable energy flow and it would decrease prices for all countries.*

*We share a Baltic Sea, we should share good practices on fishing, marine product production. We have a similar climate, we can share best agriculture practices on how to enrich soil, how to best grow products in different seasons. Why don't we do it? People need to be encouraged to innovate, to share ideas together. This is the role of the government.*

*Defence collaboration is also critical for security of the region. And for the EU as a whole. I think we talk a lot about collaboration, but do very little together, as it is connected to funding. Maybe the EU could help the Baltics to work together? It is in the interest of the EU, it is not just a Baltic "good-to-have".*

*Every country has its own strength and niches, where they could share good practices and learn from other countries. To find good partners is not easy, as there is a barrier of trust. There were cross-border programmes between Estonia and Latvia, but conditions were ridiculous – too many requirements, too low funding. This kills collaboration.*

*A few years ago, everything was about IT, then we saw that had its limits and the whole country started looking more towards industry again. In the city's new strategy there is a focus on smart industry, meaning highly automated and digitalised production. Estonia is a small country and short on workers, so heavy industry is not realistic. But smart industry could definitely be one area where Baltic cooperation would add real value.*

*Health tech is another one I would keep on the list. I think health tech is where we could genuinely take everything we know in terms of deeptech, AI, and IT and put it to use together. If the three Baltic countries combined their innovation efforts in health tech, rather than doing separate things, there could be a real breakthrough. Some kind of joint Baltic innovation project in that area could go much further than what any one country could do alone.*

*And defence, obviously. We share the same eastern border. We are all in NATO. If there is a gap anywhere, it is a problem for all of us. We are the countries holding the eastern flank, and we should be doing that together.*

*For defence, the shift is clear. It has come to the university as well. There is now more demand, more programmes, and we are being asked to apply for and support defence-related work. Students at our branch have already developed a company and a monitoring system connected to this area. A few years ago, that was not the case. The war changed the urgency, and it is felt directly in how research priorities are shifting.*

*Energy independence was also raised as a shared priority for Baltic collaboration, and I would agree. Strengthening energy production collectively across the Baltics would reduce dependence on external supply and expand the manufacturing and grid capacity of the region.*

*For manufacturing and information and communication, more or less the same thoughts as before.*

*For defence, today it is just a very topical field, and it comes from necessity.*

*For public administration, we have communicated quite a lot with municipalities and the public sector. I see that they are also very interested in innovation solutions. They sometimes have funding for that, and they try to develop solutions for citizens, or for cities, or to solve environmental issues. And if you do it with cooperation across countries, maybe it is more effective. Different regions or countries have different experiences, and they can share what works and what to avoid. That kind of collaboration would improve the overall experience.*

*First of all, let me say that Baltics have made a huge progress in terms of economic development, innovation in the last 20 years. They've rebuilt, reinvented their economies, despite being so small and dependent. Their potential is huge and they need to believe in themselves to open or untap that potential and move to the next level of the game.*

*There is a need for a greater Baltic collaboration, especially scientific and industrial collaboration. Estonia has more partners from the Nordics, as the hindering factor is financing.*

*For scientific research and industrial collaboration, use Nordic grant mechanisms. Therefore, for the Baltic collaboration to make it work, money should be available.*

*I am sure in some areas – food, defence, infrastructure - it makes sense to collaborate. But we could do even more in the biotech side – Lithuania is building a good track there. Investors and the world are looking at us as one region.*

*Being a small country is good for innovation – you know people. It is easier to communicate; you know whom to contact. But at the same time, sometimes we have too little local expertise, therefore we need a stronger regional connection.*

### **Quotes of respondents/interviewees from Latvia**

*In large EU-funded projects typically only one Baltic State is selected to participate. As a result, the Baltic countries often compete against each other for inclusion. From an external perspective, the Baltics are viewed as a single region, which limits opportunities for multiple countries to join the same project. When projects are specifically designed for the Baltic region, then collaboration runs normally. Participation in research projects is key, as it is a source of both expertise development and financial sustainability. So, this competitive dynamic presents a challenge for healthy collaboration. We [Baltic States] simply should not be put in situations, where we are fighting for one opportunity. So, one winner and others are left behind. The governments in the Baltics should think how to make us work together and bring more positive synergies and communication.*

*Good collaboration means knowing our areas of expertise and of our neighbours. For example, in the area of water-related research, Latvia's strength lies in having a central institution that monitors water-related activities across the country. We could further strengthen our position by expanding research related to freshwater. Estonia has a similar structure, with a dedicated water institute and strong monitoring and research capacity, supported by a well-developed environmental institute. In contrast, Lithuania has lower research intensity in water-related fields, with monitoring spread across several institutions. However, Lithuania could improve its position through stronger academic collaboration.*

*Institutional collaboration within Latvia remains limited. Universities often prefer to work independently and engage in partnerships only when it directly benefits individual researchers. Estonia and Latvia have similar academic networks and approaches to data management, with relatively strong capabilities in data collection. Despite this, collaboration is hindered by a lack of trust. Researchers are often concerned that sharing data could lead to others publishing results first. This creates a race to publish first, therefore trust towards partners is so critical. If trust is lacking, collaboration is likely to be limited. Trust, however, is developed through experience. The more we collaborate with each other, the more we trust. It is a "vicious circle".*

*The more I think about collaboration between the Baltic States, the more it makes sense. Given that our institute works in the area of environment, we actually need data from Estonia and Lithuania to analyse the situation in Latvia. We are connected not by distance, but in many other ways. It is best if we recognise it and help each other. We need more joint projects, we need political support to work more together, as environmental systems are so interconnected and activities in one country affect the others. Ultimately, collaboration would benefit the entire Baltic Sea region. The political agreements made at the ministerial level typically do not reach the organisations and people, as besides statements and signed documents there is no real money behind it and no real political will. As a result, collaboration remains a fantasy. Commitments should turn into action.*

*Digitalization is clear. Soft services need to be developed, and it is also a way to save significant resources in state administration and other areas, while simultaneously thinking about where to*

*build on that for broader development purposes. We will all learn to use new tools better, including artificial intelligence much more actively.*

*Health is self-evident. As an institution whose primary focus is human capital development, we think about making people healthier and keeping them productive in the country.*

*Professional, scientific and technical services, that is precisely where research results are applied and utilised.*

*On the Baltic dimension, our three countries have many similar problems, and while we are small, we can achieve more through collaboration. Lithuanians and Estonians face similar challenges, and some things are done better here while others are done better there. We should also think about Baltic-level innovation grants, not only national ones. That could provide additional benefit beyond what Latvia can achieve alone.*

*As for strengths and weaknesses, Estonia most likely has IT as its strongest area. It started with Skype and developed from there. For Lithuania, I cannot say precisely where they are significantly stronger. We have more in common with Lithuanians. However, they have found some excellence centres where they have concentrated resources. They also managed early on to invest significant funds into their universities, which has yielded results in the form of more centres of excellence. In something specific like biomedicine, we have quantum research and a few other standout areas, but I think they have many more such centres overall. Lithuania also benefits from having multiple university cities, Vilnius, Kaunas, and Klaipėda, which gives them a broader base.*

*I think the selection of industries or areas in which we should collaborate depends on a strategic political choice. Either we select same areas, such as for example AI, and position Baltics as the AI hub of Europe, or we look for complementarities. For example, Latvia has a good pharma, Lithuania has good green technologies, Estonia has good IT industry. Together, they create novel medical and sustainable solutions.*

*Collaboration is always a smart thing, it is a sign of intelligence, because you manage to push your ego away and adjust to the needs of others. I don't think there has been a political will among the Baltic policymakers to look at this partnership strategically. But it is surprising, as Baltics is a region, a small region, which surprisingly survived throughout centuries and is trying to do so now. It makes sense to show that the three countries are smart enough to build synergies.*

### ***Quotes of respondents/interviewees from Lithuania***

*Administrative services were selected because we see these services genuinely developing to meet the real needs of society, which is a quite different trend from what we observed ten or fifteen years ago. One thing we notice is that we are more frequently being asked how satisfied we are with services and how they can be improved. For example, the national research council asks us this from time to time, which was genuinely surprising compared to how things worked in previous decades. So, there is a real shift happening there.*

*For public administration, what we have noticed through Baltic collaboration projects is that when we actually sit together and share insights on policy trends and approaches, our decisions become significantly better. The more we collaborate, the more promising the outcomes are. When every part of society takes an active role and is involved in public administration processes, that leads to better results. Sharing best practices across the Baltic states accelerates this.*

*For human health and social work, this is a very promising field because substantial investment is going into it. Lithuania has seen significant developments in terms of different health and care facilities and services. Citizens now have greater choice in how they want to be treated. This is a field that will keep progressing.*

*On the question of whether this should be driven by government or through natural cooperation, what we feel very strongly from our research is that top-down decisions do not work. When something comes down from above, people resist and nobody really moves. But when different stakeholder groups sit at the same table and discuss, they consistently make much better progress than any government-driven initiative. Even the ministries that think they know everything discover they need to consider many more things than they had in mind once they start genuinely listening. That is simply how people work.*

*Lithuania is strong in its agricultural sector and produces quite a lot. In the agro sector we are mainly an agricultural country, and I think we have much to give there. We also had some collaboration projects touching on tourism and heritage through these sectors, which is why I also included accommodation in the selection.*

*On strengths and weaknesses of the Baltic states, I do not know in detail. I think the main weakness is how other countries, like Italy, Spain, France and similar, perceive us. There is a kind of stereotype that we are post-Soviet countries and somehow less advanced. But when you look at the actual technologies, at what we are doing, at the universities and laboratories, the quality is comparable. There are sometimes infrastructure issues and there have been programmes to address that, but some of those were 20 years ago and funding has not always continued.*

*On human capital, for my lab it is not a problem. My lab has been growing. I have three new researchers in recent years. One I invited from a large technology university abroad, someone who had been working there for about 30 years. We have four PhD students, three of whom are international. The retention rate is maybe 40 to 50 percent, so not everyone stays, but it is workable.*

*The bigger issue is administrative personnel. Because we are a government institution, the salaries for administrative staff are not competitive. For researchers it is different because we earn from project funding and successful grants. So, if you are strong in that, you are okay. But for administrative staff, it is a real problem.*

*I've selected industries, which would complement our activities. We've worked with multiple universities in Latvia and Estonia. It was easy to collaborate, to work with colleagues – the region is small, travel and collaboration is easy, we understand each other's culture, we speak English and other languages. Those, who work in a specific field know colleagues in other countries, therefore I think there is definitely a room to boost regional collaboration.*

*Each Baltic State is quite different and has a slightly different technological focus, but it also makes sense to present ourselves as a region. Joint Baltic region as a biotech or laser hub. I think it could work.*

*Also, I think Baltics could be presented as a part of Nordics. To me, it makes sense. But we are not fully Nordics, we are still Baltics.*

*There are some regional strengths: Lithuania has developed a strong laser industry, Latvia shows potential in biotechnology. However, much of the region's industry operates as subcontractors rather innovation leaders. A broader issue is a lack of ambition and risk-taking in innovation, shaped by historical and structural factors.*

*If we look at the agricultural sector in the Baltics, I think it has many investment opportunities if we used robotics or developed high-tech solutions, advanced materials. Regional collaboration across the Baltic States is a must for this. We could join expertise and scale projects. Then sell them*

*together internationally. I think it is so weird that we avoid collaboration, trying to prove we can do it on our own. Yes, we can, but progress will be slower everywhere.*

*I would not say that Lithuania, Latvia and Estonia have big cultural differences when it comes to risk-taking. We are all risk-averse. I think Latvian is very humbled, as it is slightly falling behind Estonia and Lithuania if you look at indicators, but I would not say that we are very far apart in terms of innovation and economy generally.*

*Small firms in provincial towns can test newly developed products and this way boost the development of small towns. Small towns are depopulated across the Baltics. In Lithuania, we are still more alive than Estonia and Latvia. We have more people. If we looked at Baltics as a really united, strong, collaborative region and actually aligned our strategies, at least in key areas, we could maximise our resources, especially human resources. I don't think Baltics will have a lot of migrants, therefore we should really focus on using our human capital potential and encourage young people to stay, show them a perspective of a future, where they want to be. And I think a more united Baltic project would be something attractive.*

*I don't think Baltics should target large markets, such as China and large internet shops/platforms. It is time to focus locally first, to focus on quality and uniqueness. And I think Baltics should think if they can restore some old factories from the Soviet period. Such pity that all that infrastructure was abandoned.*

*For Baltics to work together, they need to develop common standards. There should be a common standardisation bureau, which analysed what non-tariff barriers we have and suggest how to overcome them. Automatization projects also would be useful. IT industry is something what all Baltic States are good at. I dream that we have good IT technologies in all campuses.*

*There is an institute in Olaine (Latvia) it focuses on biosynthesis, chemistry, biotechnology. Kaunas military buys what they develop. It is important for defence. Overall, defence is another critical area, where Baltics should collaborate. We already develop something, but it is not large enough – radars, long-distance detectors. Same for the area of electric control technologies, machines, machinery – each country has some good instruments and, if we collaborated more, there would be more investment. So, we could become really good at something, compared to the rest of the world.*

*Why do Baltics not produce furniture? Who can explain this to me? I mean, we have so much wood, we have engineers, designs. We have everything we need. I know we need lower energy costs, better energy supply and control systems, but it is possible to develop it. Why not develop it together? Why not strengthen our energy connectivity and energy independence? To me it seems that we are happy to integrate with the rest of the world, but avoiding collaboration with each other, as if someone in Western or Northern Europe is waiting for us. They will come to exploit our resources and enjoy lower costs. And we will stay fools, we will not become leaders in something, because we are too proud to work as the Baltics. I don't vote for becoming one country, but we should work as a synchronised network, we should build synergies and have joint plans to gain competitive advantage.*

*Light/green metallurgy – it is starting to develop in the Baltics. We are restoring some aspects of our environment ecosystem, working on waste models, cleaning water. I think Baltics could be such a great sustainability example. But I know that we throw away collected metals, which we could use.*

*Baltics should develop a common education system, it would be much cheaper and way more effective and efficient. University lecturers want finances, it does not matter for them where they work. And this would show that Baltics have a good education quality. We could attract more skilled and talented people.*

*For Baltics to work as one region, we need more uniform procedures, standards, we need to know what is happening in the neighbouring country. Who in Estonia or Latvia is watching a TV or reading about Lithuania? If we are not even slightly aware about what is happening, we cannot understand each other. We should have at least one TV channel about the Baltics.*

*A big advantage of the Baltics is that we speak two common languages – the older generation still remembers Russian, while the younger is fluent in English. It is remarkable how much potential we have and how little we do together. The key challenge is competitive for a financial flow. Currently, we compete for the same opportunity – either it's a research project or an EU fund or something else. This is where politicians should help out and create a system, where we interact, collaborate, but don't compete with each other all the time. We need to share resources, we need to have a joint pool of money. Otherwise, we will constantly be jealous of each other and fight for resources. I am sure it is still possible to be friends. Look at Germany and France they compete, but they also collaborate in so many areas. This is why they've developed so much. I think we need to split the process of production – each country is good at something and is developing that. Together we create a cycle of production and fight together for a better market position.*

*Circular economy was identified as the most compelling sector for Baltic R&D&I collaboration. Individual Baltic states are each too small to close material cycles independently, textile recycling was cited as a specific example where national-scale processing is not viable but regional-scale operations are. Collaboration between the three states allows the closing of circular economy loops at a scale that makes economic and technical sense.*

*The four main technical universities in the region are already doing significant collaborative work in technology development, and the potential is high. A notable cultural shift has been observed: Baltic industries that previously hired scientists from Western Europe are increasingly turning to local research institutions, while Western European industries are actively recruiting Baltic scientists. These signals rising international recognition of Baltic research quality. Industries driving the highest GDP contribution in each country are the most engaged with innovation, and they are increasingly willing to implement technologies developed in Baltic university labs.*

*On relative strengths and weaknesses: Lithuania benefits from the competitive dynamic between its two main technical universities, and from improving infrastructure between Kaunas, Vilnius, and Klaipeda. Latvia's research capacity outside Riga is notably lower than in the capital, universities in Jelgava, Liepaja, and Daugavpils were assessed as operating at a significantly lower research level compared to Riga-based institutions. Estonia has historically concentrated capacity in Tallinn but is beginning to attract more distributed investment. All three states are individually too small to compete globally in most sectors, but their combined intellectual potential is genuinely high, and joining forces to represent the region as a whole is more valuable than inter-Baltic competition.*

Why do you believe the [the following – depending on a survey response] 3 policy instruments would be most effective to untap the innovation potential of Latvia/Lithuania/Estonia?

#### ***Quotes of respondents/interviewees from Estonia***

*Innovation needs ecosystems. Those start-ups that are connected to researchers, to large companies, they are more likely to succeed. Communities must mix to exchange knowledge.*

*Innovation clusters, collaborative projects, innovation scale-up support is needed. No miracles will happen if there is not support and no money. Baltics have smart people, but innovation means risk and risk should be decreased or managed, therefore public support is totally justifiable.*

*For successful R&D&I programmes, the stakeholders should be involved in the design of policy instruments. If possible, it should be bottom-up. Otherwise, it is not going to work. People, who*

*want to innovate, who know what kind of resources they have should say to the policymakers what kind of support they need, not the other way around.*

*The governments in the Baltics should take the risks down by supporting joint projects/initiatives. It is a risk to start a project with a new partner, you don't know the financial background of a partner.*

*I would say mission-oriented innovation programmes first. Taking clear end goals, like the ones from the three sectors we discussed, and building programmes around those goals. In defence, the end goal is clear. In health tech, the end goal is keeping people healthy and away from hospital, expanding healthy lifespan. So, mission-oriented programmes, combined with grants specifically geared towards those missions. That would be number one.*

*The second thing that has worked well in practice is small, easy-to-apply-for innovation grants, specifically structured to require collaboration between companies and universities. The amounts do not need to be large, starting from a few thousand euros. What we saw is that companies used even those small amounts very effectively when the condition was that the work had to be done together with a university. Honestly, I think those worked better than just handing companies a startup grant and saying, "you have an idea, go for it." The collaboration requirement made a real difference.*

*And the third thing is talent. More smart people, more top specialists, and making it as easy as possible for them to come and work in Estonia, particularly in R&D centres. Legislation that creates a fast track for top specialists, combined with tax incentives for both the people coming and the companies hiring them. We have some of this already, but it can always be improved.*

*There may be too much regulation in some areas right now. If you are interested in starting something or trying to build on an idea, the administrative burden can stop you. If it becomes too difficult, people just give up. Reducing unnecessary bureaucracy would help.*

*The most important instrument for researchers, like me, is public funding. For the full university, public funding now accounts for less than half of total revenue. The rest comes from projects and European funding sources. Direct, accessible public funding for research is what allows the work to actually happen.*

*For high-risk innovation financing, I think the one problem is that to move from the lab to production, there are risks, and someone has to take them. If no one is ready to take the risk, then there is no innovation. Maybe it is necessary to have some kind of risk funding or such tools, where you accept that you take a risk, and you cannot expect that all results are always positive. But if you do not take the risk, then sometimes no one moves forward.*

*For scale-up, this is always a key issue. We very often have prototype solutions in the university, but to scale them up into production, companies say there are no ready technologies, there is no experience. Sometimes we have a solution in the lab but to scale it up, there is no experience and there are different issues at every step. We try to move step by step, solve one thing, test it, get results, make changes, then another iteration. But it is not always clear how to get the funding for each step. You have a good idea but if you do not have enough knowledge or funding, you cannot move forward.*

*For public procurement, I do not know this in full detail, but in Estonia this is very complicated for innovative solutions. There are very strict procedures. If you prepare your proposal for something quite innovative, you often cannot describe all the steps precisely in advance or what the result will be. Sometimes the regulations are too strict. And if something does not match the list exactly, that is already a problem. It is discouraging.*

*On the broader question of state support for innovation research, I think there is room for improvement. We have some funding measures, but it is a little bit like with public procurement. The regulations are quite strict and limiting. And for the private sector, the co-funding requirement is sometimes very high. If a company has to pay most of the project budget themselves just to receive 20 or 30 percent from the state, and they have to go through all the bureaucracy for that, then many of them just say it is not worth it. If they can do it alone, they do it alone. And if they cannot, they do not do it at all.*

*What is needed? Innovation will come through start-ups and bigger enterprises, I would not rely on SMEs or research organisations. They will be worse to implement ideas, they should have a supporting role, but they cannot be in the driving seat. Innovation needs ambition, agile structures, resources and good management.*

*I know that currently Enterprise Estonia is thinking about a very strategic step – to provide R&D&I grants for large companies, which would bring other companies in their network. Basically, an innovation ecosystem building around large companies. This idea came from the Western world, they've already tested it. You take mature companies, which in many cases in the Estonian context are international/foreign-owned companies, and they do R&D&I projects in collaboration with other entities. I think it is a very good idea, it has been validated abroad. For us, it makes sense, we don't have too many resources to reinvent the wheel, we need to take good practices from other countries.*

*To stimulate applied research, there is a main grant mechanism at Enterprise Estonia. It is a good grant, but with very strict conditions and an evaluation on who should get the money. The problem it reveals is the following – we/researchers don't understand the market – no market insight, no understanding of a pipeline, export readiness. Until now, the researchers have been thinking only until TRL 3. Now we start doing small market analysis, but these are very first steps. There is still no mechanisms in Estonia to cover TRL 8 and 9. This is the valley of death, especially for investment-heavy industries. This is where start-ups are weak.*

*Start-ups in Estonia fail, because they don't have customers, a supply chain, finances. Collaboration with different entities is very important for the survival of start-ups.*

*Why technologies or innovations fail? I think for two reasons - consumer perception, legal/regulatory issues. Asia is tackling well both challenges. Asia created a hunger for innovation – they want more speed and better quality. In Estonia, digital innovation is promoted and people want it, but other innovation is not well-perceived in Estonia. So, we need to explain to people that trying new things is good. The next challenge are regulations. Regulatory sandboxes are good instruments to find a way how to make something legal. We need a different culture at our regulatory institutions, they should say – come to us and we will help you to “legalise” your invention, instead of killing innovation with a set of rules. If you need to communicate with multiple organisations to solve a small problem, it becomes a nightmare.*

### ***Quotes of respondents/interviewees from Latvia***

*Research organisations are typically non-profit. While certain activities, such as biotesting, could be commercialised, doing more commercialisation activities would require a change in legal status, which is associated with significant regulatory, financial and structural challenges.*

*The government should invest more in education and science. They play a central role in economy and in good governance. Trust in research organisations is essential, so that their findings can meaningfully inform decision-making. At present, this trust is limited. There is a sense that we are redundant and powerless organisations. Researchers are not always taken seriously and can be overlooked when more influential stakeholder groups are involved. Companies, in particular, tend*

*to have greater influence, yet they may not prioritise the long-term environmental impact of their activities. For example, in areas such as forestry and water management, declining fish populations are supported by research data, yet policy responses remain weak. Government institutions may prioritise short-term public approval—particularly from groups such as fishermen or port-related stakeholders—over scientific evidence. As a result, long-term thinking is often lacking, and we-researchers are feeling ignored by the policymakers.*

*Public attitudes can also be challenging, with some resistance or negativity towards environmental (“green”) organisations. There is a need to improve communication and raise awareness about research and its societal value. I hope that younger generations, along with responsible journalism, will support more informed and forward-looking decision-making in the future. Current journalists only look for drama, they don't want to give evidence-based information, they need bigger interest to be more popular, more commercial. They don't care if what they actually say is correct. I feel a lot of conflict in the country is because of journalists, who artificially create it or spread rumours as it already exists.*

*Stronger collaboration between industry and researchers working in the same fields would produce great benefits to the country, I am sure. Such cooperation could help bridge gaps between knowledge, policy, and practice, leading to more sustainable and economically sound outcomes. If we combine our data, expertise, infrastructure resources we could have a greater influence on government, on the country generally. Sad that both communities tend to work apart.*

*Starting with governance, it has improved a great deal, but in my opinion, there is still room to improve further. However, none of it will matter without funding. We can have excellent governance of very small budgets that are simply insufficient. The governance framework is needed, and it needs to be set up carefully. Universities are already building grant offices and innovation centres, which is a positive development, but some directional guidance could also be added.*

*On commercialisation, I would first want both fundamental and applied science to be properly in place. For commercialisation to truly work, we need to know how to separate what the scientist does from what other specialist's handle. There are two models: one where projects proceed and then look for applications, and another where scientists work jointly with entrepreneurs from the start. The problem is we do not have many examples of the second model. Those who truly understand that they need research are already investing in it themselves, but there may be more sectors where this should be expanded.*

*On public funding for research, I am not one of those who believes money should simply be handed out for research without accountability. But funding is needed. There will sometimes be cases where someone research something that many would consider pointless, but with larger overall funding, those cases become a much smaller proportion. And the more critical mass of active researchers there is, the greater the potential for breakthroughs across all areas. Right now, we lose many promising ideas somewhere along the way. A project did not get funded, the researcher moved on. If we were to fund, say, 30% of projects rather than under 10%, even if half still would not pass the quality threshold, we would accumulate far more seeds of future ideas over time.*

*We also need to distinguish exploratory research projects from projects precisely aimed at creating specific innovations or technologies, and track them differently. In the latter case, the path to the result is already relatively clear and just needs to be executed. In exploratory research, by definition, we do not know what will come of it, and we need to be ready to accept that some ideas will not be confirmed.*

*There is also the structural problem that researchers are too dependent on individual grants, the grant is their livelihood. So, the focus becomes simply moving from one grant to the next, which is not always good for researchers' careers or for the field. I have heard of post-doctoral researchers*

*whose institute directors were not happy when they received a postdoc, because it is focused on one person's development rather than generating institutional revenue. These kinds of dynamics are not ideal. Fundamental science is not popular with the public because it does not produce quick, visible results, but it has an important role, and there are scientists who want to focus only on that. They should not be forced to also produce commercial products.*

*There are different public support instruments for innovation, but of small scale, which discourages the creation of resource-intensive, high-value added inventions. The government is more likely to support the creation of socks rather resource intensive industries, such as medical, microelectronics or other industries, where regulation is needed. In my view, approach should be different. It is best to support two or three good projects, which will generate a trickle-down effect for other industries and companies, than to spread money thinly everywhere. It is politically convenient, but it is not effective.*

*LIAA vouchers and competence centres – it is good that we have these instruments, but I think the voucher financing should be larger, or it should be proportionate to the industry needs. Otherwise, we will support only resource non-intensive industries.*

*Large companies have the resources and capacity to create an ecosystem around themselves, therefore I believe the government should create instruments that encourages large companies to take the lead. Same applies to the state-owned companies. Large state-owned companies should become real innovators, which will push forward the entire industry.*

*I am convinced that business basics and project management should be taught to all researchers. There should be a course on deep science commercialization. The researchers that are already involved in applied research and commercialisation activities could attract more researchers and encourage them to become project/research manager. In addition, the project team should include financial specialists, lawyers. There should be a clear understanding of what roles are needed.*

*The government needs to understand that science and innovation mean competitiveness of the economy. I understand that we are in a difficult geopolitical situation and resources are going towards defence, but the government can be smart and create instruments for collaboration and for attraction of investment, so that industry will join forces with other innovation players and they will pull it off, I am sure.*

*When it comes to financial instruments, let's focus not only on the design of a programme, but also on the selection criteria. Let's invest in 5 good projects with high innovation and market potential, instead of in 40 OKish projects. Successful projects will become champions and push forward the entire industry. Latvia needs success stories, these can be developed from a few really good cases and then communicated well.*

*Very important call to the policymakers – please avoid overregulation. Every step is being bureaucratized and checked – it is too much control and paperwork. It discourages innovation. Please allow people to do their thing, learn to trust that everyone is doing their job.*

*I think start-ups could be the drivers of the innovation ecosystem. Given that people are risk-averse and established companies have a lot of lose, I think start-ups are ready to take risk, therefore they are more likely to become an innovation driver in Latvia. They don't have resources and not many capabilities, but they have a different mentality. And it would be much easier to help them, instead of trying to persuade an average Latvian to innovate. In addition, EU competition for funding is huge. Startups have weak admin capacity to apply for this funding. So, helping start-ups is definitely needed.*

*We need cultural initiatives, which would kill this risk aversion in us. People in Latvia have a low ambition, they don't think in terms of developing the best product in the world or in Europe. The mentality is more focused on survival. This needs to change.*

### **Quotes of respondents/interviewees from Lithuania**

*On public funding, what we currently see is that it goes to areas that are more promoted or more lobbied. We think effective policy instruments should serve the needs that are truly urgent, and that means public funding should be allocated based on bottom-up initiatives, where the need is greatest. And we have seen this work already. Communities that have unified their voices and formed local action groups have received very direct and very concrete support, things like a renovated community centre, better spaces for children, or different care facilities. Communities really feel this kind of direct support. So, the policy instrument of public funding works when it is received by specific groups with specific needs, not distributed by general criteria.*

*On special innovation zones, next to this public funding question, there is also the reality of migration flows, both from rural areas to cities and now increasingly the opposite. What we think is that different target groups and specific zones should not be treated equally based on general average parameters. A family that moves to a city needs kindergarten places and schools there. An elderly person who stays in the countryside needs local medical support. These are completely different needs. Special zones can only be effective if they are treated according to their own specifics, not by some average plan.*

*On innovation culture, this is always a challenge because the technological part of society progresses very naturally and innovation culture is just embedded there. But those on the social sciences and humanities side always lag behind. So, the promotion of innovation culture needs to happen in collaborative forms, bringing these two sides together. And crucially, public funding should not create conditions of competition. It should create conditions for collaboration. There are already very good examples of this, like research valleys, where businesses, scientists, and society come to the same physical spaces, discuss, see each other's work, and feel how innovation actually happens. That is very important for fostering innovation culture, and policy instruments devoted to these kinds of collaborative multi-stakeholder activities are the ones that really work.*

*I think researchers should provide qualitative data and clear messages to policymakers about what they can do and what they need. That is our task. What policymakers do with that is their task. That is part of the thinking behind my choices.*

*For our lab specifically, project-based funding is the most important instrument. But for science more generally, I do not think one single policy works across all areas. It depends very much on the field and the institution. As I mentioned, our research centre has three institutes that are very different from each other. The forestry institute works directly with its ministry. The horticulture institute works with growers and industry. What works for one does not necessarily work for the other. So, I do not think there is one overarching policy that would stimulate all of Lithuania equally. It is very field-specific.*

*Spinoff company support is currently missing, and it is an important piece to scale innovations. Public procurement would help to stimulate more innovation in the country. Financial support for deeptech creation is also needed – it would push ideas towards a higher technology level.*

*Fundamentally what needs to change is the evaluation system of institutions. Otherwise, we waste so much time and resources...and paper...for the sake of paper.*

*Innovation also requires a different industrial approach. Instead of relying solely on large companies, which tend to avoid high-risk projects, innovation should be fostered in smaller, more flexible firms as well. Large companies still should be the key drivers of change, as they have the*

*resources to do so. But smaller companies can experiment, take risks, and develop new products, particularly in areas based on local resources such as wood, agriculture, or marine materials. Successful innovations can later be scaled or integrated into larger enterprises. Collaboration between large and small companies is critical for real innovation.*

*If the government supported innovation in small firms, it could have an additional spillover effect. Small companies that are based in regions, could stimulate regional development and help to address depopulation. Decentralising innovation, but creating innovation networks with larger companies and with research institutions is what we need.*

*Ultimately, innovation involves risk, and failure should be accepted as part of the process. Without structural changes, stronger collaboration, and a shift in incentives, science risks remaining disconnected from real-world impact. A more balanced system—combining academic excellence with practical application—would better support long-term development.*

*If you want to do some reform – reform the academy of science in all Baltic States, focus on science and engineering. Stop evaluating positively just paper producers. Let me ask you - if you remove all paper-writes, what do you think will happen to Lithuania? Nothing. The country will not lose anything. There should be a political request to change the system. We should do the evaluation of real research activities. The rest we do not need. But as a result, you will remove 80% of researchers – they never did anything practical. And don't put money into universities and faculties, which cannot do applied science.*

*Three policy instruments were identified as most effective: public funding for research, tax incentives for R&D&I activities by the private sector and ensuring an adequate share of GDP is committed to research and development.*

*Public funding for research is the foundational instrument, without adequate state investment, research capacity cannot be built or maintained, and the talent pipeline dries up. Tax incentives for businesses that invest in or contract R&D services create the demand-side pull that connects research output to market implementation. GDP allocation to R&D functions as both a political commitment and an international benchmark: all genuinely progressive economies maintain high R&D spending as a share of GDP, and the correlation with innovation outcomes is consistent.*

*The interviewee added a dimension that cuts across all three instruments: universities must be recognised not only as educational institutions but as economic actors and job providers in their own right. Researcher salaries funded by the state are investments with returns, high-quality researchers attract high-quality research funding, generate patents, spin out companies, and attract international collaborators. Critically, innovation policy must be understood and championed cross-ministerially rather than confined to the Ministry of Education and Science. The economic return from implemented innovations, their contribution to GDP, must be made visible and attributed, so that investment in research is seen as a driver of national income rather than a cost.*

## Appendix 3. Foreign investors that took part in the study

### **AE Partner**

AE Partner Liepāja SIA is a Liepāja-based automation and control systems manufacturer and part of the Danish AE Partner group. Located in the Liepāja Special Economic Zone, the company designs and builds custom electrical control panels, industrial cabinets, containers and modular e-houses. It also provides engineering and consulting services related to machinery safety and automation. AE Partner Liepāja reflects Danish industrial investment in Latvia and serves customers requiring specialised automation and electrical engineering solutions.

### **AXON CABLE SIA**

AXON CABLE SIA is the Latvian unit of the French Axon' Cable Group, a specialist in high-performance interconnect solutions. Located in Daugavpils, the company designs and manufactures custom cables, harnesses, connectors and related systems for demanding sectors such as aerospace, defence, automotive and industrial applications. The Latvian factory employs skilled technical staff and contributes to the group's international production network. AXON CABLE SIA demonstrates Latvia's capacity in precision manufacturing and high-value industrial supply chains.

### **BALTA**

BALTA is Latvia's leading non-life insurance company and part of the PZU Group, one of the largest insurance groups in Central and Eastern Europe. With more than 30 years of experience in the Latvian market, BALTA provides insurance products for private individuals and businesses, including motor, property, travel, health and business risk coverage. The company serves customers through digital channels, a branch network and corporate insurance solutions. Its scale and PZU backing make BALTA an important institutional investor and risk-management partner in Latvia.

### **Basecamelectronics**

SIA Basecamelectronics is a Riga-based electronics company developing camera stabilisation solutions under the BaseCam Electronics brand. The company focuses on controllers, brushless motors and related components for direct-drive gimbal systems used in photo, video and specialised payload stabilisation. Its engineering work includes stabilising controllers, IMUs and custom development for clients that integrate precision stabilisation technology into their own hardware. The company represents a niche Latvian electronics and engineering capability serving international users in imaging, robotics and related technology fields.

### **Bite Latvia**

Bite Latvia is the Latvian telecommunications operator of BITE Group, which operates mobile, fixed and digital communications services in Latvia and Lithuania. The company provides mobile voice and data services, 5G connectivity, home internet, television and business telecommunications solutions. Bite Latvia is also connected to the wider BITE Group ecosystem, which includes telecommunications infrastructure and media assets in the Baltic region. Through network investment and consumer and business services, the company is a significant player in Latvia's digital infrastructure and connectivity market.

### **Bitus Latvia**

Bitus Latvia SIA is a Latvian wood processing and timber solutions company with operations in Latvia and links to Sweden. The company offers sawn and processed timber, drying, sawing, planning and protective treatment services, as well as wooden modular houses, premium wooden windows and doors, garden products and wood pellets. Its production facilities include locations in Valmiera and Cēsis regions. Bitus Latvia combines wood industry know-how with sustainable construction and timber-based product development.

### **Brabantia Latvia**

Brabantia Latvia SIA is the Latvian subsidiary of Brabantia, the Dutch household goods producer founded in 1919. Located in Talsi municipality, the Latvian operation supports the group's manufacturing and assembly of durable homeware products, including metal household items such as waste bins, laundry products and kitchen accessories. As part of an established international consumer goods brand, Brabantia Latvia contributes to the group's European production capacity and supply chain. The company reflects long-term foreign industrial investment in a regional Latvian manufacturing location.

### **Brigg HR Partner**

Brigg HR Partner SIA is a Riga-based business HR partner providing staffing, recruitment, HR and accounting services to companies operating in Latvia and the Nordic region. The company works with employers in Sweden, Finland, Norway and Latvia, helping them find talent and manage workforce-related processes. Its services combine recruitment expertise with HR, legal and accounting support for cross-border business needs. Brigg HR Partner SIA reflects demand for specialised people-management services in an increasingly regional labour market.

### **Brimer Liepaja LSEZ AS**

Brimer Liepaja LSEZ AS is a Liepāja-based manufacturing and port services company operating in the Liepāja Special Economic Zone. It is part of Norway's Entec Group and specialises in producing large composite structures for sectors such as oil and gas, aquaculture and industry. The company manufactures tanks, pipes, ship components and other composite products, while also using its Liepāja port location for logistics and cargo-related services. Brimer Liepaja combines advanced materials production with Latvia's industrial and port infrastructure.

### **Cilmes šūnu banka**

SIA Cilmes šūnu banka is a private stem cell bank in Riga and part of the international FamiCord Group. Founded in 2004, the company collects, processes and cryopreserves umbilical cord blood and tissue from newborns, giving families access to stem cell storage services connected with regenerative medicine. It has been one of the longest-running cord blood banking providers in Latvia. Through its group affiliation, Cilmes šūnu banka applies international quality standards and connects Latvian families to a wider European stem cell banking network.

### **Circle K Business Centre**

Circle K Business Centre in Riga is a shared services centre supporting Circle K's fuel and convenience retail operations across Northern Europe. The centre provides back-office and specialist functions such as finance, IT, HR, procurement, logistics support and other business services for the group's operations in the Baltics, Scandinavia and Poland. Circle K itself is a

global convenience and mobility retailer. The Riga centre reflects Latvia's role as a competitive location for international business services and multilingual support functions.

### **CPB Real Estate Services**

CPB Real Estate Services SIA is the Latvian office of CPB Group, a Baltic-focused real estate advisory and services company. The company provides real estate investment advisory, valuation, asset services, property management, leasing and market analysis for commercial property clients. CPB combines local market knowledge with cross-Baltic expertise and supports investors, developers and occupiers in making property decisions. Its Latvian presence contributes to professional real estate services and investment activity in the Baltic commercial property market.

### **Dalgas**

Dalgas is the Estonian operation of the Danish environmental and land management company Dalgas, historically connected with Hedeselskabet. The company provides forestry, landscaping, afforestation, nature restoration and land-use services to private and public clients. Its expertise covers sustainable forest management, biodiversity-related projects and green infrastructure. In the Baltic context, Dalgas represents Nordic environmental know-how applied to forestry, land development and long-term natural resource management.

### **Deloitte Latvia**

Deloitte Latvia is part of Deloitte's global professional services network and provides audit, tax, consulting, risk management, financial advisory and legal advisory services in Latvia. The Riga office serves local and international clients across industries, combining knowledge of the Latvian market with Deloitte's global methodologies and sector expertise. Deloitte Latvia supports companies with assurance, transformation, compliance and strategic advisory work. Its presence strengthens Latvia's professional services ecosystem and supports cross-border investment and corporate governance standards.

### **DHL Express Latvia**

DHL Express Latvia SIA is the Latvian subsidiary of DHL, the global express logistics and courier company. It provides international parcel, document and freight delivery services, connecting Latvian businesses and consumers with DHL's worldwide network. The company supports exports, e-commerce, time-sensitive deliveries and supply chain operations from Latvia. DHL Express Latvia's presence strengthens the country's logistics infrastructure and enables companies operating in Latvia to access global markets more efficiently.

### **Eco Baltia vide**

Eco Baltia vide is one of Latvia's major environmental management companies and part of the Eco Baltia group, a leading Baltic environmental management and recycling group. The company provides household and sorted waste collection, packaging waste management, construction and bulky waste services, territory cleaning and seasonal environmental services. Its operations serve residents, municipalities and businesses across Latvia, including Riga and several surrounding municipalities. Eco Baltia vide plays an important role in expanding waste sorting, recycling and circular economy practices in the Latvian market.

### **Enefit Green**

Enefit Green is the renewable energy company of the Eesti Energia group and one of the largest renewable power producers in the Baltic region. In Latvia, Enefit Green develops and operates wind and solar energy projects, contributing to the country's transition toward a more diversified and lower-carbon energy mix. The company brings Estonian energy sector

experience and regional renewable development capacity to the Latvian market. Its activities support Baltic energy security, renewable generation growth and cross-border energy cooperation.

### **European Energy**

European Energy is a Danish renewable energy developer active in wind, solar and power-to-X projects across Europe. In Latvia, the company is developing and building major solar energy projects, including a large-scale solar farm near Tārgale in Ventspils municipality. European Energy brings international renewable project development, financing and construction expertise to the Latvian market. Its investments support Latvia's renewable energy capacity, energy independence and transition toward a lower-carbon electricity system.

### **Eversheds Sutherland Bitāns SIA**

ZAB Eversheds Sutherland Bitāns SIA is the Latvian office of Eversheds Sutherland, one of the world's largest corporate law firm networks. The Riga team provides business law services to local and international clients, including advice on corporate, commercial, employment, real estate, tax, dispute resolution and regulatory matters. The firm combines Latvian legal expertise with access to an international network of offices across major economic centres. Its presence supports foreign investors requiring cross-border legal advice and local market implementation.

### **GFP Latvia**

GFP Latvia SIA is a Ventspils-based plastics and packaging manufacturing company connected with the Green Form Packaging concept. The company focuses on sustainable FMCG packaging solutions and is registered in Latvia with operations linked to Ventspils High Technology Park. Its activities fit within the wider shift toward recyclable and more environmentally responsible packaging materials. GFP Latvia contributes to Latvia's manufacturing base in packaging and plastics, with potential links to export-oriented supply chains.

### **Gren Latvija**

Gren Latvija is part of Gren Group, a Northern European green energy company specialising in district heating, cooling and industrial energy solutions. In Latvia, Gren operates major district heating systems, including in Jelgava and Daugavpils, using biomass, recovered energy and other sustainable energy sources. The company supplies reliable heat to households, public institutions and businesses while investing in more efficient and lower-emission energy infrastructure. Gren Latvija forms part of the group's wider Baltic and Nordic strategy focused on decarbonisation and resilient local energy systems.

### **HansaMatrix**

HansaMatrix is a Latvian electronics manufacturing services company providing full-cycle electronic systems and component manufacturing. It serves sectors such as transportation, telecommunications, energy management, IoT, medical technology and defence. The company operates production and engineering facilities in Latvia and works with original equipment manufacturers that require product development support and efficient manufacturing. HansaMatrix is one of the best-known examples of Latvia's electronics and high-value manufacturing capacity.

### **INESTA Consulting and Trading SIA**

INESTA Consulting and Trading SIA is a Latvia-based company active in integrated waste management solutions, environmental equipment and consultancy. The company works with technology partners to provide equipment such as shredders, balers, compactors, refuse collection vehicles, containers and other waste handling systems. It also supports clients with consulting and practical waste management services. INESTA's activities connect Latvia's environmental services market with specialised equipment and know-how from international suppliers.

### **Jensen Metal**

Jensen Metal is a Liepāja-based metalworking and mechanical engineering company connected with Denmark's Jensen Metal group. The company manufactures steel, stainless steel and aluminium components, machines and complete systems for industrial customers. Its activities include metal processing, welding, assembly and engineering solutions for sectors requiring durable and precise metal products. Jensen Metal's Latvian operations reflect long-term Danish investment in Latvia's metalworking capacity and export-oriented industrial production.

### **Kärcher Technology Latvia SIA**

Kärcher Technology Latvia SIA is a Latvian manufacturing company connected with Kärcher, the German family-owned global leader in cleaning technology. Based in Jelgava municipality, the company supports Kärcher's production and technology operations in Latvia. Kärcher's wider product portfolio includes professional and household cleaning equipment, industrial cleaning systems and related technologies. The Latvian operation contributes to the group's manufacturing footprint and demonstrates foreign industrial investment in Latvia's engineering and equipment sector.

### **Kings College School Latvia SIA**

Kings College School Latvia SIA operates King's College Latvia, an international school in Latvia connected with the King's College schools' network. The school provides education based on international and British educational traditions, serving local and expatriate families. It contributes to Latvia's international education infrastructure, which is important for attracting and retaining foreign investors and internationally mobile professionals. The company's presence supports the wider ecosystem needed by foreign companies and their employees in Latvia.

### **Klippan Textil AB**

Klippan Textil AB, through SIA Klippan Saule in Latvia, is connected with Sweden's Klippan Yllefabrik group, a textile company specialising in wool and home textile products. The Latvian production operation supports spinning, weaving and textile manufacturing for blankets, throws, yarns and other woollen products. It helps the Swedish group maintain a European production base and supply international customers with natural-fibre textile products. The company reflects foreign investment in Latvia's traditional textile manufacturing skills.

### **Knauf**

SIA Knauf is the Latvian company of the international Knauf building materials group. Established in Latvia in 1994, the company operates from Saurieši and manufactures gypsum plasterboard, dry mixes, metal profiles and other construction materials for the Baltic market. Knauf has invested substantially in modernising the former Saurieši building materials

production facilities, turning them into an important regional manufacturing base. The company supplies construction systems and materials used in residential, commercial and infrastructure projects throughout Latvia and neighbouring markets.

### **KPMG Baltics**

KPMG Baltics SIA is the Latvian member firm within KPMG's Baltic professional services network. It provides audit, tax, legal, accounting and advisory services to private and public sector clients, working closely with KPMG offices in Lithuania and Estonia. The firm supports companies with assurance, compliance, transaction advisory, risk management and business transformation services. As part of a global professional services network, KPMG Baltics SIA contributes to international standards, investor confidence and cross-border business support in Latvia.

### **KVIST**

SIA KVIST is the Latvian production company of Denmark's Kvist Industries A/S, a furniture manufacturer specialising in high-quality wood furniture and components. Located in Mālpils, the Latvian operation employs several hundred people and supports mass production and specialised industrial furniture production for international customers. Kvist's work covers solid and moulded wood know-how, furniture parts and supply chain solutions for the design furniture industry. SIA KVIST is an important example of Danish manufacturing investment in Latvia's wood and furniture sector.

### **LSEZ SIA 'Lesjöfors Springs LV'**

LSEZ SIA 'Lesjöfors Springs LV' is the Liepāja Special Economic Zone company of the Swedish Lesjöfors group, a specialist manufacturer of springs and pressings. Located in Liepāja, the company produces industrial springs and related components for international customers. It forms part of Lesjöfors' wider European manufacturing network and benefits from Liepāja's industrial and logistics environment. The company represents foreign investment in specialised metal component production and precision manufacturing in Latvia.

### **LETTRI**

LETTRI, SIA is a Latvian metalworking company registered in Riga, with production activity linked to metal processing and component manufacturing. The company has operated in Latvia since the 1990s and serves industrial customers requiring mechanical processing and manufactured metal parts. Its activities fit within Latvia's specialised manufacturing base, where smaller engineering companies supply components and services to regional and international value chains. LETTRI represents foreign-linked investment in Latvia's metalworking and industrial subcontracting sector.

### **Liden & Denz Riga**

SIA Liden & Denz Riga operates the Riga campus of the Liden & Denz Intercultural Institute of Languages. The organisation teaches Russian, Latvian and Ukrainian as foreign languages and is part of a language education network founded in 1992. The Riga school is located in the city centre and serves international students, professionals and private learners. As a Swiss-owned education provider in Latvia, Liden & Denz Riga contributes to language training, intercultural education and international education services.

### **Linstow Baltic**

Linstow Baltic SIA is the Latvian subsidiary of the Norwegian Linstow Group, a major real estate developer and property manager in the Baltics. The company is known for significant

commercial projects in Riga, including shopping centres, transport-linked retail assets and office developments such as the Origo area and Satekles Business Centre. Linstow Baltic has been active in Latvia for decades, bringing Norwegian investment and long-term property management expertise to the market. Its projects have contributed to the modernisation of Riga's commercial and urban environment.

### **Livonia Print**

Livonia Print is a Riga-based book production company and one of the leading book manufacturers in Northern Europe. The company produces high-quality hardcovers, paperbacks, board books and digitally printed books for publishers around the world. Its services combine multilingual customer support, modern printing technologies and efficient manufacturing processes. Livonia Print is an important export-oriented printing and publishing industry supplier, demonstrating Latvia's competitiveness in specialised manufacturing and creative industry services.

### **Mariner**

Mariner refers to the Mariner group's Latvian logistics and port-related activities, connected with the development and management of seaport terminals and logistics operations. Mariner has a long-standing presence in Latvia through Baltic Container Terminal in Riga and related logistics companies. Its Latvian operations support container handling, port services and logistics flows linking Latvia with international shipping routes. The group's investment in port infrastructure reflects the role of foreign capital in strengthening Latvia's transport, logistics and trade connectivity.

### **MSC Shared Service Center Riga**

MSC Shared Service Center Riga SIA is a Riga-based business services centre supporting Mediterranean Shipping Company's international operations. The centre has operated since 2000 and provides remote business support to MSC offices in more than 50 countries, including functions linked to shipping, logistics, customer service, finance and IT. MSC is a global shipping and logistics group headquartered in Geneva. The Riga shared service centre highlights Latvia's position as a multilingual service hub for global transport and logistics companies.

### **Nasdaq Riga**

Nasdaq Riga is the only regulated secondary securities market in Latvia and forms part of the integrated Nasdaq Baltic market together with Nasdaq Tallinn and Nasdaq Vilnius. The exchange provides market infrastructure for trading shares, bonds and other financial instruments, and offers companies a channel to raise capital through public markets. Nasdaq Riga supports transparency, investor access and capital market development in Latvia. As part of Nasdaq's international exchange network, it connects Latvian issuers and investors with the wider Baltic and global financial ecosystem.

### **SIA Nordic Homes**

SIA Nordic Homes is a Latvian manufacturer and developer of prefabricated modular and timber-frame buildings. Established in 2010, the company has grown from private home production into a full-cycle real estate and modular construction business, serving target markets such as Germany and Iceland. Nordic Homes produces high-insulation timber-frame modules and panels and provides solutions from design to turnkey construction. Its activities combine sustainable construction, timber know-how and export-oriented manufacturing capacity in Latvia.

### **Novartis Baltics**

Novartis Baltics is the Latvian affiliate of Novartis, the Switzerland-based global pharmaceutical company. Novartis has been operating in Latvia since 1997 and works to provide innovative medicines and healthcare solutions to patients and healthcare professionals. The company's Latvian presence supports access to therapies, cooperation with medical professionals, patient safety and participation in the broader Baltic healthcare ecosystem. As part of a major global life sciences group, Novartis Baltics contributes to the availability of modern pharmaceutical innovation in Latvia.

### **Omniva**

Omniva is the Estonian state-owned postal and logistics group operating across the Baltic States, with Omniva Latvia providing parcel, postal and e-commerce delivery services in Latvia. The company is particularly known for its extensive parcel locker network, which supports rapidly growing e-commerce flows and cross-border deliveries. Omniva's Baltic operations combine traditional postal services with modern digital logistics and self-service infrastructure. In Latvia, the company has become an important last-mile delivery and parcel logistics provider for consumers and businesses.

### **ORLEN Latvija**

SIA ORLEN Latvija is the Latvian company of the ORLEN Group, one of Central and Eastern Europe's largest integrated energy and petrochemical groups. In Latvia, the company is engaged in petroleum product wholesale, logistics and energy solutions, supplying fuel to businesses and infrastructure customers. It operates as the Latvian market presence of ORLEN Lietuva and supports the wider group's regional energy supply chain. Through its activities, ORLEN Latvija contributes to fuel availability, industrial logistics and energy security in the Latvian market.

### **Pearl Latvija**

SIA Pearl Latvija is the Latvian company of Pearl Group, a Nordic digital ERP and commerce consultancy. Pearl Group is known for SAP-based business solutions, e-commerce platforms and digital transformation services for private and public sector customers. The Riga office provides IT consulting, implementation, support and digital business services, drawing on Latvia's technology talent. Pearl Latvija strengthens the local ICT sector by connecting Latvian specialists to Nordic and European enterprise technology projects.

### **q.beyond**

SIA q.beyond is the Latvian branch of q.beyond AG, a German cloud, SAP and digital transformation services provider. Established in Riga as q.beyond's first office outside Germany, the Latvian team provides SAP Basis, cloud administration, DevOps and IT operations support for clients in the Baltics and beyond. The Riga office expands the group's service capacity and draws on Latvia's strong IT talent pool. q.beyond's presence contributes to Latvia's growing role as a location for international digital and cloud service delivery.

### **RETTENMEIER BALTIC TIMBER**

Rettenmeier Baltic Timber is the Latvian sawmill operation of Germany's Rettenmeier group. Located in Inčukalns, the Baltic Timber plant is positioned near Latvia's forest resources and produces high-quality sawn timber products for industrial, construction, retail and DIY customers. The site is described by the group as one of the most modern and largest sawmills

in the Baltic region, supported by significant investment. Rettenmeier Baltic Timber links Latvia's forestry resources with international timber processing and export markets.

### **Roche Latvija**

Roche Latvija SIA is the Latvian affiliate of Roche, the Switzerland-based global healthcare and diagnostics company. The company provides pharmaceuticals, diagnostics equipment and related healthcare solutions to hospitals, laboratories and healthcare professionals in Latvia. Roche's Latvian operations support access to innovative therapies, personalised healthcare and modern diagnostic technologies. The company is part of Roche Group's wider European network and contributes to the development of Latvia's healthcare and life sciences ecosystem.

### **Samsung**

Samsung Electronics Baltics SIA is the Baltic representation of Samsung Electronics, covering Latvia, Lithuania and Estonia. Based in Riga, the company supports the sale and marketing of Samsung consumer electronics, mobile devices, home appliances, televisions, displays and business technology solutions. Samsung is one of the world's leading technology companies, and its Baltic operation connects Latvian consumers and businesses with the group's global product portfolio. The company contributes to the region's consumer electronics, ICT and business technology markets.

### **SCHWENK**

SCHWENK is a German building materials group founded in 1847, operating in Latvia and Estonia through its regional subsidiaries. In Latvia, SCHWENK owns and operates the Brocēni cement plant, the country's only cement production facility, and supplies cement, concrete and aggregates to the construction sector. The Latvian plant is recognised for modern production technology and an increasing focus on alternative fuels and lower-carbon building materials. In Estonia, SCHWENK has expanded its concrete activities, strengthening the group's construction materials presence across the Baltic region.

### **SEB**

SEB is one of the largest financial services groups in the Nordic and Baltic region, with AS SEB banka operating as its Latvian subsidiary. SEB in Latvia provides retail, corporate and institutional banking services, including financing, deposits, payments, cards, investment services and digital banking. The bank is a major lender to Latvian businesses and households and is closely integrated with SEB Group's Baltic operations. SEB's presence supports financial stability, business investment and cross-border Nordic-Baltic economic links.

### **SIRIN**

SIRIN is a Baltic logistics real estate developer specialising in A++ class industrial property, logistics parks and build-to-suit warehouse projects. The company operates across the Baltic States and is expanding its Latvian portfolio, including logistics parks near Riga Airport and new business park developments around Riga. SIRIN provides modern warehouse leasing and development solutions for logistics, retail, manufacturing and distribution clients. Its activities support the growth of Latvia's logistics infrastructure and regional supply chain capacity.

### **Stora Enso Latvija AS**

AS Stora Enso Latvija is the Latvian operation of Stora Enso, the Finnish-Swedish renewable materials company focused on packaging, biomaterials and forest products. In Latvia, the

company's activities include corrugated packaging and paper-based solutions for local and export markets. It is part of Stora Enso's wider Packaging Materials and Packaging Solutions business, using renewable fibre-based materials as alternatives to fossil-based products. Stora Enso Latvija supports Latvia's manufacturing, packaging and export ecosystem through international industrial know-how.

### **Swisscom**

Swisscom is Switzerland's largest telecommunications company and is represented in Latvia through its Riga technology and DevOps centre. The Latvian team supports Swisscom's software, cloud, automation and infrastructure development work. Through this presence, Swisscom uses Latvia as a European technology talent hub while keeping development closely connected to its Swiss operations. The company's investment strengthens Latvia's ICT sector and demonstrates the country's competitiveness for advanced digital engineering functions.

### **Swisscom DevOps Centre Latvia**

Swisscom DevOps Centre Latvia is the Riga development centre of Swisscom, Switzerland's largest telecommunications company. Established in 2020, the centre employs software engineers and DevOps specialists working on cloud, automation, infrastructure and product development projects. The Latvian team works closely with Swisscom's Swiss headquarters and other technology units. The centre demonstrates Latvia's ability to attract high-value ICT functions from major European telecommunications companies.

### **Taaleri Energia**

Taaleri Energia is a Finnish renewable energy investment and asset management platform focused on wind, solar and battery energy storage projects. In Latvia, Taaleri Energia's SolarWind III Fund has invested in the Smilteneonshore wind farm project, a 112 MW renewable energy development in north-eastern Latvia. The project is being developed with institutional partners and supports the expansion of Latvia's renewable generation capacity. Taaleri Energia brings international capital and renewable energy development expertise to the Latvian energy market.

### **TRY RIGA**

SIA TRY RIGA is a Latvia-registered digital and creative services company operating under the TRY Dig brand. The company provides digital solutions for customer journeys, including strategy, design, development, marketing technology and related online services. Based in Riga, it serves clients that require full-service digital agency support and modern customer experience solutions. TRY RIGA adds to Latvia's creative technology and digital services sector, where international and local expertise increasingly overlap.

### **TV3 Group Latvia**

TV3 Group Latvia is the Latvian operation of TV3 Group, the leading commercial media group in the Baltic States. In Latvia, the group includes TV channels such as TV3, TV3 Life, TV3 Mini, TV3 Plus and TV6, radio stations including Star FM and Top Radio, the Go3 streaming service, TV3 Play and the tv3.lv news portal. The company produces and distributes local entertainment, news, sports and digital content. TV3 Group Latvia is an important player in Latvia's media, advertising and digital entertainment market.

### **Vastint Latvia**

Vastint Latvia SIA is the Latvian branch of Vastint Holding, the real estate group connected with Inter IKEA Group. Active in Latvia since 2003, the company develops and manages

commercial, residential and mixed-use real estate projects. Its portfolio includes major Riga developments such as the Magdelēnas kvartāls area and other long-term urban projects. Vastint Latvia focuses on sustainable development, active property management and high-quality urban environments, contributing significant international investment to Latvia's real estate market.

### **Visma Enterprise SIA**

Visma Enterprise SIA is part of Visma's Latvian business software operations, providing IT solutions that support digitalisation and efficiency for organisations. The company offers business software and related services for private and public sector clients, including systems for finance, administration and organisational management. As part of the wider Visma group, it benefits from Nordic and European product development expertise while serving Latvian customers locally. Visma Enterprise SIA contributes to the modernisation of business processes and digital public administration tools in Latvia.

### **Visma Labs**

Visma Labs SIA is a Riga-based software development centre of Visma Group, a Norwegian-founded European SaaS and business software company. The Latvian team works on research and development, testing and support for Visma's business software products used by companies and public sector organisations across Europe. Visma Labs has grown into one of Visma's important technology hubs in the region. Its activities strengthen Latvia's IT sector by creating high-value software engineering and product development roles.

### **Vitol**

Vitol is a global energy and commodities company with a significant Latvian presence through Vitol Terminal Latvia in Ventspils. The terminal, formerly Ventspils Nafta Terminal, provides storage, blending and transshipment services for crude oil and refined petroleum products. Located at Ventspils Freeport, it is one of the largest and most technologically advanced petroleum terminals in the Baltic region. Vitol's investment in Latvia links the country's port infrastructure to international energy trading and logistics networks.

### **YIT LATVIJA**

YIT LATVIJA is the Latvian branch of YIT, one of Finland's largest construction and urban development companies. In Latvia, YIT develops and builds residential and commercial real estate, applying the group's construction standards, project management methods and Nordic experience. The company's projects include apartment buildings and other developments in Riga and surrounding areas. YIT LATVIJA contributes to Latvia's housing and construction market through long-term foreign investment, technical expertise and urban development capacity.

### **Yokohama**

Yokohama TWS Latvia LSEZ SIA is a Liepāja-based wheel and tyre-related manufacturing company, formerly part of Trelleborg Wheel Systems and now within Yokohama TWS. Located in the Liepāja Special Economic Zone, the company produces wheels and components for agricultural, construction and material-handling machinery. Its products support global industrial and off-highway vehicle markets. Yokohama's Latvian operation combines local manufacturing capacity with international technology and distribution networks.

**SIA Ziegler**

SIA Ziegler is a Daugavpils-based manufacturing company connected with the German ZIEGLER group, a producer of agricultural machinery and related metal products. The Latvian plant is one of the group's major production sites and manufactures equipment and components for harvesting, transport and cultivation solutions. The company employs skilled metalworking and mechanical engineering specialists in Latvia and exports products to international markets. Ziegler's Latvian operation is a significant example of German industrial manufacturing investment in eastern Latvia.

## Appendix 4. Research organisations that took part in the study

### **Affinity OÜ**

Affinity OÜ is an Estonia-based digital product and software development company headquartered in Tallinn. The company works with research, UX/UI design, prototyping and mobile application development, helping clients build digital products, systems and user-facing interfaces. Its workplaces it within Estonia's wider software development and product design ecosystem. Affinity OÜ reflects the role of specialised technology firms in supporting innovation, digital service design and practical product development in the Baltic region.

### **Baltic International Academy**

Baltic International Academy is a private higher education institution in Latvia, founded in 1992. The academy is an officially accredited Latvian higher education institution with the right to issue state-recognised higher education diplomas. It offers academic and professional study programmes at bachelor's and master's level and supports international cooperation through student mobility and academic partnerships. Baltic International Academy contributes to Latvia's higher education landscape by providing applied and internationally oriented study opportunities.

### **Center for Physical Sciences and Technology (FTMC)**

The Center for Physical Sciences and Technology (FTMC) is one of Lithuania's leading scientific research institutions. It conducts fundamental research and technological development in areas such as laser technologies, optoelectronics, nuclear physics, organic chemistry, bio- and nanotechnologies, electrochemical material science, functional materials and electronics. FTMC develops high technologies relevant to business and society and plays an important role in Lithuania's research and innovation system. Its breadth of scientific expertise makes it a significant advanced technology institution in the Baltic region.

### **Center of Food and Fermentation Technologies (TFTAK)**

The Center of Food and Fermentation Technologies, known as TFTAK, is an Estonian research and development organisation focused on food innovation and biotechnology. Based in Tallinn, TFTAK uses modern analytical methods and scientific expertise to support the development of smarter and more sustainable food solutions. Its work includes food research, bioprocess optimisation, fermentation technologies and biotechnology-related development. TFTAK contributes to Estonia's applied research capacity by connecting science with innovation needs in the food and biotech sectors.

### **Centre of Estonian Rural Research and Knowledge**

The Centre of Estonian Rural Research and Knowledge, known as METK, is a national competence centre under Estonia's Ministry of Regional Affairs and Agriculture. The centre conducts applied research and provided expertise, data and services to support sustainable agriculture, rural development, biodiversity and food security. It works with farmers, policymakers and other stakeholders to strengthen Estonia's agricultural knowledge base and rural resilience. METK plays an important role in translating research and field expertise into practical support for the rural economy.

### **Daugavpils University**

Daugavpils University is a public higher education and research institution located in Daugavpils, Latvia. The university offers study programmes at different academic levels and

provides research opportunities across natural sciences, social sciences, humanities and arts. It is an important regional knowledge institution in Latgale, supporting education, science and regional development. Daugavpils University contributes to Latvia's human capital and research capacity by combining teaching, research activity and international academic cooperation.

### **Demolit, UAB**

Demolit, UAB is a Lithuanian technology company specialising in decision-support solutions. The company develops and applies multi-criteria spatial decision support systems that help organisations manage complex information, planning and decision-making processes. Its work is linked to software development, spatial modelling and applied analytical tools. Demolit, UAB represents a specialised Lithuanian technology company working at the intersection of software, spatial analysis and practical decision support.

### **Estonian Academy of Arts**

The Estonian Academy of Arts is Estonia's only public university providing higher education in fine arts, design, architecture, media, visual studies, art history and conservation. Established in 1914 and based in Tallinn, the academy combines artistic education, research and professional training across creative and cultural disciplines. It supports Estonia's creative industries, cultural knowledge base and design capacity. The Estonian Academy of Arts is a central institution for developing creative talent, design thinking and cultural expertise in Estonia.

### **Estonian Military Academy, Centre of War and Disaster Medicine**

The Estonian Military Academy is an institution of applied higher education and military research for national defence in Estonia. It prepares commanders for the Estonian Defence Forces and supports the development of military science and leadership. Its Centre of War and Disaster Medicine provides specialist training and expertise related to war and disaster medicine, including preparation for Defence Forces personnel, reserve medics and medical students. Together, the Academy and the Centre contribute to Estonia's defence education, crisis preparedness and specialised medical training capacity.

### **Estonian University of Life Sciences**

The Estonian University of Life Sciences is a public university in Tartu focused on fields linked to sustainable use of natural resources. Its academic and research activities cover agriculture, forestry, animal science, veterinary science, food science, rural life and economy, and environmentally friendly technologies. The university connects education, research and applied knowledge in areas central to the bioeconomy and environmental sustainability. It is an important institution for strengthening Estonia's expertise in life sciences and natural resource management.

### **Estonian University of Life Sciences, Polli Horticultural Research Centre**

Polli Horticultural Research Centre is part of the Estonian University of Life Sciences and serves as a practical and scientific base for horticultural education and research. The centre supports fruit science studies through cultivar and fruit crop collections, field experiments, post-graduate supervision and applied research. Its work relates to fruit and berry cultivation, plant protection, organic gardening and horticultural technologies. Polli Horticultural Research Centre contributes specialised horticultural knowledge to Estonia's agricultural and food innovation ecosystem.

### **Foresight Centre at the Riigikogu**

The Foresight Centre is a think tank at the Riigikogu, the Estonian Parliament. Its role is to analyse long-term developments in society, identify new trends and prepare development scenarios that can support policymaking. The Centre studies alternative future pathways and helps strengthen anticipatory governance in Estonia. By providing structured foresight and socio-economic analysis, it supports evidence-informed strategic decision-making for the public sector and wider society.

### **Institute of Atomic Physics and Spectroscopy, University of Latvia**

The Institute of Atomic Physics and Spectroscopy is a scientific institute of the University of Latvia. It conducts fundamental and applied research in atomic physics, spectroscopy, photonics, quantum physics, laser technologies and related interdisciplinary fields. The institute also works on areas such as biophotonics, medical physics, environmental monitoring and precision optical measurements. Its research contributes to Latvia's capacity in advanced physics, photonics and interdisciplinary technology development.

### **Institute of Baltic Studies**

The Institute of Baltic Studies is an independent non-profit think tank founded in Estonia in 1996. Its main fields of activity are policy research, socio-economic analysis and local and international projects. The institute aims to support knowledge-based policy-making in Estonia, the Baltic Sea region and Europe. Through research in areas such as migration, integration, innovation and regional development, the Institute of Baltic Studies contributes analytical expertise to public policy and social development.

### **Institute of Electronics and Computer Science (EDI)**

The Institute of Electronics and Computer Science, known as EDI, is a state research institute in Latvia founded in 1960. It conducts fundamental and applied research in ICT, intelligent materials, engineering systems and smart embedded cooperative systems. EDI works on areas such as signal processing, embedded intelligence, robotics, smart sensors, IoT, precise event timing and remote sensing. The institute is an important part of Latvia's engineering and digital research ecosystem.

### **Latvian Institute of Horticulture (LatHort)**

The Latvian Institute of Horticulture, known as LatHort, is a leading Latvian research institution in horticulture. The institute conducts research ranging from plant biology to applied studies on environmentally friendly technologies in horticultural production and fresh commodity processing. Its work focuses on fruit, berry and vegetable research, plant varieties, sustainable growing technologies and health-promoting products. LatHort contributes to the development of practical and science-based solutions for Latvia's horticulture and food sectors.

### **Institute of Solid State Physics, University of Latvia**

The Institute of Solid State Physics, University of Latvia is an internationally recognised research centre in materials science and related cross-disciplinary fields. The institute conducts research in functional materials, coatings, nanotechnologies, photonics, energy materials and other advanced scientific areas. It also provides research solutions for industry and supports student education and scientific training. The institute is one of Latvia's key centres for materials research, innovation and technology transfer.

### **ISM University of Management and Economics**

ISM University of Management and Economics is a Lithuanian higher education institution specialising in management, economics and business education. The university positions itself as an international academic and business-oriented environment where students, academics and business leaders work closely together. It provides study programmes and executive education linked to leadership, management, economics and entrepreneurship. ISM contributes to Lithuania's business education ecosystem by connecting academic learning with practical business needs.

### **Kaunas Science and Technology Park**

Kaunas Science and Technology Park, also known as Tech-Park Kaunas, is a Lithuanian science and technology park supporting startups and growing technology companies. It provides business development consultations, innovation support services, incubation activities and community-building for companies in areas such as IT, engineering, health technologies, smart city solutions, green technologies and space technologies. The park also participates in business incubation initiatives linked to CERN and the European Space Agency. It supports innovation culture and technology entrepreneurship in the Kaunas region.

### **Kaunas University of Technology**

Kaunas University of Technology, known as KTU, is one of Lithuania's leading technological universities. It is recognised for innovation, research performance, study programmes and close cooperation with industry. The university works across engineering, technology, physical sciences, social sciences and interdisciplinary research areas. KTU contributes to Lithuania's knowledge economy by connecting higher education, research and business cooperation, and by supporting innovation-driven development in the region.

### **Centre of Excellence of AI for Sustainable Living and Working (SustAIInLivWork)**

The Centre of Excellence of AI for Sustainable Living and Working, known as SustAIInLivWork, is a Lithuanian centre of excellence focused on artificial intelligence-based research and innovation solutions. Its work is directed towards sustainable living and working, with applications in manufacturing, energy, health and transport sectors. The centre brings together research, innovation and applied AI expertise to support sustainable transformation. SustAIInLivWork contributes to Lithuania's ambition to strengthen advanced AI capacity and develop practical solutions for society and industry.

### **Klaipeda University**

Klaipeda University is a public multidisciplinary university located in Klaipeda, Lithuania. Over more than three decades, the university has developed academic and scientific directions linked to the region's maritime identity, social sciences, humanities, engineering, health sciences and environmental research. Its research institutes include the Institute of Baltic Region History and Archaeology and the Marine Research Institute. Klaipeda University contributes to Lithuanian higher education and research with a strong coastal and maritime profile.

### **Latvian Institute of Aquatic Ecology**

The Latvian Institute of Aquatic Ecology is an agency of Daugavpils University and a scientific institute focused on aquatic ecology. It conducts academic and applied research on the Baltic Sea, the Gulf of Riga, freshwater ecosystems and related environmental challenges. Its work includes marine monitoring, plankton and benthic organism dynamics, non-indigenous species,

pollutants such as microplastics, biodiversity conservation and spatial planning. The institute plays an important role in Latvia's marine and aquatic environmental research capacity.

### **Latvian Institute of Organic Synthesis**

The Latvian Institute of Organic Synthesis is a state research institute specialising in organic chemistry, pharmaceutical research, molecular biology and bioorganic chemistry. It is recognised as a leading drug discovery and development centre in the Baltics. The institute has long-standing expertise in medicinal chemistry, pharmacology, process chemistry, bioanalytical studies and related areas of pharmaceutical innovation. Its activities contribute to Latvia's life sciences sector and support research relevant to new medicines and health technologies.

### **Latvian State Institute of Wood Chemistry**

The Latvian State Institute of Wood Chemistry is a state research institute and one of the leading wood and biomass research centres in the Baltic region. Founded in 1946, it conducts research in wood chemistry, green synthesis, materials science, polymer chemistry and biotechnology. The institute's mission is to develop competitive materials and products from wood and other biomass using environmentally friendly and low-waste technologies. Its work supports Latvia's bioeconomy, sustainable materials research and wood-processing innovation.

### **Lithuania Business College**

Lithuania Business College is a Lithuanian higher education institution with activities dating back to 1994. It offers professionally oriented studies and presents itself as a modern and open institution focused on preparing specialists for the Lithuanian and European labour market. The college provides study programmes connected with business, management and related applied fields, while also supporting international cooperation. Lithuania Business College contributes to applied higher education and practical workforce development in Lithuania.

### **Lithuanian Academy of Music and Theatre**

The Lithuanian Academy of Music and Theatre is an internationally recognised higher education institution in Lithuania focused on artistic education. It trains artists and professionals in music, theatre, dance and film, while also offering related theoretical studies and research. Founded in 1933, the academy provides bachelor's, master's and doctoral-level studies through its faculties in Vilnius and Klaipeda. It is an important institution for Lithuania's cultural, creative and performing arts sectors.

### **Lithuanian Centre for Social Sciences**

The Lithuanian Centre for Social Sciences is a state research centre focused on economics, sociology and law. Its mission is to create and disseminate high-level scientific knowledge that supports public policy solutions, innovation and cooperation between science, business and society. The centre brings together social research expertise and contributes to evidence-based policy-making in Lithuania. Its work strengthens the country's analytical capacity in social sciences and public administration.

### **Lithuanian Energy Institute**

The Lithuanian Energy Institute is an internationally recognised research, development and innovation competence centre in the energy sector. It operates as a public institution and provides scientific expertise, research infrastructure and services related to future energy technologies. The institute's work supports energy innovation, technology development and cooperation with business and public sector partners. Lithuanian Energy Institute contributes

to Lithuania's energy research capacity and the transition towards more advanced and sustainable energy systems.

### **Lithuanian Research Centre for Agriculture and Forestry (LAMMC)**

The Lithuanian Research Centre for Agriculture and Forestry, known as LAMMC, is a Lithuanian research institution focused on agriculture, forestry and environmental management. Its activities include research on land and forest resources, sustainable agriculture, plant varieties, breeding programmes and knowledge transfer. The centre develops innovative technologies and products relevant to agricultural and forestry sectors. LAMMC contributes to Lithuania's capacity for science-based land use, food production, forestry and environmental sustainability.

### **Mykolas Romeris University**

Mykolas Romeris University is a Lithuanian university specialising in social sciences and humanities. It is named after Professor Mykolas Romeris, one of the key figures in Lithuania's constitutional law tradition. The university offers studies and research in areas such as law, public governance, business, communication, psychology, social work, security and human rights. Mykolas Romeris University contributes to Lithuania's public policy, legal and social science education ecosystem.

### **National Institute of Chemical Physics and Biophysics**

The National Institute of Chemical Physics and Biophysics is an interdisciplinary research institute in Estonia. It carries out basic and applied research in materials science, particle physics, informatics, health sciences and environmental sciences. The institute combines expertise from physics, chemistry, biology and technology-related disciplines. It contributes to Estonia's scientific capacity by supporting advanced interdisciplinary research and participation in international scientific cooperation.

### **National Science Platform (NSP) FOTONIKA-LV of the University of Latvia**

The National Science Platform FOTONIKA-LV of the University of Latvia is a research platform focused on photonics and related technologies. It brings together scientific expertise in photonics, quantum technologies, space research-related applications and interdisciplinary research connected with light-based technologies. The platform supports cooperation between scientific institutions and strengthens Latvia's research capacity in high-technology fields. FOTONIKA-LV contributes to the development of photonics as an important area for science, innovation and industrial application.

### **Riga Graduate School of Law**

Riga Graduate School of Law is a specialised higher education institution in Latvia focused on law, international relations, diplomacy, business and European studies. It offers internationally oriented study programmes and professional education linked to legal and policy fields. The school brings together academic expertise, practitioner experience and regional and European perspectives. Riga Graduate School of Law contributes to Latvia's capacity in legal education, governance, international policy and professional training.

### **Rīga Stradiņš University**

Rīga Stradiņš University is a Latvian university with a strong profile in health sciences, medicine, dentistry, pharmacy, public health, social sciences and related fields. It provides higher education and research opportunities for Latvian and international students. The university is known for combining medical and healthcare education with social science and

policy-oriented disciplines. Rīga Stradiņš University contributes significantly to Latvia's healthcare workforce, research capacity and international higher education profile.

### **Riga Technical University**

Riga Technical University is Latvia's largest science and technology university and a major centre for engineering, technology and applied research. The university offers study programmes and conducts research in areas such as engineering, architecture, information technologies, energy, materials science, transport and business. It cooperates with industry and public sector partners to support innovation and technology transfer. Riga Technical University plays a central role in strengthening Latvia's technical expertise and innovation ecosystem.

### **STACC OÜ**

STACC OÜ is an Estonian technology and research company working with data science, artificial intelligence and machine learning solutions. The company helps organisations apply advanced analytics, software and AI-based tools to improve products, processes and decision-making. Its work connects research competence with practical business and public sector applications. STACC OÜ contributes to Estonia's digital innovation ecosystem by supporting the development and use of data-driven technologies.

### **Stockholm School of Economics in Riga (SSE Riga)**

Stockholm School of Economics in Riga is a business school in Latvia founded in 1994. It offers education in economics and business administration and is known for an international learning environment and strong links with business and policy communities. The school provides bachelor's, executive education and research-related activities, including work on competitiveness, economic policy and business development. SSE Riga contributes to the development of business leadership, economic analysis and management education in the Baltic region.

### **Tallinn Strategic Management Office**

Tallinn Strategic Management Office is a city-level institution supporting the strategic management of Tallinn, the capital of Estonia. Its responsibilities are linked to city strategy, development planning, governance support, data-informed decision-making and coordination of cross-cutting municipal priorities. The office helps align Tallinn's long-term development objectives with practical implementation across city services and policy areas. It contributes to urban governance, strategic planning and public sector innovation in Estonia's largest city.

### **Tallinn University of Technology (TalTech)**

Tallinn University of Technology, known as TalTech, is Estonia's leading university of engineering, technology, business and science. It provides education and research in areas such as engineering, information technology, natural sciences, business, governance and maritime studies. TalTech cooperates closely with companies and public sector partners to support innovation and technology transfer. The university is a central institution in Estonia's digital, industrial and research ecosystem.

### **Tartu College, School of Engineering, Tallinn University of Technology (TalTech)**

Tartu College is part of the School of Engineering of Tallinn University of Technology. Located in Tartu, the college supports engineering education and regional access to TalTech's academic and applied expertise. Its activities are connected with technical education, engineering knowledge and cooperation with local and regional partners. Tartu College

contributes to TalTech's wider role in developing engineering competence beyond Tallinn and supporting regional innovation capacity.

### **TalTech Virumaa College, Virumaa Innovation Centre of Digitalisation and Green Technologies**

TalTech Virumaa College is a regional college of Tallinn University of Technology located in north-eastern Estonia. It is linked to the Virumaa Innovation Centre of Digitalisation and Green Technologies, which supports the development and application of digital and green technologies in the region. The college provides education, applied research and cooperation with industry in fields relevant to industrial transformation. It contributes to regional skills development, technology transfer and the green transition in Virumaa.

### **Transport and Telecommunication Institute (TSI)**

Transport and Telecommunication Institute, known as TSI, is a higher education and research institution in Latvia focused on transport, logistics, aviation, telecommunications, computer science and related fields. The institute offers study programmes and research activities connected with engineering, digital technologies and mobility systems. Its work supports professional education and applied knowledge in sectors important for connectivity and infrastructure. TSI contributes to Latvia's transport, logistics and ICT education ecosystem.

### **University of Latvia**

The University of Latvia is one of Latvia's largest and most important higher education and research institutions. It offers study programmes and conducts research across natural sciences, humanities, social sciences, medicine, law, education, business and interdisciplinary fields. The university hosts a range of faculties, institutes and research platforms that contribute to national science and innovation. The University of Latvia plays a central role in developing human capital, research capacity and knowledge-based development in Latvia.

### **University of Tartu**

The University of Tartu is Estonia's national university and one of the leading research universities in the Baltic region. Founded in 1632, it provides education and research across a broad range of disciplines, including humanities, social sciences, medicine, natural sciences and technology. The university is internationally recognised for its research output, academic quality and contribution to Estonia's knowledge economy. The University of Tartu is a key institution for science, innovation and higher education in Estonia.

### **Ventspils University of Applied Sciences**

Ventspils University of Applied Sciences is a Latvian higher education and research institution located in Ventspils. It offers study programmes and research activities in areas such as translation studies, business, information technologies, electronics, engineering and communication. The university is also connected with applied research and technology development through its institutes and regional cooperation. Ventspils University of Applied Sciences contributes to education, research and innovation capacity in western Latvia.

### **Vilnius Gediminas Technical University (VILNIUS TECH)**

Vilnius Gediminas Technical University, known publicly as VILNIUS TECH, is a Lithuanian university focused on technology, engineering and innovation. It provides education and research in fields such as civil engineering, architecture, transport, electronics, mechanics, information technologies, environmental engineering and business management. The university works closely with industry and supports applied research and technology transfer.

VILNIUS TECH contributes to Lithuania's engineering talent, infrastructure expertise and innovation-driven economic development.

### **Vilnius University**

Vilnius University is one of the oldest and largest universities in Lithuania. Founded in 1579, it provides education and research across humanities, social sciences, natural sciences, medicine, law, business and technology-related fields. The university is a major research institution with international academic cooperation and a broad network of faculties and institutes. Vilnius University plays a central role in Lithuania's higher education, scientific research and knowledge-based development.

### **Vytautas Magnus University**

Vytautas Magnus University is a public university in Kaunas, Lithuania, known for its liberal arts tradition and broad academic profile. The university offers studies and research across humanities, social sciences, natural sciences, arts, education, agriculture and other interdisciplinary fields. It supports internationalisation, multilingual studies and cooperation with academic and social partners. Vytautas Magnus University contributes to Lithuania's higher education ecosystem by combining broad-based education with research and international engagement.

## Appendix 5. Guidelines for research: survey and interview questions for foreign investors in Latvia

### Survey questions

**1. Please provide the name of your company.**

Open field

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**2. Please indicate the main type of economic activities in your company, based on NACE Rev.2.**

Dropdown list of economic activities under NACE Rev.2

- Agriculture, forestry and fishing
- Mining and quarrying
- Manufacturing
- Electricity, gas, steam and air conditioning supply
- Construction
- Wholesale and retail trade; repair of motor vehicles and motorcycles
- Accommodation and food service activities
- Transportation and storage
- Information and communication
- Financial and insurance activities
- Real estate activities
- Professional, scientific and technical activities
- Administrative and support service activities
- Education
- Human health and social work activities
- Arts, entertainment and recreation
- Other service activities

**3. Does foreign capital represent at least 50% of total investment of your company in Latvia?**

One answer option

- Yes
- No

**4. Is the annual turnover of your company in Latvia above 145 000 EUR?**

One answer option

- Yes
- No

*Investment climate*

**5. Overall, from the perspective of your company, what is the current investment attractiveness of Latvia?**

One answer option

1	2	3	4	5
Very low	Low	Moderate	High	Very high

**6. Please assess the work that the Latvian public sector officials have done to improve the investment climate in Latvia over the last year.**

One answer option

1	2	3	4	5
Very poor	Poor	Moderate	Good	Excellent

**7. Please assess progress achieved over the last year in addressing challenges in the following key areas.**

Matrix (1 – Very low, 2 – Low, 3 – Moderate, 4 – Good, 5 – Excellent, plus 'Don't know')

Statement	1	2	3	4	5	Don't know
Defence						
Availability of labour						
Investment incentives						
Education and requalification						

**8. Please briefly explain your assessment of progress over the last year.**

Open field

\_\_\_\_\_

**9. Please assess progress of the following drivers of Latvia's economic competitiveness over the last 4 years.**

Matrix (1 – Very low, 2 – Low, 3 – Moderate, 4 – High, 5 – Very high, plus 'Don't know')

Statement	1	2	3	4	5	Don't know
Innovation ecosystem – cooperation between government, business and universities						

Science, technology and innovation						
Education and requalification						
Health care system						
Social security						
Infrastructure						
Availability of labour (management level)						
Availability of labour ('hands')						
Productivity						
Low production costs						
Tax system						
Legal system						
Standard of living in Latvia						
Attitudes towards foreign investors						
Investment incentives						
Defence						
Energy resources						
Other (please specify below)						

If selected "Other" in the previous question, please specify here:

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**10. Please select three areas among the below listed that, in your view, require urgent attention of the policymakers in Latvia.**

Multiple choice question (max. 3 options)

- Innovation ecosystem – cooperation between government, business and universities
- Science, technology and innovation
- Education and requalification
- Healthcare system
- Social security
- Physical infrastructure (e.g., roads, office spaces)
- Digital infrastructure
- Availability of labour (management level)
- Availability of labour ('hands')
- Productivity
- Knowledge of foreign language(s)
- Production costs

- Tax system
- Legal system (e.g., business regulations, court procedures)
- Transparency of the business environment
- Stability of the political environment
- Sustainability of the macroeconomic environment
- Access to finance (e.g., credit, grant)
- Investment incentives (e.g., business support policies)
- Attitudes towards foreign investors
- Standard of living
- Defence
- Energy resources
- Other (please specify below)

If selected "Other" in the previous question, please specify here:

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**11. In your opinion, what are the three key strengths of the investment climate in Latvia?**

Multiple choice question (max. 3 options)

- Business Regulations
- Domestic Market Growth
- Government Incentives
- Digital Infrastructure
- Physical Infrastructure, Logistics & Connectivity
- Labour Costs
- Proximity to Markets
- Real Estate
- Talent Pool
- Taxation
- Technology and Knowhow
- Utilities
- Quality of Life
- Other (please specify below)

If selected "Other" in the previous question, please specify here:

---

**12. Does your company plan to increase investment in Latvia (please answer for the country where your company is registered)?**

One answer option

- Yes

- No
- It depends (please clarify below)

If selected "It depends" in the previous question, please clarify here:

---

### ***Innovation***

*Company R&D&I (research, development, innovation) activities*

**13. Please specify the type of innovation(s) your company has introduced over the previous 4–5 years.**

Multiple response

- Product innovation (e.g., new physical products, materials, components)
- Service innovation (e.g., servitisation of products, integrated product-service solutions)
- Process innovation (e.g., AI integration, resource-efficiency processes)
- Business model innovation (e.g., circular economy models, subscription/usage-based models)
- Organisational innovation (e.g., new management practices, new skills development)
- Marketing & market innovation (e.g., new brand strategy, entry into new markets)
- Other (please specify below)

If selected "Other" in the previous question, please specify here:

---

**14. Please assess the extent to which the following types of innovation stakeholders have been critical for improving innovation in your company over the previous 4–5 years.**

Matrix (1 – Very small, 2 – Small, 3 – Moderate, 4 – Large, 5 – Very large)

Statement	1	2	3	4	5
Large companies					
SMEs (small and medium-sized enterprises)					
Start-ups & scale-ups					
Universities & research organisations					
NGOs					

*Assessment of the innovation ecosystem*

**15. Please assess the following aspects of Latvia’s innovation ecosystem.**

Matrix (1 – Very low, 2 – Low, 3 – Moderate, 4 – High, 5 – Very high, plus 'Don't know')

Statement	1	2	3	4	5	Don't know
Availability of talent for R&D&I						
Access to R&D&I funding						
Quality of applied research						
Availability of stakeholders (companies, research organisations etc.) willing to conduct R&D&I activities in collaboration						
Local demand for innovative products and services						
Quality of digital and physical infrastructure for R&D&I (e.g., laboratories)						
Quality of support from institutions, focused on innovation, technology & knowledge transfer (e.g., incubators, clusters, innovation hubs)						
Quality of innovation governance and regulations (e.g., intellectual property protection)						
Availability of public support for R&D&I collaboration						
Availability of public support for scaling innovations (within and beyond Latvia)						
Innovation culture and risk tolerance						

**16. Based on your assessment, please suggest how to improve the two, in your view, most critical aspects of Latvia’s innovation ecosystem.**

Open field

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**17. Please assess the extent to which the following top strengths of the investment climate in Latvia contribute to strengthening the innovation ecosystem.**

Matrix (1 – Very low, 2 – Low, 3 – Moderate, 4 – High, 5 – Very high, plus 'Don't know')

Statement	1	2	3	4	5	Don't know
Digital infrastructure						
Physical infrastructure						
Logistics & connectivity						
Proximity to markets						
Labour costs						
Talent pool						
Quality of life						

*Key innovation-driven investment opportunities and policy instruments*

**18. Please select at least three Latvia's industries with the highest innovation potential, and the industries which would benefit from stronger R&D&I collaboration with the Baltic States.**

Matrix (multiple choice — tick each applicable column)

Statement	Highest innovation potential	Would benefit from stronger R&D&I collaboration with the Baltic States
Agriculture, forestry and fishing		
Mining and quarrying		
Manufacturing		
Electricity, gas, steam and air conditioning supply		
Water supply; sewerage; waste management and remediation activities		
Construction		
Wholesale and retail trade; repair of motor vehicles and motorcycles		
Transportation and storage		
Accommodation and food service activities		
Information and communication		
Financial and insurance activities		

Real estate activities		
Professional, scientific and technical activities		
Administrative and support service activities		
Public administration and defence; compulsory social security		
Education		
Human health and social work activities		
Arts, entertainment and recreation		
Other (please specify below)		

If selected "Other" in the previous question, please specify here:

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**19. For the above-selected Latvia's industries with the highest innovation potential, please outline the key current investment opportunities (e.g., high-potential sub-sectors/emerging industries or types of products/services that could be developed in Latvia).**

Open field

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**20. What three types of policy instruments would be most effective to untap Latvia's innovation potential?**

Multiple choice question (max. 3 options)

- Innovative industry cluster development
- Collaborative R&D&I funding projects
- Targeted funding for high value-added product development (e.g., grants, vouchers)
- Science commercialisation, knowledge and technology transfer initiatives
- High-risk innovation financing
- Public funding for research
- Innovation scale-up and export support
- Public procurement of innovation
- Investments in technology/infrastructure hubs
- Capacity-building instruments (e.g., upskilling programmes, talent mobility schemes)
- Special innovation zones with preferential regulatory frameworks (e.g., tax breaks)
- Improving innovation/research governance and regulation

- Innovation culture promoting initiatives (e.g., public campaigns)
- Other (please specify below)

If selected "Other" in the previous question, please specify here:

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**21. If the above-listed policy instruments were provided in Latvia, how much would your company's investment in R&D&I activities increase during the next five years?**

Single choice question

- 0
- Less than 2% of turnover
- 2–5% of turnover
- 5–10% of turnover
- More than 10% of turnover

### *Messages to policymakers*

**22. Please provide final messages on what should be done to untap the innovation potential of Latvia and of the Baltics generally:**

- Message to the Prime Minister of Latvia: \_\_\_\_\_
- Message to the EU policymakers: \_\_\_\_\_
- Message to the policymakers in the neighbouring Baltic States:  
\_\_\_\_\_

### **Interview questions**

- How has your sentiment of Latvia's investment climate changed over the last year? Why?
- In view of the upcoming elections, what should be the key priorities for the new government to (further) improve the investment climate in Latvia?
- What are the key R&D&I activities that your company has implemented during the last 3-5 years (product, process, service, other)? Please share some examples, good practices.
- How would you describe Latvia's innovation ecosystem – extent of collaboration, its current status, development potential? What are the key scientific/technological achievements during the last 4 years, innovation-related success cases and their enabling factors? What would increase awareness about the innovation ecosystem development?
- How would you assess the quality of support of R&D&I-focused organisations (e.g., clusters, incubators, technology transfer offices)? Why?
- Could you please elaborate why you have selected [the following – depending on a survey response] 3 industries with the highest innovation potential in Latvia?
- Please elaborate on the key current investment opportunities in these industries.

- Why do you believe that the [the following – depending on a survey response] industries would benefit from stronger R&D&I collaboration with the Baltic States? What are the strengths/weaknesses of other Baltic States, and of Latvia?
- Why do you believe the [the following – depending on a survey response] 3 policy instruments would be most effective to untap the innovation potential of Latvia.

## Appendix 6. Guidelines for research: survey and interview questions for researcher community in the Baltics

### Survey questions

#### 1. For what industries has your organisation produced most applied research last year?

Multiple choice question

- Agriculture, forestry and fishing
- Mining and quarrying
- Manufacturing
- Electricity, gas, steam and air conditioning supply
- Water supply; sewerage; waste management and remediation activities
- Construction
- Wholesale and retail trade; repair of motor vehicles and motorcycles
- Transportation and storage
- Accommodation and food service activities
- Information and communication
- Financial and insurance activities
- Real estate activities
- Professional, scientific and technical activities
- Administrative and support service activities
- Public administration and defence; compulsory social security
- Education
- Human health and social work activities
- Arts, entertainment and recreation
- Other service activities
- I don't know
- Other (please specify below)

Open field \_\_\_\_\_

#### 2. Among the above-selected, please indicate up to 3 industries, for which your organisation has produced most applied research last year.

Open field

#### 3. Please assess the extent to which the following types of innovation stakeholders have been critical for conducting R&D&I activities in your organisation over the previous 4–5 years.

Matrix (rating scale)

Horizontal axis:

1	2	3	4	5
Very small	Small	Moderate	Large	Very large

Vertical axis:

- Large companies
- SMEs (small and medium-sized enterprises)

- Start-ups & scale-ups
- Universities & research organisations
- NGOs

**4. Please indicate the geographic location of your most critical R&D&I collaboration partners over the previous 4–5 years.**

Matrix (multiple choice)

Horizontal axis:

Latvia/Estonia/Lithuania	Baltic States	EU (beyond Baltic States)	Non-EU	Non-relevant/Unknown
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Vertical axis:

- Large companies
- SMEs (small and medium-sized enterprises)
- Start-ups & scale-ups
- Universities & research organisations
- NGOs

**5. On average, how much of your organisation’s R&D&I activities are conducted in collaboration with the private sector?**

Single choice question

- Below 5%
- Between 5% and 20%
- Between 20% and 50%
- Between 50% and 70%
- Above 70%

**6. To what extent do the below-listed factors limit the ability of your organisation to conduct R&D&I activities in collaboration with the private sector?**

Matrix (rating scale)

Horizontal axis:

1	2	3	4	5	6
Very low	Low	Moderate	High	Very high	I Don't know

Vertical axis (factors):

- Lack of incentives for researchers and evaluation systems
- Lack of capacity from both parties to find win-win opportunities
- Lack of public funding for R&D&I
- Lack of private funding for research and development
- Regulatory challenges and high administrative burden
- Capability and skills gaps
- Culture differences and time-horizon mismatches
- Lack of infrastructure
- Limited intermediary support and ecosystems

- Other (please specify)

**7. What incentives would stimulate the researchers in your organisation to conduct more R&D&I activities in collaboration with the private sector?**

Open field \_\_\_\_\_

**8. What are the best practices of your organisation on how to stimulate commercialisation of research?**

Multiple choice question

- Effective collaboration with the Technology Transfer Office (TTO)
- Clear and research-friendly Intellectual Property (IP) rules
- Training for commercialisation of research
- Training on entrepreneurship for researchers & innovation culture cultivation
- Provision of proof-of-concept & pre-seed funding
- Availability of risk capital
- Collaboration with industry and other innovation stakeholders
- Capacity and linkages to work with top research groups from Western Europe and the US
- Easiness and resources to attract and utilise top research talent
- Incubator/accelerator and other tech hub support
- Incentives in academic careers
- Other (please specify)

Open field \_\_\_\_\_

**9. Please elaborate on how your organisation stimulates commercialisation of research in the comment box below.**

Open field \_\_\_\_\_

*Assessment of the innovation ecosystem and policy recommendations*

In this study, the national innovation ecosystem is understood as comprising both the institutional conditions for innovation and the interaction of actors engaged in R&D&I (research, development, innovation) activities.

**10. Please assess the following aspects of Latvia's/Estonia's/Lithuania's innovation ecosystem on a 5-point scale**

Matrix

Horizontal axis:

1	2	3	4	5
Very low	Low	Moderate	High	Very high

Vertical axis:

- Availability of talent for R&D&I
- Access to R&D&I funding
- Quality of applied research
- Availability of stakeholders (companies, research organisations etc.) willing to conduct R&D&I activities in collaboration

- Local demand for innovative products and services
- Quality of digital and physical infrastructure for R&D&I (e.g., laboratories)
- Quality of support from institutions, focused on innovation, technology & knowledge transfer (e.g., incubators, clusters, innovation hubs)
- Quality of innovation governance and regulations (e.g., intellectual property protection)
- Availability of public support for R&D&I collaboration
- Availability of public support for scaling innovations (within and beyond Latvia/Estonia/Lithuania)
- Innovation culture and risk tolerance

**11. Based on your assessment, please suggest how to improve the two, in your view, most critical aspects of Latvia's/Estonia's/Lithuania's innovation ecosystem, using the comment box below**

Open field \_\_\_\_\_

**12. Please select at least three Latvia's/Estonia's/Lithuania's industries with the highest innovation potential and industries which would benefit from stronger R&D&I collaboration with the Baltic States.**

Matrix (multiple choice)

Horizontal axis: Latvia's/Estonia's/Lithuania's industries with the highest innovation potential | Industries which would benefit from stronger R&D&I collaboration with the Baltic States

Vertical axis (industries):

- Agriculture, forestry and fishing
- Mining and quarrying
- Manufacturing
- Electricity, gas, steam and air conditioning supply
- Water supply; sewerage; waste management and remediation activities
- Construction
- Wholesale and retail trade; repair of motor vehicles and motorcycles
- Transportation and storage
- Accommodation and food service activities
- Information and communication
- Financial and insurance activities
- Real estate activities
- Professional, scientific and technical activities
- Administrative and support service activities
- Public administration and defence; compulsory social security
- Education
- Human health and social work activities
- Arts, entertainment and recreation
- Other service activities
- Other (please specify below)

Open field \_\_\_\_\_

**13. Please outline key technologies that could boost product/service innovation in the industries you have selected, where your organisation is doing research**

Open field \_\_\_\_\_

**14. What 3 types of policy instruments would be most effective to untap Latvia's/Estonia's/Lithuania's innovation potential?**

Multiple choice question (3 answer options)

- Innovative industry cluster development
- Collaborative R&D&I funding projects
- Targeted funding for high value-added product development (e.g., grants, vouchers)
- Science commercialisation, knowledge and technology transfer initiatives
- High-risk innovation financing
- Public funding for research
- Innovation scale-up and export support
- Public procurement of innovation
- Investments in technology/infrastructure hubs
- Capacity-building instruments (e.g., more attractive models of doctoral programmes, upskilling programmes, talent mobility schemes)
- Special innovation zones with preferential regulatory frameworks (e.g., tax breaks)
- Improving innovation/research governance and regulation
- Innovation culture promoting initiatives (e.g., public campaigns)
- Other (please specify)

**15. Please name three Latvia's/Estonia's/Lithuania's key scientific/technological breakthroughs or innovation-related achievements during the last 5 years, and please indicate what have been their main enabling factors?**

Open field \_\_\_\_\_

### *Final messages*

**16. Please provide final messages on what should be done to untap the innovation potential of Latvia/Estonia/Lithuania:**

- Message to the Prime Minister in Latvia/Estonia/Lithuania: \_\_\_\_\_
- Message to the policymakers in the neighbouring Baltic States: \_\_\_\_\_
- Message to the EU policymakers: \_\_\_\_\_

### **Interview questions**

- To what extent is your organisation motivated to conduct applied research, R&D&I activities in collaboration with different types of innovation ecosystem actors (particularly with the private sector)? Why?
- Please elaborate on how your organisation stimulates commercialisation of research.

- What are the key research/scientific/technological achievements of your organisation during the last 3-5 years? Please share some examples, good practices.
- How would you describe Latvia's/Lithuania's/Estonia's innovation ecosystem – extent of collaboration, its current status, development potential? How to stimulate the country's innovation ecosystem development?
- How would you assess the quality of support of R&D&I-focused organisations (e.g., clusters, incubators, technology transfer offices)? Why?
- Could you please elaborate why you have selected [depending on a survey response] 3 industries with the highest innovation potential in Latvia/Lithuania/Estonia?
- Please elaborate on the key technologies that could boost product/service innovation in the industries you have selected, where your organisation is doing research.
- Why do you believe that the [following – depending on a survey response] industries would benefit from stronger R&D&I collaboration with the Baltic States? What are the strengths/weaknesses of each Baltic State?
- Why do you believe the [following – depending on a survey response] 3 policy instruments would be most effective to untap the innovation potential of Latvia/Lithuania/Estonia?