

REPORT

1+1=3

Visionary report on
Estonia-Finland future cooperation



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Supported by:

Finnish Institute of International Affairs

Estonian Foreign Policy Institute

February 2022

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Foreword

The present report was commissioned by the Estonian and Finnish governments after the proposal by the foreign ministers and in connection with the 100th anniversary of diplomatic relations between Estonia and Finland. This is the third such report, with the previous editions issued in 2003 and 2008.

Finland and Estonia are more than mere neighbours — our peoples are historically related by language and culture and our quest for independence was realized early last century. Our links have continuously evolved despite the geopolitical turbulences of the 20th century. New unprecedented prospects opened up when Estonia, following Finland, joined the European Union in 2004. We see our joint future as two prosperous European and Nordic partners in a sustainable globalising world.

While being small countries on the global scale, we have both demonstrated our capabilities as role models — Finland as a happy democracy and a respected global partner, and Estonia as a dynamic reformer making venturesome use of digital technologies and relying on the openness of society. In close partnership with Finland, Estonia has successfully narrowed the economic gap, which is set to be closed in the coming decades, making us equal strategic partners in facing the challenges ahead.

We are living in a changing world that is searching for new, multipolar geopolitical stability, while simultaneously facing serious environmental challenges. We know that this forces us to reconsider existing economic, social, environmental and political models, which is a tough challenge. Yet at the same time, we believe it also offers Estonia and Finland new opportunities for close cooperation.

During the preparation of this report, we have seen how both the COVID-19 crisis and an energy price surge have exposed the fault lines between countries, not least in Europe and between Estonia and Finland. We truly believe these can and will be bridged, among other things by deepened real-time cooperation and technological interoperability.

We are well aware of the strategic security posture of our countries, especially in light of recent developments around Ukraine and the increasingly aggressive position taken by Russia vis-à-vis the Western democracies. This gives grounds for serious concern, at the same time as our countries have good bilateral formats of defence and security cooperation in place at all levels, as well as a working framework for cooperation with all of our partners. With this in mind, we have deliberately chosen a civic focus for the report and omitted the security dimension.

Immediately before this report was finalized, on February 24th, the world witnessed Russia's full-scale invasion of Ukraine — a tragic development that dramatically changes the security environment of our countries. We are convinced that this inevitably calls for even closer security and defence cooperation between our countries and with our partners, which we fully support.

We envision our future cooperation in a broader regional and global context, sharing a belief that this will contribute to the increased visibility and impact of our countries by offering a good example of cross-border cooperation in Europe and beyond. To reflect this vision, we have adopted the motto 1+1=3, signifying

that this strategic cooperation will increase synergies between Finland and Estonia and benefit third parties as well.

This report is a joint undertaking by numerous contributors. The rapporteurs wish to extend special thanks to Sinikukka Saari from the Finnish Institute of International Affairs and Aappo Pukarinen from the Finnish Parliament, as well as Sigrid Nuutre, Kristi Raik and Tõnis Idarand from the Estonian Foreign Policy Institute for their compilation of the analytical part of the report, as well as their technical assistance. Special thanks are due to Ambassadors Timo Kantola and Sven Sakkov for hosting the roundtables, as well as their personal contributions. We would also like to thank the moderators, Sten Tamkivi, Harri Mikkola, Kristi Raik and Katri Makkonen, as well as all of the participants who attended the roundtable discussions. We are likewise grateful to the organizers and participants in the SuomiAreena and Arvamusfestival events, where we held panel discussions on Estonian-Finnish future cooperation. The assistance provided by our Ministries of Foreign Affairs is also highly appreciated.

Executive summary

The present report on future cooperation was commissioned by the Estonian and Finnish governments on the occasion of the 100th anniversary of our diplomatic relations. Building upon a long history of cultural, economic and political contacts stemming from grass-roots encounters and taking different forms over time, we have reached a point where we can envision and encapsulate our future strategic cooperation in the motto: 1+1=3. By working together, our two countries will not only benefit mutually by increasing our competitiveness and serving our citizens, but also offer added value to our partners, thereby heightening our visibility and impact.

As explained in the analytical part of the report, mutually beneficial cooperation has extended to almost all spheres of our societies, a trend that has accelerated remarkably since Estonia joined the European Union in 2004. Hence, we believe our future cooperation will continue to rely on the existing multiple partnerships between our peoples and businesses, institutions and authorities. We trust them in their endeavours and will empower them for increased competitiveness.

We see our strength in both self-confident cultural and national identities as well as in a shared innovative and technology-friendly mentality that both enhance each other and help us to face the challenges ahead. Furthermore, we believe we should follow the aspirations of our young people — they will be trusted and supported in their cooperative undertakings, be they educational, entrepreneurial or cultural.

In light of the above, we see governments as facilitators, creating favourable conditions for investments, establishing predictable regulatory frameworks, and proactively eliminating the bottlenecks in cooperation.

We share a vision for Estonia and Finland, concretized in the phrase:

The FinEst hub for digital and green cross-border cooperation

In our vision, daily flights from Tokyo, Shanghai and Singapore land at Helsinki-Vantaa Airport — the epicentre of their closest European startup hub. Across the Gulf of Finland one sees the spires of medieval Tallinn, home to numerous unicorns, before heading to Slush, the global meeting place for startup tech

entrepreneurs in Helsinki. Recently, the hydrogen-powered Helsinki-Tallinn link with 10 million commuters annually has been extended via Riga-Kaunas-Warsaw to Berlin, covering 1,600 kilometres in 12 hours.

The entrepreneurial and innovative spirit of the people, businesses and governments has eliminated the red tape in the free cross-border movement of not only capital, goods and people but also services and, most importantly, information. Language technology support has made related languages Estonian and Finnish interoperable, thereby effectively integrating the respective media and information spaces as well as linking them to the growing international English-speaking community. A joint and innovative approach to educational services, together with open-minded solutions to attract and serve the needs of people, have provided for an ever-growing pool of local and global talent – the source of economic competitiveness and social well-being.

An hour away from your office, the Nordic greenery awaits you with more than a 1,000 kilometres of coastline, 10,000 lakes, and 1,000,000 hectares of forests and wildlife.

To facilitate this vision, we would advise concentrating joint efforts on creating an integrated startup hub and quality living environment along the Helsinki-Tallinn axis; and to confront the global challenges, we would recommend developing a joint green energy policy, as well as elaborating a technology-based solution to the daily needs of mobile citizens and international talent. These efforts will be supported and monitored through sociological studies on related public opinion and mutual public perceptions.

The report is based on a series of roundtable discussions and interviews, which have been summarized in the form of 19 recommendations, grouped into four streams as follows:

STREAM 1 – DIGITAL LEADERSHIP

- 1.1 Aim at **effective interoperability of Finnish and Estonian public services.**
- 1.2 Demonstrate **leadership in finding a modern solution to the needs of mobile citizens.**
- 1.3 Speed up the **development of intelligent logistical systems and related infrastructure.**
- 1.4 Increase **sharing of threat-related information and align corresponding political positions.**
- 1.5 Implement **'one-click' integrated ticketing system for public transport.**

STREAM 2 – VIBRANT ECONOMIES

- 2.1 Launch a **public-private initiative under the name of FinEst Startup Hub.**
- 2.2 Create a **framework for real-time cross-border exchange of business data.**
- 2.3 Pilot **joint export promotion and development aid activities.**
- 2.4 Intensify and synchronize **exchange of information between ministries and executive agencies.**

STREAM 3 – GREEN FUTURE

- 3.1 Expand the national green investment frameworks into an **integrated Finnish-Estonian sustainable finance ecosystem.**
- 3.2 Work together towards **common green energy solutions around the Baltic Sea.**
- 3.3 Transform the **Gulf of Finland into a sustainable transport corridor by making regular Estonia-Finland traffic carbon-neutral by 2035.**
- 3.4 Pool resources for **Baltic Sea scientific research and build environmental awareness.**

STREAM 4 – EXTENDED CULTURES

- 4.1 Commission and compile a **parallel and comparative history of Finland and Estonia.**
- 4.2 Launch a **comprehensive sociological study of mutual public perception of Estonians and Finns.**
- 4.3 Support the **development of parallel Estonian-Finnish language resources.**
- 4.4 Establish a **joint Estonian-Finnish language programme for four universities.**
- 4.5 Pool resources and launch a **joint educational outreach programme – FinEst Education Nations.**
- 4.6 Conceptualize and realize a **hallmark tourist event for both Helsinki and Tallinn.**

Policy recommendations

STREAM 1 – DIGITAL LEADERSHIP

Over the last 30 years, both Finland and Estonia have eagerly seized the opportunities that new digital technologies have offered to businesses, the public sector, and their societies and citizens at large. **We regard focussing on the digital domain as the key to our future cooperation, as it creates the basis in which other joint undertakings are – in one way or another – rooted.**

Intelligent digital solutions and strong infrastructure help to manage significant flows of passengers, goods, services, finance and information crossing the Gulf every day. Estonia and Finland, having developed digital ID and interoperable national data exchange platforms in close cooperation, and working together on using artificial intelligence, have unique opportunities to truly boost digital services in the 21st century.

The similar economic, social and cultural background of Finland and Estonia create good preconditions to build on the synergies of two metropolitan areas, Helsinki and Tallinn. Cyber security and digital crisis preparedness are also increasingly important fields of Finnish-Estonian cooperation. **We believe that the smooth functioning of everyday connections and life is the litmus test for digital leadership.**

Following the 1+1=3 formula, we suggest that the following measures be taken to enhance the digital impact and visibility of both countries beyond what could be achieved alone.

1.1 Aim at effective interoperability of Finnish and Estonian public services.

In order to encourage deeper and smoother cooperation and best serve our citizens, as well as offer an international benchmark, the countries should agree on a strategy to achieve the full interoperability of public services. Building on the example of the portability of medical prescriptions, we should devise a roadmap to gradually engage other services, guided by customer interest and feedback. Fully respecting different national rules and regulations, we believe digital solutions together with political will can bridge the gap in the name of time-saving and convenience. We also see good opportunities for public-private partnerships and the potential for export.

1.2 Demonstrate leadership in finding a modern solution to the needs of mobile citizens.

An increasing number of people live and work intermittently in two or even more countries and duly face cumbersome problems relating to taxation, health insurance, pensions, unemployment, and other social benefits. The attractiveness of the Helsinki-Tallinn area can be improved by ensuring easy relocation for the whole family when it comes to hiring highly qualified workers, increasing multilingual education for children, and helping family members to find a job. We invite our entrepreneurs to come up with innovative technology-based solutions and call on our governments to pilot these for future implementation.

1.3 Speed up the development of intelligent logistical systems and related infrastructure.

Developing intelligent logistical systems and strong infrastructure as well as real-time data-sharing are preconditions for building a smooth country-to-country and twin-city dynamic. The investments require political will and vision, and both public and private funding. Developing intelligent logistics and strong infrastructure benefits both countries in the form of boosting competitiveness, investments and sustainable

economic growth. Having a hydrogen-powered train ferry or a railway tunnel in the longer term between Helsinki and Tallinn will be the strategic goal towards more sustainable and vibrant flows of people and goods. More urgently, we recommend that Finland should acquire **formal membership of Rail Baltica**, strengthening the connectivity, security of supply and competitiveness of the Helsinki-Tallinn area. Connecting Helsinki to Berlin by train in 12 hours should be a question of when, not if.

1.4 Increase sharing of threat-related information and align corresponding political positions.

Given the increasingly tense operating environment around the Baltic Sea, Finland and Estonia should increase the exchange of threat-related intelligence and information on political positions to counter hybrid attacks, including cyber operations. This would contribute towards shared situational awareness, preparedness and joint attribution. There is also a need to conduct a baseline study on the possibilities to enhance Finnish-Estonian cooperation in the field of resilience and crisis preparedness, including supplies and logistics contingency planning. The Covid-19 crisis revealed that more needs to be done in order to secure the functioning of transport and passenger traffic in a safe and smooth manner, and digital technologies should be part of the solution. The EU directive on the resilience of critical entities may provide a good basis for bilateral public-private sector partnerships in this field.

1.5 Implement 'one-click' integrated ticketing system for public transport.

To facilitate seamless public transport, modern digital solutions will be applied and developed to create a truly integrated ticketing system for the greater Helsinki-Tallinn area, and effectively Estonia and Finland. Businesses are invited to come up with solutions, and authorities to eliminate existing legal and/or bureaucratic barriers.

STREAM 2 – VIBRANT ECONOMIES

Through history, and especially since Estonia regained independence, trade with Finland and Finnish investments have played a crucial role in the Estonian economy, while Finland's businesses have substantially gained from these opportunities. This cooperation has gradually matured into balanced partnerships, and strategic growth is largely dependent on further improvements in connectivity — the Rail Baltica railway link under construction, the planned third power cable and, most visibly, the visionary tunnel. In recent years, however, the former rapid growth has slowed and therefore new ideas are welcome to accelerate bilateral growth. In accord with global developments, these ideas will target three major challenges — digital, green, and energy.

In parallel with these developments, we have witnessed a remarkable boom in startups on both sides of the Gulf of Finland. While the existing businesses may still benefit from better physical connections and increasing mobility, startups and new tech with their global ambition may well take over to spearhead the growth. Proceeding from the above considerations, and believing in the new wave of entrepreneurs as well as the global attractiveness of our capitals, we have concentrated on increasing the effectiveness and attractiveness of our business environments.

The contemporary world is characterized by increased uncertainties, crises and disruptions, which call for increased resilience from societies — the ability to absorb, adapt, recover and learn from these challenges. Among other aspects of resilience, cyber security and digital crisis preparedness stand out as the key to a reliable digital society. The related threats identified in respective national documents are remarkably similar, and taking into account their cross-border nature, we believe that as interdependent neighbours Finland and Estonia can best build resilience together. Cooperation between the two countries is up and

running in all of these fields. A more integrated approach at all levels could offer considerable advantages to both countries.

2.1 Launch a public–private initiative under the name of FinEst Startup Hub.

Remarkable undertakings from Slush to Estonian unicorns have proved the viability of our startup community, which may be further strengthened through cooperation and broader public as well as private support. To bolster these developments, the proposed initiative will act as a facilitator and amplifier of new businesses along the Helsinki-Tallinn axis. This objective is best addressed by establishing a quadripartite (government and startup community representatives from Finland and Estonia) high-level board tasked with the mission of coordinating the activities of the parties, increasing the visibility of the initiative, as well as facilitating the attraction of talent and resources by addressing regulatory barriers to growth.

2.2 Create a framework for real-time cross-border exchange of business data.

The contemporary economy is characterized by dynamism and turbulent behaviour, which call for real-time monitoring and adaptive models for building resilience, increasing predictability, and avoiding disruptions. National information systems, including periodic tax reports, collect and store valuable data on business transactions to this end, but the growing share of transnational business and trade increasingly limits the adequacy and reliability of these nationally limited models. We see essential added value in developing a **framework for real-time cross-border exchange of business activity data**. Due concern for privacy and data protection calls for using contemporary encrypted data processing methods — a growing sector of digital technologies.

2.3 Pilot joint export promotion and development aid activities.

While both countries have respective mechanisms in place, substantial added value can be created through joint activities in shared areas of strengths and interest in support of recommendations 2.1 and 4.5. Our respective agencies — Business Finland and Enterprise Estonia — as well as ministries responsible for development aid are called to design and contribute to the pilot and assess its compatibility with the EU's Global Gateway program.

2.4 Intensify and synchronize exchange of information between ministries and executive agencies.

To further harmonize policy positions, including from the EU perspective, and to build trust and understanding as well as resilience in crisis situations, real-time information exchange is essential. To facilitate this, several ministries, especially the ministries of the interior, have established staff exchanges for officials embedded in the ministerial structure. This initiative has proved successful in creating networks of trust and a shared appreciation and understanding of each other's perspectives; this in turn would help in obtaining a more precise threat analysis and shared situational awareness. Hence, we recommend extending this practice to more institutions.

STREAM 3 – GREEN FUTURE

Estonia and Finland are committed to becoming climate-neutral by 2050 and by 2035 respectively. The EU is currently working on the revision of its climate, energy and transport-related legislation under the Fit for 55 package — the commitment to cut emissions by at least 55% by 2030. **These commitments will point to a growing emphasis on renewable energy production and electricity generation in both countries, and increasing interest in developing solutions and connections on a regional scale.** The commitments also mean that **a significant part of the Finnish Gulf maritime traffic should already become carbon-neutral during the next decade.** Fuel solutions, battery and engine development, ship

design, traffic planning and speed are all factors impacting the carbon footprint. Added to this, intelligent traffic solutions and data-sharing can ease some of the negative externalities.

3.1 Expand the national green investment frameworks into an integrated Finnish–Estonian sustainable finance ecosystem.

The emerging green transition is not only a means of meeting the climate targets, but also a growth enabler. A growth boost for startup and scale-up companies in the field of green technology can be achieved with additional private equity. Harmonizing the currently separate sustainable finance practices of Finland and Estonia provides a larger, more functional, attractive, predictable cross-border ecosystem for global investments.

3.2 Work together towards common green energy solutions around the Baltic Sea.

This coordinated effort will comprise windfarms, nuclear power plants, hydrogen development, interconnected energy networks and the development of an intelligent storage system for the whole Nordic-Baltic area, all of which are key for this vision. The integration of energy grids enables the further development of common and greener energy markets. We also see a need for new and improved private-public partnerships around the Baltic Sea.

3.3 Transform the Gulf of Finland into a sustainable transport corridor by making regular Estonia–Finland traffic carbon-neutral by 2035.

To this end, we call for establishing common economic incentives. The governments play a significant role in fostering the development in fields such as battery vessel development and hydrogen fuel engines. We believe that it is better to be ahead of the green transition curve, and aim to market tried and tested solutions to the latecomer markets. This could create economic opportunities for Finnish and Estonian maritime technology firms and the shipping industry at large.

3.4 Pool resources for Baltic Sea scientific research and build environmental awareness.

Concrete examples for maximizing the impact in both countries are the possible co-use of the environmental research expedition vessel Aranda in the Baltic Sea, making 2024 the Year of the Finnish Gulf (exactly ten years after the first Year of the Finnish Gulf), and promoting Baltic Sea awareness in schools, through the media, and by increasing overall visibility of the topic.

STREAM 4 – EXTENDED CULTURES

The critical qualities of any joint undertaking are mutual understanding and trust, which are built over time through communication and cooperation, but also require constant renewal and adaptation both to internal developments as well as changes in the external environment. For almost two centuries, Estonia and Finland have engaged in a great variety of cultural cooperation activities, heavily dependent upon historic opportunities and circumstances. On the one hand, the present period offers unlimited opportunities to undertake joint bi- and multilateral projects at all levels. On the other hand, growing globalization, convenient travel opportunities, and new information and communication technologies have overridden historic, geographic and neighbourly connections, duly challenging traditional cooperation models. Hence, there is a need to adapt to better face the global challenges. Proceeding from the above considerations, we pro-

pose focussing, on the one hand, on developing better mutual understanding and extending our cultural and language spaces, while also building on our joint strengths and reaching out to our partners.

4.1 Commission and compile a parallel and comparative history of Finland and Estonia.

Our countries and peoples have lived under rather similar geopolitical realities for centuries, and emerged as independent states only early last century. The ensuing history has been both different and dramatic due to both internal processes and logic as well as external realities and geopolitics. We believe this joint academic effort may benefit both nations by offering a different perspective on our self-reflections, as well as by contributing to better and deeper mutual understanding. As such, this joint history book may well serve the younger generation in their studies as well as offer a shared platform for public discussions of the contemporary challenges we both face.

4.2 Launch a comprehensive sociological study of mutual public perception of Estonians and Finns.

Despite the widespread opinion that our peoples have a good understanding of each other, this is not necessarily the case and different prejudiced attitudes are noticeable. We need a better understanding of these phenomena as well as their evolution over time. This knowledge will help to deepen strategic cooperation and advance trade and tourism.

4.3 Support the development of parallel Estonian–Finnish language resources.

Proceeding from the closeness of our languages, we see a unique opportunity in developing a direct high-quality Estonian–Finnish translation and interpretation platform, outperforming the available solutions, which use mediatory languages. Language resources — parallel text and speech corpora — are needed to provide for the development of automated translation and interpretation services by the private sector. This joint investment will open the door to effective bilingualism of the information spaces and, most importantly, will increase mutual access to media outlets such as our national broadcasters, YLE and ERR.

4.4 Establish a joint Estonian–Finnish language programme for four universities.

We have become aware of the difficulties in maintaining Estonian and Finnish studies at our universities due to a shortage of resources as well as declining demand. We believe a pooling of resources may help to address these problems. We therefore call on **Helsinki, Tartu, Tallinn and Turku Universities to develop a joint Finnish–Estonian Language and Literature Programme together with the free movement of students and staff between the universities.** This effort will be supported by earmarked funds from our governments.

4.5 Pool resources and launch a joint educational outreach programme — FinEst Education Nations.

Both Finland and Estonia have excelled in global PISA tests and there is substantial international interest in our experience. We have similar educational concepts, we have greatly learned from each other, and can build both on our national education diplomacy efforts as well as existing cooperation between our ministries. Drawing on the last few years' work between the Education and Youth Board of Estonia (Harno) and the Finnish National Agency for Education, we see great potential in combining our efforts in educational innovation — developing personalized services on digital platforms and using artificial intelligence — and believe that international partners may be invited to join the programme.

4.6 Conceptualize and realize a hallmark tourist event for both Helsinki and Tallinn.

This event will aim to strengthen and revitalize tourist visits as well as cultural encounters and meetings between friends and partners from Estonia and Finland, as well as attract international tourists. The lead in

this enterprise will be taken by the tourism industry but the proactive role of cities as well as public cultural institutions is vital for long-term success. As a step on the road, joint Museum Cards will be introduced.

Analysis

INTRODUCTION

Estonia and Finland have always been bound by **closeness of language, culture and geography**. During the past thirty years, the ties between the two countries and their citizens have multiplied in all spheres of life; today we are more connected than ever. The mushrooming of new connections and forms of cooperation in bilateral relations has gone hand in hand with the broader processes of European integration and globalization. Although the change has been more radical in the case of Estonia, the collapse of the former Eastern bloc also marked a major turning point for Finland.

All relationships change over time. When comparing this report with the preceding 2003 and 2008 reports on Finnish-Estonian relations, we can see that these relations have become **more equal, more globally oriented and more transnational** rather than just bilateral. From 1991 to 2004, the cooperation focused mainly on Finland helping Estonia to rebuild an independent state and undergo political and economic transformation. After Estonia's accession to the EU and NATO in 2004, the relationship has gradually become more equal. Although Estonia's population is four times smaller than Finland's, and its economy is still almost nine times smaller, it can lead the way in many issues as a uniquely agile and dynamic country. Finland remains Estonia's most important economic partner, but its relative share in Estonia's foreign trade and investments has decreased, while for example foreign investments from Estonia to Finland have multiplied.

There are also important fields where Estonia and Finland have significant common strengths that make them natural close partners: above all, both countries are known as pioneers of **digital transition and technological innovation**, which is also the first priority area highlighted in this report. Secondly, and closely connected to digitalization, Finland and Estonia have the potential to lead the way and benefit from the **green transition**. For example, they can be forerunners in developing new green technologies for sea traffic, with the aim of achieving emission-free sea traffic in the Baltic Sea by 2035.

These priority areas are at the forefront of making the relationship more globally oriented and visible outside the Baltic Sea region. Cooperation in the fields of digital and green transition can make both Finland and Estonia internationally more competitive and attractive. However, the global orientation is not limited to these areas, but has also become increasingly important in cooperation in the fields of culture and education, as evidenced, for example, by jointly produced internationally acclaimed films and TV series, and by synergies in education diplomacy, building on the excellent PISA results of students in both countries. Hence, bilateral relations continue to develop hand in hand with efforts by both countries to improve their international impact and reputation. There are many forms of cooperation that benefit citizens on both

sides, while also providing interesting models for partners in Europe and beyond. Reflecting the strongly-held belief that by pulling together both states can achieve more, the motto of this report is **1+1=3**.

The third major change over the past decades is the growth in the transnational dimension of Estonian-Finnish relations. Transnational cooperation differs from traditional interstate relations due to its multi-level, comprehensive and often unofficial nature — it embraces both the public and private sectors and different levels of government, creating highly integrated partnerships with a cross-border impact. Rather than just cooperating, Estonians and Finns are **living, working and creating together** in a variety of ways that benefit societies and businesses at large.

Furthermore, there are tens of thousands of transnationals and mobile citizens, including people who have moved from one country to the other and maintain close ties to both their original and new homeland, as well as people who have not moved but who have close connections to the other side of the Gulf through work, studies or business activities. It is telling that the exact number of transnational projects and people is unknown, as this phenomenon defies the categories of official statistics. The numbers of Estonian citizens living in Finland (over 50,000) and Finnish citizens living in Estonia (over 8,000) cover some transnationals but not all (there are, for example, thousands of ethnic Estonians living in Finland who have taken Finnish citizenship but who can be characterized as transnationals). With increasing teleworking, transnationalism is likely to be shifting towards multi-location living with even blurrier lines between the two geographical entities.

The people whose life, work or studies are closely connected to both countries are a major resource for Estonian-Finnish relations. For example, the number Finnish students studying in Estonia has more than tripled since Estonia joined the EU. The report stresses that there is much scope to **make transnational life and multilocation living smoother** by improved, smarter infrastructure and connections between national systems of taxation, healthcare, social benefits and pensions. This issue should be an important part of future digital cooperation and, once again, has global relevance as the growth in transnationalism is a common phenomenon in different parts of the world.

Perhaps paradoxically, a more equal and more interconnected Estonian-Finnish relationship has been accompanied by a somewhat reduced interest in and **knowledge about each other's language, culture and society**. Some of the previously very special features of the relationship have been diluted by the expanding European and global opportunities, and the increased use of English as the common language. The report highlights that it is necessary to ensure that there will also be professionals in the future in both countries who have deep knowledge of the other country, including language skills. At the same time, **language technology** is a promising field of technological cooperation that will increasingly complement — but not replace — human language-learning.

Finally, geographical proximity means that Finland and Estonia are destined to share the same complex **security environment**. The increase in tensions in Russian-Western relations since 2014 and their further escalation in late 2021 and early 2022 has been felt in the Baltic Sea region in various ways. During these years, Finland and Estonia have shared a very similar assessment of the security situation and have closely coordinated their responses. The report pays special attention to enhancing cooperation aimed

at strengthening the **resilience** of both countries in the face of cyber and hybrid threats, and the possible disruption of vital services and critical infrastructure.

IMPLEMENTATION OF THE 2008 REPORT

The last report addressing Finnish–Estonian future relations was presented in 2008 by Jaakko Blomberg, Finland’s former Ambassador to Estonia, and Gunnar Okk, Vice-President of the Nordic Investment Bank. The aim of the report by Blomberg and Okk was to generate ideas on how Estonia and Finland can respond to the challenges presented by globalization in collaboration rather than individually, and how the two countries can support each other in improving their competitiveness.¹ The authors concluded the report with fifty-five recommendations emphasizing education, science, technology and innovation. During the fourteen years since the previous report was launched, many of its recommendations have been implemented, while some areas have received more attention from the two governments than others. This stocktaking highlights some of the projects implemented so far.

Culture

The 2008 report put forward a number of recommendations on how to improve cultural collaboration between the two countries, and there have been significant achievements in implementing some of these. One of the recommendations was the establishment of a joint Estonian–Finnish cultural foundation, which was launched in 2017 by a total of 24 individuals and 15 companies and organizations from both Estonia and Finland, including Tallinn University, the University of Turku, Åbo Akademi University, Tallinn University of Technology, and the University of Tartu. The main aims of the Foundation are to strengthen various fields of Finnish and Estonian culture and art, to increase mutual language skills, and to develop joint projects and cultural exports to third countries. The Foundation awarded its first symbolic grant of 15,000 euros during the celebration of the 80th anniversary of the Convention on Intellectual Cooperation between Estonia and Finland, held in Helsinki on 1 December 2017.

There was also a proposal by the authors of the previous report to found an Estonian Cultural Centre in Helsinki and a Finnish Cultural Centre in Tallinn. In 2010, the Estonian House was established in Helsinki, bringing together the Finnish Representation of the Enterprise Estonia, the Estonian Institute in Finland, the Association of Finnish–Estonian Societies, and the Tuglas Society together with the Baltic Library. The Finnish Institute in Estonia performs the function of a Finnish cultural centre with offices in both Tallinn as well as Tartu. It started as an information point at the Tuglas Society as early as 1991 and has been operating in its current form since 1994.

The 2008 cooperation report also suggested that the governments of Finland and Estonia should support the compilation of up-to-date dictionaries. In the autumn of 2015, a joint decision was reached between the governments to issue two dictionaries, both of which are linked to national anniversaries. The online version of the Finnish–Estonian dictionary (originally published in 2003) became available free of charge for the 100th anniversary of the Republic of Finland in 2017, and a new Estonian–Finnish dictionary was

1 ¹ Jaakko Blomberg and Gunnar Okk, ‘Opportunities for Cooperation between Estonia and Finland’, Prime Minister’s Publications, Finland, 25 June 2008, https://kirj.ee/public/trames_pdf/2018/issue_2/Trames-2018-2-185-209.pdf.

launched to celebrate the 100th anniversary of the Republic of Estonia (the printed version was published in 2015).

Broadcasting

The authors of the previous report highlighted the importance of a joint Estonian–Finnish radio and television conference to explore the potential for broad-based cooperation between companies operating in this field. They proposed the creation of a permanent correspondent position by the Estonian Broadcasting Company (Eesti Rahvusringhääling) in Finland and an equivalent position by the Finnish Broadcasting Company in Estonia. While there were efforts to promote cooperation between national broadcasters at an official level, this proved to be more difficult than originally envisioned. However, one practical – and transnational – achievement was that an Estonian journalist temporarily worked for both ERR and YLE.

Environment

In the field of maritime safety, environmental protection and security, the report contained a proposal to establish an Estonian–Finnish intergovernmental maritime council to harmonize the maritime policies of the two countries. This idea was subsequently modified and cooperation has since focussed on implementing the EU Baltic Sea Strategy and HELCOM Baltic Sea Action Plan. A trilateral project with the involvement of Estonian, Russian and Finnish experts – Gulf of Finland Year 2014 – was carried out with the aim of enhancing cooperation between the three countries, exploring the situation in the Finnish Gulf ecosystem, and making proposals to improve the situation by 2021. During the project, joint monitoring was carried out and a common database was created.²

Energy

In the energy sector, the report proposed continuing with the preparations for the construction of the Balticconnector subsea gas pipeline, and evaluating the potential for a merger between the grid network companies Fingrid Oyj and OÜ Põhivõrk. Over the course of time, the proposal has been modified and instead of a merger, the two companies have collaborated to ensure energy security through different network connections. The construction of the Balticconnector was completed in December 2019 and the pipeline has been up and running since 1 January 2020.

Tourism

The 2008 report drew attention to possibilities for joint tourism planning, including the availability of tourist information in both languages and a joint marketing strategy. Subsequently, Tallinn and Helsinki have been promoted as a single tourism destination worldwide, and large cruise ships have been passing through both ports during the summertime. The availability of tourist information in both countries in Estonian, Finnish and Swedish has been largely improved.

Information and communication technologies

There was a proposal for the governments to consider the potential for creating a joint Estonian–Finnish language technology programme. Over the course of time, the proposal has been modified, and there are now several researchers from Estonian and Finnish universities in the field of language technology who participate in projects including joint publications, seminars and conferences. Cooperation also takes place in international language technology networks. Additionally, language technology plays an important role in providing the future digital architecture for cross-border services. Cooperation between the Ministry of

² Mika Raateoja and Outi Setälä, 'The Gulf of Finland Assessment', Reports of the Finnish Environment Institute, 2016, https://issuu.com/suomenymparistokeskus/docs/syker_a_27_2016_web.

Economic Affairs and Communications, the State Information System Authority and the Finnish authorities on the #bürokratt and AuroraAI initiatives is ongoing in this regard.

Transport

In the area of transport, the authors of the 2008 report advised the governments to explore the potential for starting a continuous helicopter shuttle service between Helsinki-Vantaa Airport and Tallinn, as well as the potential for a Helsinki-Tallinn train ferry service. While there have been no concrete advancements with either the helicopter or the train ferry service, the two governments signed an MoU on transport in April 2021. The aim of the MoU is to develop cooperation in the transport sector and the exchange of information between countries to promote major transport projects such as Rail Baltica, which is part of the EU Trans-European Transport Network, the Tallinn-Helsinki Tunnel and the North Sea-Baltic Corridor. The MoU is the first step towards integrating the tunnel project into the TEN-T network, which is a prerequisite for the project to apply for co-financing from the European Union. Connectivity with Rail Baltica and other national transport infrastructures is a prerequisite for the development of the tunnel. The MoU will remain in force until 2030 but does not entail commitments by the two countries to any particular projects.

Internal security

In the field of internal security, the 2008 report recommendations included an evaluation of the potential for establishing a joint Estonian-Finnish rapid deployment rescue unit to alleviate the consequences of any accidents in the Gulf of Finland and to quickly address any other crises. Additionally, the creation of joint action plans and principles to be agreed upon between the Estonian, Finnish, Russian and Swedish authorities was also recommended. As of today, no joint rescue unit has been established, but cooperation in this field has been close and dynamic. In the field of maritime rescue, there is almost daily cooperation in the form of close communication and meetings between the response units of both ministries and sub-agencies. The Finnish and Estonian Border Guards exchange information daily.

THE GLOBAL AND REGIONAL CONTEXT

Estonia and Finland are both small, interconnected countries at the northeast edge of Europe. They are both highly digitalized, and their economies are open and dependent on reliable international flows. These characteristics make them clear winners in the global network economy and rules-based liberal international order, yet simultaneously vulnerable to protectionist measures and power politics.

The changing global environment includes drivers that bring about both challenges and opportunities for actors like Finland and Estonia — small nations in the wider European and global constellations. The key trends that will impact the context in which Finland-Estonia cooperation is embedded include increasing great-power competition and the erosion of international norms, an unstable regional security environment, and climate change, each briefly outlined below.

Great-power competition and the erosion of international norms

Today, the global economic output is four times the size it was in the early 1990s, and global trade flows are six times as high. This growth is mostly due to the rise of emerging economies, particularly in Asia. China's economic rise, and its surge in the technology field since the 1990s is unparalleled. The other side

of the coin is that the share of the EU27 in global economic output has fallen significantly over the years, and the relative share of the US seems to have stalled.³

The global economic shifts have been reflected in international politics: the international role of China has strengthened, as has its opposition to the liberal hegemony of the US. Moreover, other emerging economies such as Brazil and India are calling for a bigger role in global politics. The values of Western liberalism – which underpinned the wave of globalization and enabled the rapid rise of emerging powers since the 1990s – are now being simultaneously challenged by economic nationalism, populism, and illiberal regimes, as well as religious fundamentalism.⁴

The tightening global competition has also eroded the norms of the international trading system that was built over the decades. Trust in multilateral rules has suffered as many leading economies have resorted to protectionist measures, casting doubt on the level playing field in the global economy. Furthermore, many state-owned or controlled enterprises blur the distinction between markets and international politics as they enter global markets and seek to establish a foothold abroad. Economic dependencies can be ‘weaponized’ and used as an instrument of pressure to achieve political goals.

Western approaches to interdependencies have changed significantly over the past decade,⁵ and neither Finland nor Estonia can afford to approach interconnections merely from a market-based angle. For highly interconnected countries like Finland and Estonia, it is critical to understand the geopolitical context of critical flows and connections. On the one hand, a multitude of connections can make countries more resilient, while on the other hand, some connections may produce critical vulnerabilities and risks.⁶

Finnish–Estonian imprint in the EU

The global shifts and trends demand EU-wide responses. Finland and Estonia can play a distinctive and constructive role in the Union’s search for clever solutions to the ‘wicked problems’ of the future. A good example of pulling together with other likeminded states for the common good is the initiative for European Digital Sovereignty. Digital transformation is a key opportunity and challenge for Europe’s future competitiveness; a dynamic digital single market is a sine qua non for a European, globally competitive platform economy. Estonian and Finnish companies and the public sector have unique insights into how to shape Europe’s digital future.

Green, digital and automated traffic, set to cover 20% of the global GDP by 2030, offers a possibility for Finnish–Estonian industries. Accelerating the digitalization of mobility and development and scaling of new business solutions creates new foundations for jobs, growth and exports, both globally and at the EU level.

Our digital societies are underpinned by respect for human rights, and our digital economies are firmly rooted in the rule of law. Supporting shared European values is therefore an important common area of interest that also provides added value in the EU’s external relations.

Proactivity is the key to small-state influence in the EU. In order to contribute towards better EU legislation, forming and delivering coordinated and joint messages at an early stage of the preparatory process is

3 McKinsey Global Institute, ‘Globalization in transition: The future of trade and value chains’, Report, 16 January 2019, <https://www.mckinsey.com/featured-insights/innovation-and-growth/globalization-in-transition-the-future-of-trade-and-value-chains>.

4 See e.g. National Intelligence Council of the United States, ‘Global Trends: A more Contested World’, March 2021, https://www.dni.gov/files/ODNI/documents/assessments/GlobalTrends_2040.pdf.

5 Mark Leonard, *The Age of Unpeace: How Connectivity Causes Conflict*, Penguin Books, 2021.

6 Emma Hakala, Harri Mikkola, Juha Käpylä and Matti Pesu, ‘Suomen huoltovarmuus ja Baltian alue: Tiivistyvät yhteydet muuttuvassa turvallisuusympäristössä’ [Security of supply in Finland and the Baltic region: Closer connections in a changing security environment], FIIA report 61, September 2019, p. 28, <https://www.fia.fi/julkaisu/suomen-huoltovarmuus-ja-baltian-alue>.

extremely important for both Estonia and Finland. An important shared concern — as Estonia's economy is growing into the position of a net payer in the EU — is to ensure the Union's responsible economic and fiscal policies and sustainable spending limits.

Tensions in the regional security environment

Increased great-power competition and the return of power politics have also affected the Baltic Sea region. For the first two decades of the post-Cold War era, the Baltic Sea region was largely an area of low tension. In the late 2000s, the Russian posture in the region and elsewhere started to become more assertive. The revisionist trend was reinforced by the occupation and illegal annexation of Crimea to Russia and the war in Donbas. Reflecting the mounting international tensions, turbulence and dangerous incidents also increased in the Baltic Sea region after 2014. Further escalation of tensions in 2021 prompted the Baltic and Nordic countries to enhance defence and deterrence measures.

In spite of this negative trend, the probability of a military conflict in the Baltic Sea region remains low. One can argue that 'a tense state of balance and stability' has emerged in the region.⁷ This tense stability includes a substantial shift in the threat environment that is likely to be a long-term one. Hard security dynamics are intertwined with more complex, comprehensive and constant 'hybrid' or 'grey zone' instruments of coercion.

Hybrid threats refer to a combination of conventional and unconventional policy instruments in the political, economic and societal spheres, aimed at weakening and/or manipulating the target. Hybrid influencing often exploits the vulnerabilities of the target and generates ambiguities that hinder decision-making in the target state. Some recent hybrid activities by state or proxy actors include cyberattacks, election interference and disinformation campaigns. Both Finland and Estonia take the threat of hybrid coercion seriously, and have actively supported common efforts to build resilience together to counter hybrid influencing within the European and transatlantic frameworks.

Climate change

Climate change will impact everything from the local to the global level, and challenge the way we live, do business and strive to prosper in the future. Extreme weather, wildfires, drought and floods have become more commonplace phenomena for which countries near and far will need to prepare. As a small and shallow sea, the Baltic Sea will be affected more quickly by climate change than some of the bigger seas. The changes will negatively impact salinity, the habitat as well as the water level of the Baltic Sea and this, in turn, can be expected to reflect negatively on citizen welfare, recreation values and economic performance in both Estonia and Finland.⁸

The EU is leading the way in transitioning to the green economy. Both Finland and Estonia are committed to the European Green Deal, the European Climate Law with the binding target of achieving climate neutrality by 2050, and the goal of cutting emissions by at least 55% by 2030. The green transition will mean significant economic opportunities for clean tech and circular economy businesses and solutions.

Furthermore, climate change will precipitate the fourth energy transition. The shift from fossil fuels to renewable energy sources is likely to be faster than the previous energy transitions: according to an optimistic transition scenario, the share of renewables in the world's primary energy supply will make up

7 Matti Pesu, 'Hard security dynamics in the Baltic Sea region: From turbulence to tense stability', FIIA Briefing Paper 168, January 2020, <https://www.fia.fi/julkaisu/hard-security-dynamics-in-the-baltic-sea-region>.

8 HELCOM, State of the Baltic Sea, 2018, <https://helcom.fi/baltic-sea-trends/holistic-assessments/state-of-the-baltic-sea-2018/reports-and-materials/>.

two-thirds of total energy consumption in 2050, whereas this figure is today close to one-sixth.⁹ Decarbonization connected to the energy transition slows climate change and could diminish some of the current dependencies on hydrocarbon producers such as Russia in the Baltic Sea region. Digitalization is a key enabler of both the circular economy and energy transition as more intelligent systems help in optimizing processes and minimizing transaction costs and waste.¹⁰

To sum up, the increasing global competition, the erosion of liberal international norms, and the increasingly common use of hybrid tools of influence create challenges — and incentives for cooperation — for small countries like Estonia and Finland. Furthermore, the global energy transition and shift towards a circular economy create global opportunities for Finnish and Estonian businesses.

WORKING TOGETHER FOR DIGITAL LEADERSHIP

Estonia and Finland have benefitted from the digital age and may nurture a realistic ambition to remain regional or even global pioneers in this development. Digital innovation can further facilitate cross-border transactions between the two countries by removing the remaining barriers to the free movement of people, goods, services and capital. This requires cooperation between the two countries and more broadly in the region, which is influenced by technological, economic and administrative factors. The two countries are priority partners in regional digitalization policy, but progress has been slower than expected thus far.

Frontrunners of cross-border digitalization

As early as 2013, Finland and Estonia signed an MoU on developing and maintaining a software environment enabling secure connectivity, searches and data transfers between various governmental and private databases — called the X-Road platform. In 2017, the two countries formed a separate jointly managed organization to administer the development of X-Road technology — the Nordic Institute for Interoperability Solutions (NIIS).¹¹ This cooperation could serve as a model for solving the problems inherent in bilateral cooperation, duly helping to achieve the goals of regional cooperation by developing common approaches and support platforms to meet the needs of cross-border interaction. Indeed, in 2021, Iceland also became a member of NIIS, boosting hopes that the Estonian-Finnish approach to joint digital infrastructure would find wider support in the Nordic-Baltic region.

Although some positive steps have been taken, the full potential of this cooperation has yet to materialize. The exchange of data between business registries and population registries in the two countries started in 2020, and it is now possible for medicines to be dispensed with an electronic prescription issued in the other country. Data exchange between tax authorities should also become possible in due course. However, some bottlenecks remain when it comes to the cross-border movement of some personal data due to legal barriers.

Due to different technical and other barriers, cross-border digitalization projects require long-term efforts and significant funding. In addition to practical demand and declared political ambition, a shared vision and political commitment are needed to ensure success. As the benefits of the cross-border solutions

9 International Renewable Energy Agency, 'Global Energy Transformation: A Roadmap to 2050', 9 April, 2019, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Apr/IRENA_Global_Energy_Transformation_2019.pdf.

10 Maria Antikainen, Teuvo Uusitalo, Päivi Kivikytö-Reponen, 'Digitalisation as an Enabler of Circular Economy', *Procedia CIRP*, Volume 73, 2018, pp. 45-49, <https://www.sciencedirect.com/science/article/pii/S2212827118305432?via%3Dihub>.

11 Nordic Institute for Interoperability Solutions (NIIS), 'History of NIIS: From the Joint Development of X-Road to Sharing of Experience and Promoting Innovation', 2021, <https://www.niis.org/history>.

could be multiplied by extending the network, the experience of Estonian-Finnish digital cooperation could have a positive impact on the success of regional solutions.

Finland and Estonia are also cooperating in the field of AI-based public services. In the future, the use of AI and language technologies could provide better and more user-friendly services for citizens and businesses. The development and testing of the cross-border interoperability of AI-based public services could be the next step in this cooperation. Human-centric or user-friendly services are designed in both countries in the frameworks of their respective national programmes – ‘Bürokratt’ and ‘AuroraAI’ – which are already cooperating.

Nordic-Baltic digital cooperation

In 2018, the Nordic Council of Ministers initiated the Nordic-Baltic e-ID project (NOBID) with the goal of facilitating the recognition of national e-ID solutions by integrating national electronic identification systems. This project was motivated by the ambition to become the most sustainable and integrated region in the world, with deepening cooperation on digitalization and the digital internal market. The development of a common digital infrastructure is seen as an enabler in solving the problems that citizens and businesses face in their transactions in the region. The NOBID initiative plays a key role in developing the interoperability of national electronic ID solutions in the Nordic-Baltic region. Without reliable digital infrastructure and reliable electronic identification and document delivery, the problem of cross-border data exchange cannot be resolved.

However, the cross-border data exchange and provision of digital services has not progressed beyond a small number of initiatives. The NOBID countries differ in their approach to electronic identity and to managing trust services, which makes cross-border transactions complicated or impossible. Most of the digital public services in the countries are designed for national use, and personal identification codes are connected to national databases and public registries.

Finland promoted digital information-sharing between the Baltic and the Nordic states during its 2021 presidency of the Nordic Council. It set a goal of establishing the ‘world’s smoothest cross-border mobility and daily life through digitalisation’, aiming to improve the interoperability framework and information exchange between the public authorities of the Nordic and Baltic countries, and focussing on three fields: education, health services and legal databases.¹²

Transnational talent hub

Both Estonia and Finland face the challenge of attracting the highly specialized workforce that is required to transform their economies in accordance with the needs of service- and technology-driven societies. Talent attraction has intensified in the global context, where companies, cities, states and regions compete with each other in attracting and retaining the foreign workforce they need. Countries also seek to attract the best and brightest foreign students to their higher education institutions, often with the purpose of having them stay in the country after graduation. As a result of the increasing demand for and shortage

12 Government of Finland, Ministry of Education and Culture, ‘Finland to promote digitalisation during its 2021 Presidency of Nordic Council of Ministers’, 21 January 2021, <https://minedu.fi/en/-/10623/finland-to-promote-digitalisation-during-its-2021-presidency-of-nordic-council-of-ministers>; Ministry of Finance of Finland, ‘World’s smoothest cross-border mobility and daily life through digitalisation’, <https://vm.fi/en/world-s-smoothest-cross-border-mobility-and-daily-life-through-digitalisation>.

of highly skilled workers, talent attraction is no longer only a matter of individual businesses. States and regional actors are also investing in attracting international talent.

The ability of Estonia and Finland to attract a highly competent workforce is one of the cornerstones of the economic success of the region, essential for reducing the barriers to growth and boosting innovation and international competitiveness. However, there is ostensibly room for improvement. According to the OECD's Talent Attractiveness Survey, Finland and Estonia are lagging behind the other Nordic countries and the Netherlands when it comes to their attractiveness to highly educated workers.¹³

The two countries would benefit from joint efforts to become a talent hub with smooth transnational living and working conditions. Improved cross-border digital public services can make the region more attractive to the highly skilled international labour and talent that is increasingly needed in their societies. Modern cross-border services would facilitate regional mobility, especially for transnational entrepreneurs, students and workers in the region. Priority should be given to cross-border solutions in areas related to social security, health and tax issues, as well as education and professional qualifications. The attractiveness of the Helsinki-Tallinn area could also be improved by ensuring smooth relocation for the whole family when recruiting highly qualified workers, by increasing multilingual education for children, and by helping family members find work.

WORKING TOGETHER FOR VIBRANT ECONOMIES

Trade and investments have been an important part of the growing connections between Estonia and Finland over the past decades. Finland has been Estonia's most important economic partner since the 1990s. At the same time, the relative importance of Finland for the Estonian economy has decreased, reflecting the growing size and scope of the latter. Between 2000 and 2020, Finland's share in foreign investments to Estonia dropped from 30% to 21%, while its share in Estonia's foreign trade dipped from 22% to 14%. A further factor indicating that the relationship is becoming more equal is the considerable growth in FDI from Estonia to Finland.

Leading startup ecosystems

Venture capital investors are the growth drivers and builders of future growth companies and new jobs. The FinEst bay area is well equipped to accommodate the leading growth company concentration in Europe and to become a globally competitive financial ecosystem.

Estonia ranks six times higher in comparison to the average number of startups in Europe. Estonia's startups raised a record number of capital investments in 2021, to the tune of over 950 million euros. Estonia's nine unicorns exceed those of any other European country relative to the size of the population. A major part of the Estonian startup ecosystem consists of the two technology and business hubs in Tallinn – Technopol Science and Business Park, and Ülemiste City – which host hundreds of Estonian technology and IT companies, including the unicorns. To this end, Tallinn ranks among the top 20 European business hubs.

In 2020, Finnish startups attracted twice as much funding as most of their European counterparts, totalling 951 million euros. The majority of investments in the first half of 2021, 409 million euros, was foreign venture capital. The Helsinki region is among the top 20 urban areas in the world in the list of emerging

¹³ Organisation for Economic Co-operation and Development, 'How do OECD countries compare in their attractiveness for talented migrants?', no 19, May 2019, <https://www.oecd.org/migration/talent-attractiveness/>.

startup ecosystems.¹⁴ A non-profit startup centre, Maria O1, is currently the largest startup concentration in the Nordic countries. It employs more than 1,100 people, housing more than 170 startups and growth companies, and 12 venture capital funds. Maria O1's diverse network, favourable innovation conditions and central location help startups to grow.

Foreign fund investors currently account for less than one-fifth of venture capital funds' fundraising in Finland. The average size of Finnish venture capital funds in 2020 was half the European average (100 million), consisting mainly of small domestic fund investments worth less than EUR 1 million. The share of the public sector in the fundraising of Finnish venture capital funds is about 30%. Estonian venture capital funds are also rather small and make from one to a few million euro investments on average. They are relevant at the early stage of the startup, but at a later stage the startups have to rely on international investors. The average size of the Estonian funds is close to 50 million euros.

The increasing attraction of foreign capital is dependent upon the size of the domestic funds. Again, improved venture capital markets for greater scalability and growth finance are needed in order to turn Finnish-Estonian funds into major players at the European level. Larger domestic venture capital markets would mean higher profitability for future startup funders in and beyond the region. This is the path to new growth, jobs and well-being, expedited by regulatory development and an increase in competent capital and skilled labour. In comparison to other companies in the same industry and size class, startup revenue is nine times and staff growth five times higher.

Smarter connectivity and twin-city synergy

The Baltic Sea is a lifeline for both Finland and Estonia, and connections and flows between the countries are dense. Significant flows of passengers, goods, services, finance, and information cross the Gulf every day. Sea cables, electricity grids, key maritime routes and communication links bind the two countries closer together than ever before. The ferry connection between Helsinki and Tallinn is one of the busiest in the world, with 90 passenger ferries per week sailing between the two capitals. Some 90% of imports to Finland — and 80% of exports from Finland — travel via the Baltic Sea.

Increasing flows require investments in sustainable infrastructure that will enable greater global competitiveness for the whole region. The similar economic, social and cultural background — as well as the relatively small size of the economies — of Finland and Estonia create good preconditions for building on the synergies of the two metropolitan areas, Helsinki and Tallinn, despite the relatively long distance (82 km) between them. To overcome the distance, intelligent logistical systems and strong infrastructure, as well as real-time data-sharing, are prerequisites for building a smooth twin-city dynamic that would benefit both countries.¹⁵ Examples of other European regions are encouraging; implementing twin-city synergies can provide tangible benefits by boosting competitiveness, investments, employment and economic growth.

Acknowledging that closer cooperation and exchange of information on transport systems is needed, Finland and Estonia signed an MoU on transport in 2021.¹⁶ Some of the key considerations in this realm

14 Startup Genome, the Global Startup Ecosystem Report 2021, <https://startupgenome.com/report/gser2021>.

15 Significant cooperation and collaborative projects are ongoing. For an overview of some of them in 2014–2020, see FinEst Smart Mobility, https://www.hel.fi/static/kanslia/elo/projektijulkaisu_finest-smart-mobility.pdf.

16 Finnish Government, Press Release: Finland and Estonia signed a Memorandum of Understanding on cooperation in the transport sector, 26.4.2021, <https://valtioneuvosto.fi/en/-/finland-and-estonia-signed-a-memorandum-of-understanding-on-cooperation-in-the-transport-sector>.

are related to the Rail Baltica railway construction as part of the EU Trans-European Transport Network (TEN-T) and Finland's potential role in this project.

The Helsinki-Tallinn connection is also part of the TEN-T North Sea-Baltic corridor. The rail link from Tallinn to Helsinki could be realized either with a ferry or a tunnel connection. The idea for a Helsinki-Tallinn tunnel has caught the attention of the wider public and has been debated heatedly for some years. The MoU on transport mentions the project, so realizing the tunnel remains a possibility, and cooperation on the topic is foreseen. The eventual decision will depend on many considerations, and further studies on its economic and environmental impact will be needed. The tunnel project can potentially be integrated into the TEN-T network and an application for EU funding can be made, provided that it will be connected with Rail Baltica and other national transport infrastructures. The project involves sensitive questions related to security, the environment, as well as possible private partners. With the MoU, the governments signalled that the tunnel would be a potential high-security risk infrastructure, and hence it can only be implemented and operated under full state control.

The coming decade will see changes in global supply chains, which will also have an impact on regional trade routes and transport corridors. Maritime transport in the Baltic Sea and the trade volumes of Estonian and Finnish ports in the North-South direction may increase after the finalization of the Rail Baltica project. Finnish transit trade through Estonian ports is expected to grow. The new rail connection may also have spill-over effects on new industrial activity in both Estonia and Finland.

As described above, digital data-sharing is an important component of Finnish-Estonian connectivity. Furthermore, interconnections can also enhance security in strategic sectors such as energy. A landmark example of this is the two-way Balticconnector gas pipeline between Finland and Estonia, which became commercially operational in 2020 and increases the energy supply and security for the Baltic states, Finland and the whole EU.

To achieve energy security, reduce electricity market uncertainty and meet the ambitious goal of transitioning to a carbon-neutral economy, the Estonian government is evaluating the development of new low-emission electricity generation capabilities, including the possibility of nuclear power generation. Finland is a country with a long tradition of nuclear energy production. The transfer of Finnish experience in the field of nuclear energy and nuclear safety could be an area in the broader energy security cooperation between the two countries. This includes cooperation with Finnish universities in education and research on nuclear energy. If Estonia chooses nuclear power generation, it needs to develop and maintain a broad base of new expertise in the energy sector. The introduction of nuclear energy capabilities will call for a highly skilled workforce in new competence areas to develop and operate the nuclear power projects, as well as experts in government agencies to regulate and supervise the nuclear power industry and fulfil the country's international obligations arising from nuclear projects.

A big energy security project for the coming years is the decision to desynchronize the Baltic electricity grid from the Russian grid and synchronize it exclusively with the European one. There is already a common electricity market between the Nordic and the Baltic countries — Nord Pool. It includes partly EU financed submarine power cables that connect Estonia to the Nordics: EstLink 1&2 to Finland and Nord-

Balt to Sweden. Once connections with mainland Europe are up and running, the integration of the Baltic states into the EU energy market and their security of supply will be much improved.

Stronger resilience

Resilience can be defined as the ability of a society to absorb, adapt to, recover and learn from unexpected disruptions, crises and uncertainties. These shocks can, for instance, be caused by natural disasters, accidents or hostile action by a state or non-state actor, and they can be directed against individuals, societal groups, businesses, authorities – or indeed, the critical services and infrastructure of a state. The focus here is on Estonian-Finnish cooperation in the realm of non-military aspects of comprehensive security, which makes an essential contribution to the development of open, vibrant and at the same time stable economies.

The key non-military security threats identified in respective national documents are highly similar and include 1) emergencies and supply disruptions to essential goods and services, 2) hybrid influencing, cyberattacks and disinformation, as well as 3) organized crime and terrorism.¹⁷ In most of these fields, cooperation between Finland and Estonia is already robust and/or constantly developing.

Due to the importance of the Gulf of Finland for the connectivity of both countries, maritime security is a lifeline for Finland in particular, but also for Estonia. Hence, it is hardly surprising that the two countries have a long history of emergency preparedness and rescue cooperation at sea. A new bilateral agreement on civil protection was signed in 2014. Apart from the established and regular maritime rescue and anti-pollution operation exercises – including with other littoral states such as Sweden and Russia – the bilateral cooperation extends to training and the exchange of information and experts.

Furthermore, the Baltic Sea hosts several critically strategic infrastructures such as gas interconnectors and critical communications cables – the security of which is essential for both countries. Ports and supply chains in Finland and Estonia are vulnerable to disruptions due to accidents or hostile operations, including low-threshold cyberattacks. Risk scenarios at sea include energy supply or communications disruptions, harassment of civilian and military maritime activity, and accidents.

When it comes to energy security, Finland and Estonia – along with other Baltic and Nordic countries – have attempted to increase their supply security by increasing interconnections between them and beyond towards Europe. Energy interconnections are actively encouraged and supported financially by the EU. The Nordic and Baltic countries are relatively interdependent in other realms as well, so a cyber incident in one country is likely to impact the others too. The protection of vital services and critical infrastructure – such as industry, water and the energy supply, the banking system, healthcare and transport – is a continuous priority for both countries.

In order to be prepared for supply disruptions due to cyber incidents, the National Cyber Security Centre (NCSC-FI) and the Estonian Information Authority (CERT-EE) have developed their coordination and preparedness and organized joint critical infrastructure incident exercises.¹⁸ Furthermore, national transmission system operators cooperate closely, including in response to different types of incidents.

Even beyond national authorities, cooperation and coordination against cyber and hybrid threats has strengthened in the Nordic-Baltic context. Estonia hosts the NATO Cooperative Cyber Defence Centre of

17 Government of Finland (2021), Government's Defence Report, <https://julkaisut.valtioneuvosto.fi/handle/10024/163407>; Defence Ministry of Estonia (2017), Security Concept of the Republic of Estonia, https://kaitseministeerium.ee/sites/default/files/elfinder/article_files/national_security_concept_2017.pdf.

18 Traficom, National Cyber Security Centre of Finland, 'Estonian and Finnish information security authorities joined forces in FINEST19 exercise',

Excellence (CCDCOE) in Tallinn, where Finland is also a contributing participant. The CCDCOE also has industry sponsors and partners — including some Finnish ones. Finland, for its part, hosts the European Centre of Excellence for Countering Hybrid Threats, in which Estonia is also a participating state. The exercises and training provided by the CoEs have advanced shared situational awareness and the ability to act together in the face of hybrid or cyber incidents. Nonetheless, despite significant progress, work remains to be done in order to determine clear regional priorities in countering hybrid threats.

When it comes to issues such as organized crime, money laundering and tax fraud, investigative collaboration and joint investigations between Finland and Estonia are already in common and wide use. The authorities on both sides of the Finnish Gulf cooperate routinely with their counterparts, and the national tax authorities, for instance, share data between Finland and Estonia in real time.

WORKING TOGETHER FOR A GREEN FUTURE

A large part of the maritime traffic should be carbon-neutral by 2050, calling for action today. New solutions need to be found in ship-building and maritime transport through the introduction of innovative technologies. There are at least three ways to cut emissions: fuel solutions, ship design, and traffic planning and speed. Solar and wind power, hydrogen fuel and battery development are all part of the future directions of maritime development. Intelligent traffic solutions and data-sharing can also ease some of the negative externalities of large traffic volumes across the Gulf and through the ports. One way of cutting emissions could be the diversification of ferries into slow and environmentally more sustainable cargo ships, and fast, lighter passenger ferries. Furthermore, the development of hydrogen-powered ferries could be one of the much-needed solutions.

Overall, there is a need to further consider common economic incentives to support the development of environmentally friendly maritime transport between Finland and Estonia. Governmental subsidies should encourage green transition also at sea. The significant fleet transitions around the world could point to economic opportunities for Finnish and Estonian maritime technology firms and the shipping industry, and new opportunities for cooperation. At the same time, new technologies may create new vulnerabilities that also need to be addressed in cooperation. For instance, while automated or self-driving vessels can create new areas of technological development, automatization and digitalization, they also involve vulnerabilities that increase the demand for new solutions vis-à-vis cyber security and the protection of computer systems on vessels; furthermore, there will be a demand for certification and auditing services for the respective systems. This could constitute a promising new area for cooperation on technological innovation between the two countries.

The goal of promoting green economic growth and sustainable development is becoming increasingly relevant in the digital economy. Running software always adds to the carbon footprint, but much can be done to reduce this. Advanced energy-efficient technologies and green electricity could help to reduce the negative impact. New technologies can also help in providing solutions to climate and environmental problems.

When it comes to Estonian-Finnish cooperation, it will be necessary to take a strategic view and to point out the most critical opportunities for X-Road to contribute to climate goals, which are technically possible and necessary for making strategically wise future decisions and investments. The short-term goal is to

26.3. 2019, <https://www.kyberturvallisuuskeskus.fi/en/news/estonian-and-finnish-information-security-authorities-joined-forces-finest19-exercise>.

focus on the direct and tangible environmental impact of the X-Road software. The long-term goal could be to make X-Road the most sustainable data exchange solution in the world.

There is also potential to intensify cooperation in environmental research. Finland, Estonia and Russia have cooperated in Baltic Sea research, its assessment and environmental protection. This cooperation has continued uninterrupted despite political disagreements with Russia on other issues. Currently, the states are preparing a new Baltic Sea Declaration for the years 2022–2026, and proposing a new ‘Year of the Finnish Gulf’ for 2024. For Finland and Estonia, there is still room to strengthen and expand bilateral cooperation in research in order to pool resources for increased efficiency.

WORKING TOGETHER FOR EXTENDED CULTURES

The Estonian and Finnish languages and cultures are deeply interrelated historically. Cultural cooperation has been an important area for building mutual trust, which has benefitted both nations ever since the time of national awakening in the 19th century. In 1937, a bilateral cultural convention was signed,¹⁹ and 80 years later a Finnish-Estonian Cultural Foundation was established. Cultural delegations were also exchanged during the Soviet occupation of Estonia, and the Estonian language was taught in many Finnish schools. Since Estonia regained independence, cultural cooperation has become closer than ever, increasingly transnational and more globally oriented.

New opportunities for language learning

Both Estonian and Finnish belong to the Finno-Ugric group of languages, a branch of the Uralic language family. Alongside Hungarian and Maltese, they are the only official EU languages which are not of Indo-European origin. The two languages are similar, yet different enough, in that Estonians and Finns need to learn each other’s language in order to gain a proper understanding. Former Finnish President Mauno Koivisto compared the similarity between the two languages as follows: “We understand a third, a third we misunderstand, and a third we do not understand at all”.²⁰

The linguistic closeness has been an important foundation for cooperation in the fields of culture and education, but also a basis for friendship, economic ties and daily mobility. By understanding another nation’s language, one can understand its ways of thinking, social norms and cultural codes; ideas and thoughts that might otherwise be lost in translation. In an ever-globalizing world where English has become the lingua franca, small languages are facing many challenges. During the Soviet occupation, many Estonians knew the Finnish language and were eager to learn it by watching Finnish television and listening to Finnish radio – providing windows to the West. In Finland, knowledge of the Estonian language was more limited to a group of dedicated Estophiles. Today the situation has changed on both sides. The generation of Estonians who have grown up after the restoration of independence do not know Finnish as well as their parents or grandparents did, while knowledge of Estonian is rare among the younger generation of Finns.

Young Estonians and Finns largely communicate with each other in English. The decrease in the learning and knowledge of foreign languages (apart from English) is a broader problem that goes beyond Estonian-Finnish relations. However, it also has to be acknowledged that a good knowledge of English among

19 Fenno-Ugria, ‘History 1927–1940. Fenno-Ugria Before World War II’, <https://fennougria.ee/en/organisation/history/history-1927-1940/>.

20 Annekatriin Kaivapalu, ‘How do Estonians and Finns understand each other’s language?’, Tuglas Society, 8 November 2019, <https://www.tuglas.fi/kuidas-eestlased-ja-soomlased-teineteise-keelest-aru-saava>.

the younger generation opens up vast new opportunities for cooperation. Not knowing each other's language has become less of an impediment to close relations than in the past.

Furthermore, there are rapidly developing new opportunities provided by language technology. Nowadays, when digital tools have become the norm in almost every field of life, language learning apps such as Duolingo and machine translation tools such as Google Translate are part of many people's daily lives. However, the use of these tools for small languages is limited. Duolingo now offers a course for learners of Finnish, but at the time of writing does not provide a course in Estonian as there are too few native speakers, while Google Translate as well as other machine translation tools usually provide little more than 50% accuracy when it comes to less spoken languages such as Estonian and Finnish. According to the results of the WMT International Machine Translation Conference, the best machine translation between Estonian and English is made by Tilde, a language technology company operating in the Baltics and Scandinavia, and translation engines created by the Japanese.²¹ Estonian and Finnish are two of the most complicated output languages for machine translation together with Turkish. There are a number of reasons for this, including rich morphology, free variation in the order of words, and a smaller number of translation examples compared to other languages.²²

Despite the complex nuances, one possibility for easing the linguistic communication between Finns and Estonians without using English as an intermediate language is speech recognition. The Tilde company has already developed automatic speech recognition and text-to-speech systems for Latvian, which are freely available online. Specializing in morphologically rich languages and novel methods for better data acquisition could potentially provide a useful speech recognition tool for Estonian and Finnish as well. Nevertheless, it is important to note that no translation tool could ever take the place of a conversation in the same language. The development of digital translation tools can complement language learning by humans but not replace it.

Thus, it is important to ensure that there will be people in both Estonia and Finland who are fluent in the other country's language also in the future. They do not have to be large in number, but such people make an indispensable contribution to deep mutual understanding and close cooperation.

Today, universities on both sides of the Gulf of Finland are facing difficulties with the continuation of Estonian and Finnish language teaching. This is leading to a situation whereby both countries lack high-level professionals in different fields who would understand both the Estonian and Finnish languages and culture. While in the 1970s and 1980s there was one Estonian language lector at every university in Finland, today there is one only at the Universities of Helsinki, Turku, Oulu, Jyväskylä and Tampere (out of a total of 13 universities nationwide). Even the University of Helsinki, which is responsible for Estonian language and culture study programmes throughout Finland, has decided to abandon the permanent position of university lecturer in the Estonian language and offer courses based on an hourly rate instead. On the Estonian side, Finnish is taught as part of the Finno-Ugric languages programme at the University of Tartu. At Tal-

21 ERR Novaator, 'Selgusid parimad eesti-inglise-eesti tõlkemootorid' [Best Estonian-English-Estonian translation engines revealed], <https://novaator.err.ee/874855/selgusid-parimad-eesti-inglise-eesti-tolkemootorid>.

22 Ibid.

linn University, structural reforms introduced in 2018 and a lack of financial reforms pushed the University to cut down the number of academics teaching the Finnish language and culture by almost a half.²³

Cultural cooperation going global

The “Finnish Bridge” (Soome sild) depicted in Lydia Koidula’s poetry became the symbol of ties between Estonians and Finns during their national awakening. Today, there are many organizations and initiatives supporting cultural cooperation between the two countries. The Tuglas Society – an Estonian-Finnish friendship organization which has branches all over Finland and which organizes events to introduce Estonian culture and language courses – has been active for over four decades. The Society publishes a Finnish-language journal, ELO, which promotes Estonian culture in Finland. The Finnish Institute in Estonia was opened in 1994, and the Estonian Institute in Finland one year later. In 2010, the Viro-keskus was opened in Helsinki, a ‘new-generation’ Estonian House that brings together functions such as representing Estonia (the Estonian Institute), promoting export and attracting investments (Enterprise Estonia), nurturing Estophilia, and supporting the adaptation of Estonian immigrants (the Tuglas Society, the Association of Estonian Societies in Finland).²⁴

In January 2017, the Finnish-Estonian Cultural Fund was established, based on one of the proposals in the 2008 report. The Fund’s mission is to increase mutual language skills, develop joint cultural projects, and promote cultural exports to third countries. It awarded its first symbolic grant of 15,000 euros during the celebration to commemorate the 80th anniversary of the Convention on Intellectual Cooperation of Estonia and Finland, held in Helsinki on 1 December 2017.

Literature exchange has always played an important role in forming cultural ties between the two countries. Events such as Finnish book fairs in Helsinki, Turku and Tampere, and Estonian events such as Prima Vista, HeadRead, the Koidula tänav festival and Arvamusfestival are important platforms for introducing Estonian literature in Finland and vice versa. The first translations date back to the mid-19th century and continued even during the Russification period in Estonia in the 1980s.

The spectrum of translations started to expand in the 2000s and has increased in number during the last decade. Between 2000 and 2021 fiction alone accounted for 174 translations from Estonian into Finnish, and 347 translations from Finnish into Estonian.²⁵ The total number of translations from Finnish into Estonian during the same period was 558. In comparison, the total number of translations from Finnish into Swedish was 368, and from Finnish into Russian 320.²⁶ While the average number of (fiction) translations from Estonian into Finnish has been eight works per year, the number has occasionally been larger. For example, the 2011 Helsinki Book Fair, where Estonia was a theme country, boosted the number of translations to 20 in the same year. In autumn 2021, translations of works by two outstanding authors, Finnish writer Paavo Haavikko and Estonian writer Jaan Kaplinski, were published.

The large number of translations, including more sophisticated works such as poetry, cultivates cultural learning and a better understanding of each other’s cultures. Such a high number of translations is rare in small languages and is possible thanks to the good knowledge of each other’s languages at a professional

23 Annekatrin Kaivapalu, ‘Vastuvõtt soome keele ja kultuuri erialale peab jätkuma’ [Enrolment for Finnish language and culture must continue], Postimees, ARVAMUS, 5 March 2018, <https://arvamus.postimees.ee/4429489/annekatrin-kaivapalu-vastuvott-soome-keele-ja-kultuuri-erialale-peab-jatkuma>.

24 Embassy of Estonia in Helsinki, ‘Cultural relations between Estonia and Finland’, <https://helsinki.mfa.ee/en/estonia-and-finland/cultural-co-operation/>.

25 Estonian Literature Centre, ‘Translations by year 2001–2021’, <http://estlit.ee/elis/?cmd=translations>.

26 The Finnish Literature Society (SKS), ‘Finnish literature in translation’, <http://dbgw.finlit.fi/kaannokset/index.php?lang=ENG>.

level. However, as the interest in studying both Estonian as well as Finnish language and culture has been declining, a lack of professional translators has become a concern.

The film industry is another exemplary field of cooperation between Estonia and Finland. Film companies in both countries co-produce films each year, while such cooperation has intensified during the past decade. Between 2017 and 2021, there were 18 Film Estonia projects in cooperation with Finland, including eight feature films and five series. In comparison, there were four projects with the UK, three with the US, and two with Sweden.²⁷ Between 2015 and 2021, there were five Finnish film productions co-produced with Estonian film companies, while two projects are in production at the time of writing. Some Finnish–Estonian co-produced films have won world-famous film awards. The Finnish–Estonian–Russian–German co-produced movie *Compartment No. 6* (Hytti nro 6) won the Cannes Film Festival Grand Prix in 2021. The Finnish film *The Eternal Road* (Ikkitie), produced in collaboration with Estonia, was named the best Finnish film of the year and won the Valhalla Award at the 2018 Santa Barbara International Film Festival. In 2021, the first steps were taken towards the development of the Film City (Filmilinnak) studio in Tallinn, which has considerable potential to enhance domestic as well as international film production, including Estonian–Finnish cooperation.

The film industry is an excellent example of the growing international dimension of Estonian–Finnish cultural cooperation. While cultural ties have always been a vital component of bilateral relations, today many joint initiatives have the additional aim of making the two cultures and countries better known internationally. The two dimensions — bilateral and international — complement each other and nurture a vibrant sphere of joint activities. Culture is also an important aspect of attracting foreign visitors, as it makes up 40% of world tourism. Closer cooperation between Visit Estonia and Visit Finland could be one way of more effectively introducing our cultural attractions to the world together. Both countries could also benefit from increasing joint business activities in the field of art and culture. Another future aim of joint cultural projects should be to more actively engage the younger generation. In this regard, cooperation between Aalto University and the Estonian Academy of Arts is an excellent example of jointly developing ideas in popular culture in the digital era.

The best education in the world

During the past decades of rapid globalization, education has been one of the fields of expanding international cooperation. Both Estonia and Finland have outstanding results in PISA tests, with students in both countries scoring way above the OECD average in each assessed subject since the beginning of PISA assessment in 2000.²⁸ This has piqued the interest of many countries in possibilities to learn from the Finnish and Estonian education systems. Although neither country has identified a secret formula for a successful education system, they are already cooperating closely to develop the international marketing of education. Good PISA test results give the two countries an opportunity to make themselves more globally visible. For example, during the EXPO World Exhibition in December 2020, the two countries organized a joint event, and cooperation continued as part of EXPO Dubai Knowledge and Learning Week.

During the last three years, Finnish–Estonian cooperation between the Education and Youth Board (Harjo) of Estonia and the Finnish National Agency for Education has increased. Recognized future opportunities for joint activities in this field include a shift from mass education to personalized education and learning, building digital learning systems by utilizing artificial intelligence, developing a hybrid model that

27 Data provided by Film Estonia.

28 Finland started to participate in the PISA tests in 2000, Estonia in 2006.

combines school and distance learning by drawing on the experiences of the COVID-19 pandemic, and building a shared education platform for private and public actors and NGOs. These findings offer important prospects for a FinEst education model.

In higher education and research, Finnish and Estonian universities cooperate in numerous ways, including joint research projects, student exchange as well as various regional and international cooperation platforms. There were 664 Estonian university students studying in Finland during the school year of 2006/07. The number increased to more than 800 students in 2013 and 2014 (816 and 858 respectively) and declined to 699 students in 2019.²⁹ The number of Finnish university students studying in Estonia experienced a more significant growth, more than tripling from 424 in 2006/07 to 1,375 in 2015/16. The latest figure in 2021/22 dropped to 971 due to the Covid-19 pandemic.³⁰

The EU's Erasmus Programme has been a key tool in the exchange of students across the Gulf of Finland for more than two decades. In addition, since the beginning of 2008, all Baltic countries can participate in the equivalent Nordic programme, Nordplus. Since 2019, the Estonian Research Council has participated in establishing various NordForsk joint programmes, which offer Estonian researchers more opportunities to advance their cooperation with Nordic colleagues. While there has been a lot of discussion on possible joint study programmes between universities in Estonia and Finland, there is currently only one run by Tallinn University of Technology (TalTech) and Aalto University – a joint double-degree graduate programme entitled "Product Development and Production Engineering", specializing in Shipbuilding.

The FINEST TWINS Smart City Centre of Excellence project is a good example of cross-border cooperation between universities and the public and private sectors, which capitalizes on the regional potential in research and innovation. The joint €32 million project between Tallinn University of Technology, Aalto University, Forum Virium Helsinki and the Estonian Ministry of Economic Affairs and Communications runs from 2019 to 2026 and is financed by EU Horizon 2020 and the Government of Estonia.

29 Data provided by the Finnish Ministry of Education and Culture, based on the database of the Finnish National Agency for Education, Vipunen.

30 Data provided by the Estonian Ministry of Education and Science, based on the Estonian Education Information System (EHIS).

Appendix 1: Statistical trends

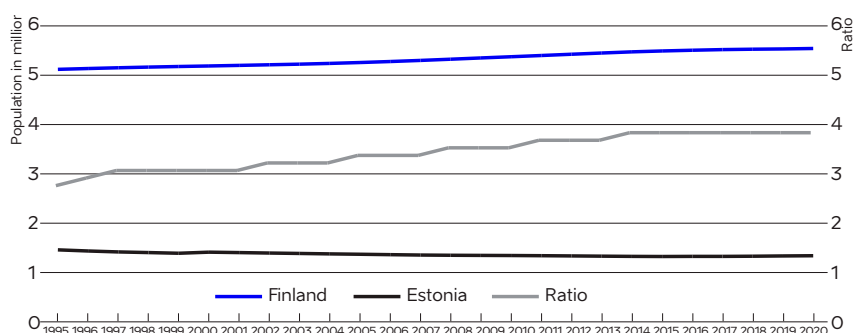
Selected statistics on Estonian-Finnish relations

1. GENERAL

1.1 Population

The population of Finland has shown modest growth during recent decades. The population of Estonia has been on the decrease, but has stabilized in recent years. Migration from abroad is the main reason for population growth in Finland, according to Statistics Finland. The share of people with a foreign background in Finland has been increasing, with Estonians among the biggest population groups in this respect. Emigration to Finland partly explains the decrease in the Estonian population.

Population of Finland and Estonia

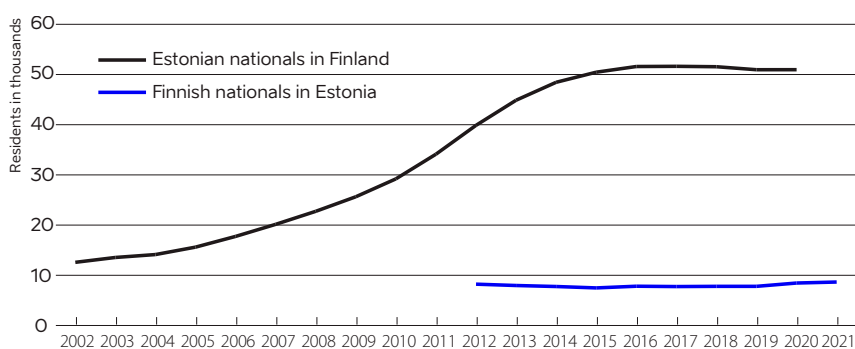


Source: Statistics Estonia, Statistics Finland

1.2 Estonian residents in Finland and Finnish residents in Estonia

With more than 51,000 Estonian nationals living in Finland, Estonians represent the biggest group of foreign nationals permanently residing in Finland. The number of Finnish nationals living in Estonia has ranged between 7,500 and 8,500 since 2012.

Finnish nationals in Estonia; Estonian nationals in Finland

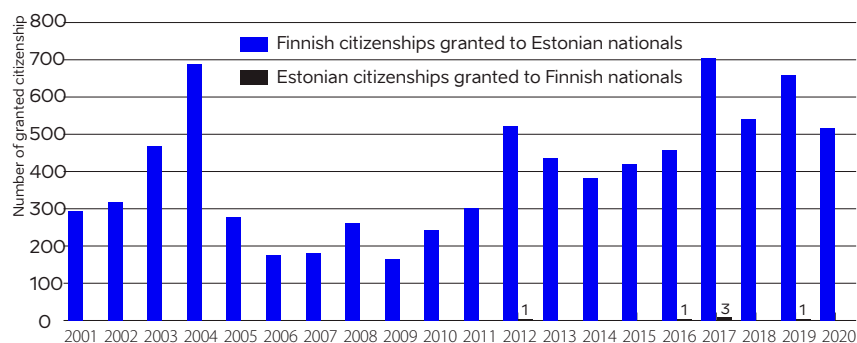


Source: Statistics Estonia, Statistics Finland

1.3 Granted citizenship

A total of 516 Estonian citizens were granted Finnish citizenship in 2020. A total of 6,923 Estonians who are permanent residents of Finland have Estonian-Finnish dual citizenship (An absolute majority or 98% of foreign nationals who have received Finnish citizenship have retained their former citizenship.). The number of Finnish nationals who were granted Estonian citizenship is very small, as Estonian legislation does not allow dual citizenship.

Granted citizenship

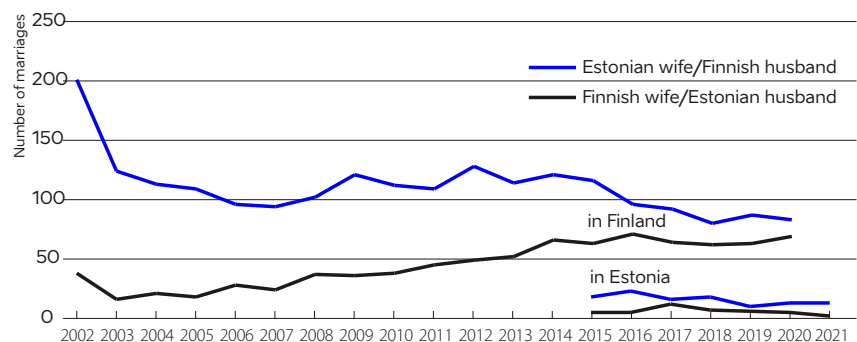


Source: Statistics Estonia, Statistics Finland

1.4 Marriages between Estonian and Finnish nationals

According to Statistics Finland, around 3,000 marriages between Estonian and Finnish nationals were registered in Finland between 2001 and 2020. According to Statistics Estonia, there were 167 marriages between Estonian and Finnish nationals in Estonia between 2015 and 2021.

Marriages between Estonian and Finnish nationals



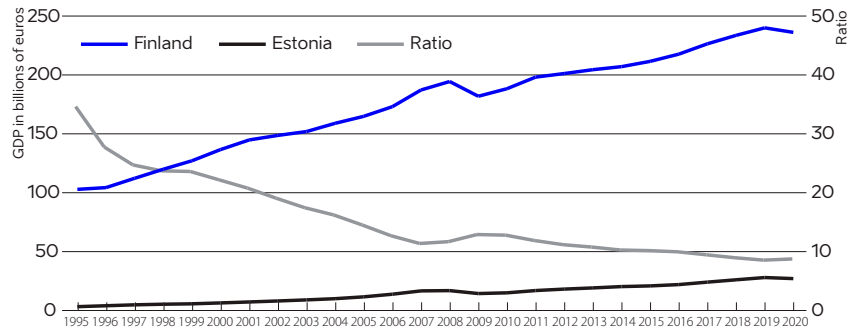
Source: Statistics Estonia, Statistics Finland

2. ECONOMY AND TRADE

2.1 EST-FIN gross domestic product (GDP)

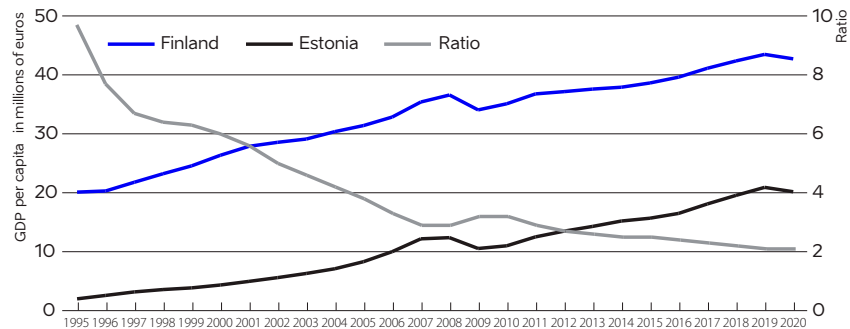
The difference between the per capita GDP of Estonia and Finland was 9.7-fold in 1995, but decreased to twofold in 2020. The pace of decrease in the difference between the two nations has been slowing, and it may take more than a decade for Estonia to catch up with Finland.

GDP in Finland and Estonia



Source: Statistics Estonia

GDP per capita in Finland and Estonia

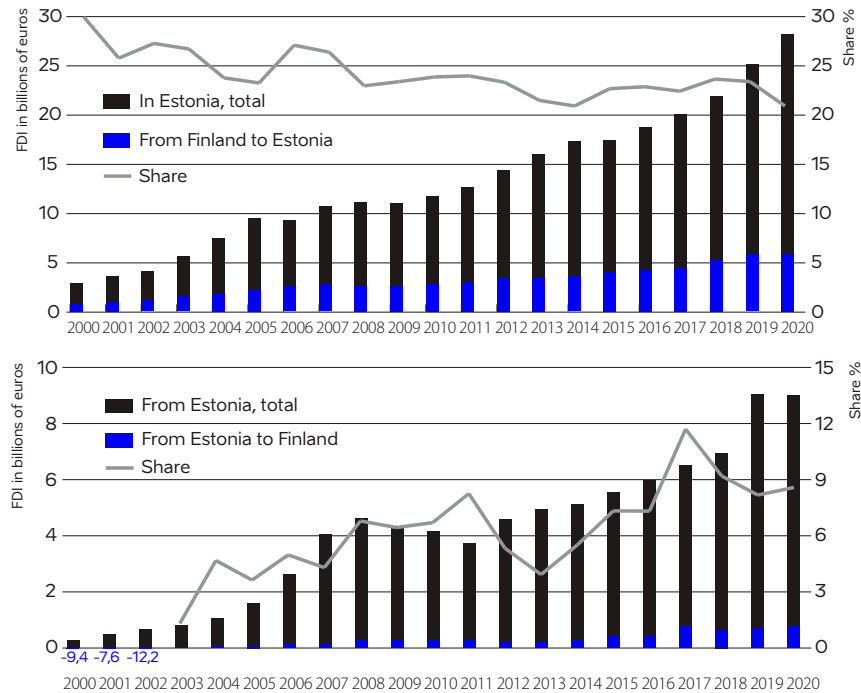


Source: Statistics Estonia

2.2 EST-FIN foreign direct investments (FDI)

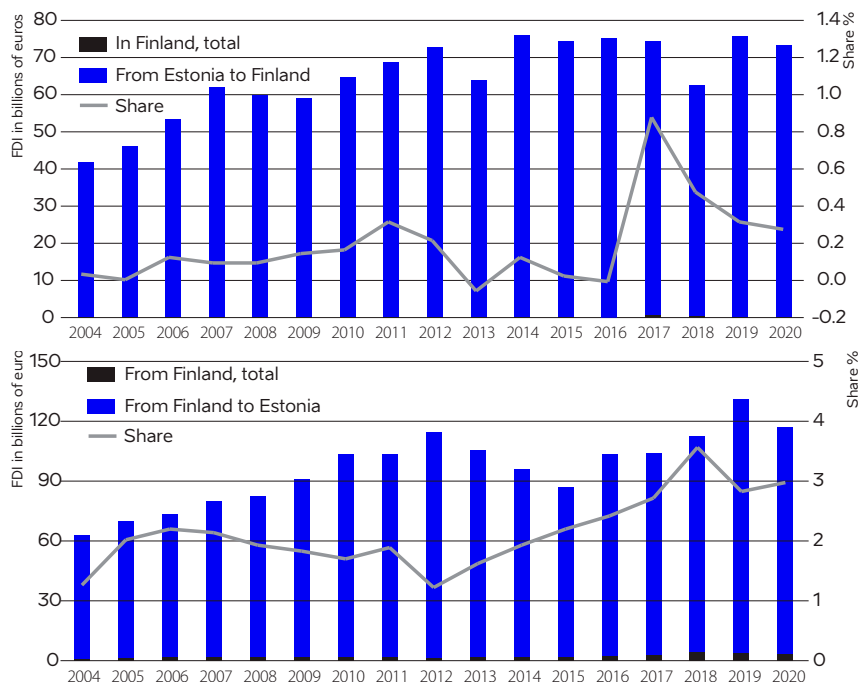
Together with Sweden, Finland is the biggest foreign investor in Estonia. As Estonian international economic relations have diversified, the relative share of Finnish investments has been decreasing, from 29.9% in 2000 to 21% in 2020. Direct investments from Estonia to Finland have increased in recent years, but are still less than 10% of Estonian FDI.

FDI In Estonia



Source: Bank of Estonia

FDI in Finland

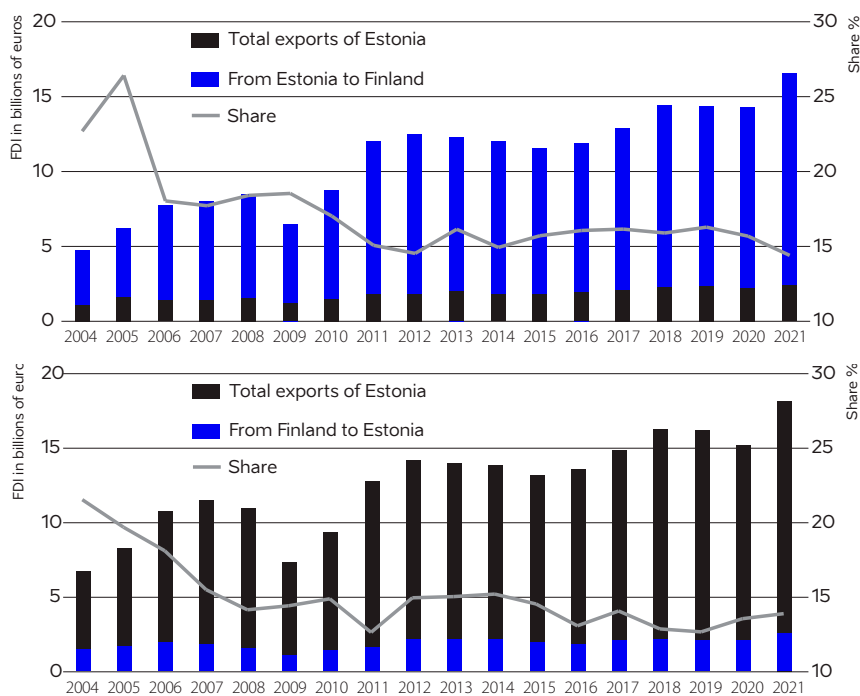


Source: Bank of Estonia

2.3 EST-FIN trade flows: goods and services

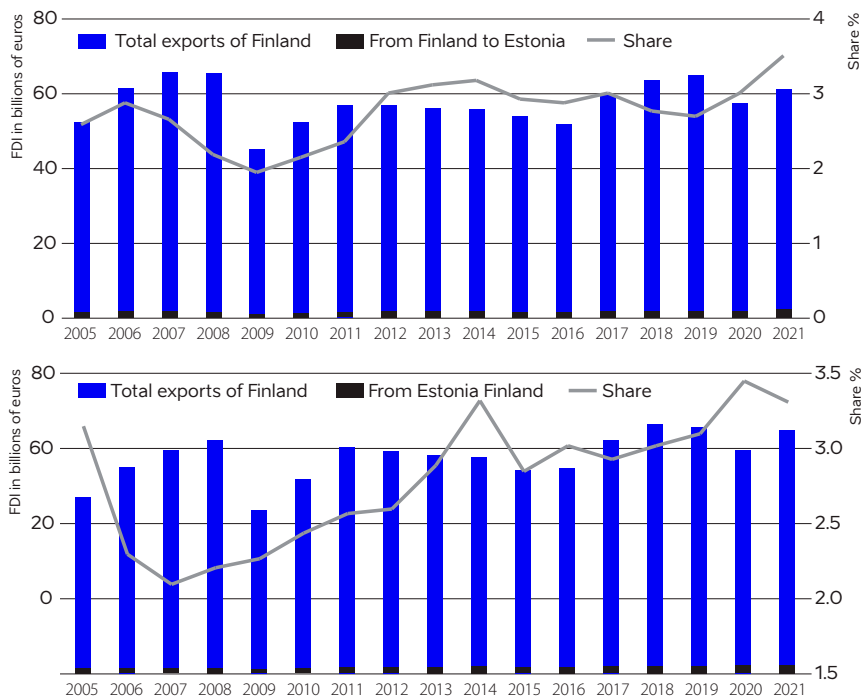
Finland has been Estonia's biggest trading partner. Against the background of the widening scope of Estonian trade relations, the share of Estonian trade with Finland has decreased. Export to Finland was 22.6% in 2004, and 14.3% in 2021. Estonian import from Finland was 21% of total imports in 2004, and 13.8% in 2021. The main groups of goods exported to Finland comprise electrical equipment, mechanical appliances, wood and wood products, furniture, vehicles, and their parts. In imports from Finland, the share of electricity increased from 3.7% in 2017 to 22.7% in 2021. Finland is also the most important destination for Estonian service exports, with the yearly volume remaining above 1.5 billion euros. The balance of Estonian-Finnish trade in services is very much in favour of Estonia.

Foreign trade of Estonia



Source: Statistics Estonia

Foreign trade of Finland

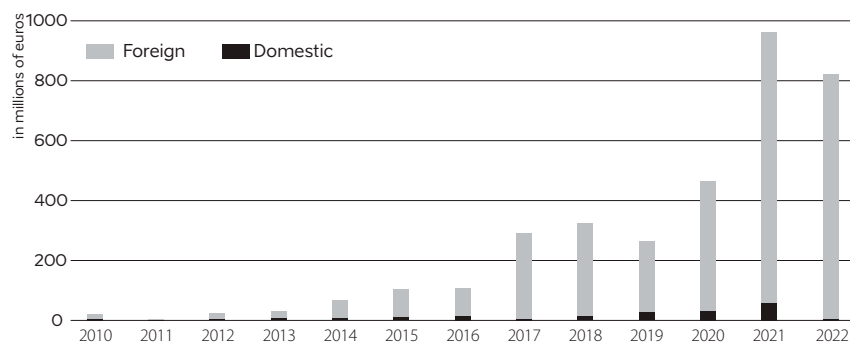


Source: Statistics Finland

2.4 Domestic and foreign investments for startups

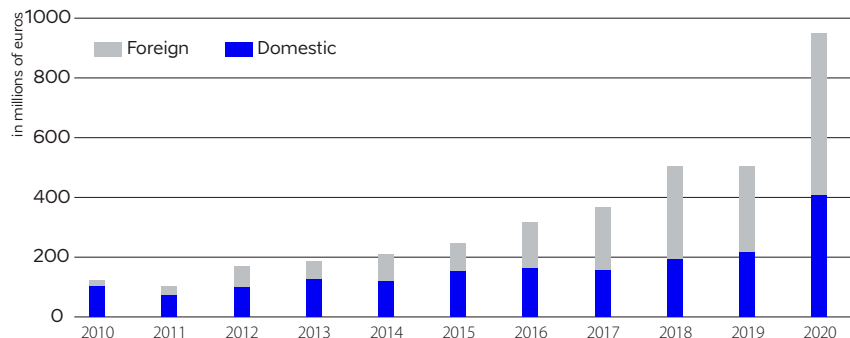
Estonia and Finland have raised more private investments for startups in the last few years than ever before. The amount of foreign investments currently covers nearly all investments in startups in Estonia and more than half in Finland. Among European countries, Estonia ranks first and Finland fifth in venture capital investments per capita.

Domestic and foreign investments to Estonian start-ups



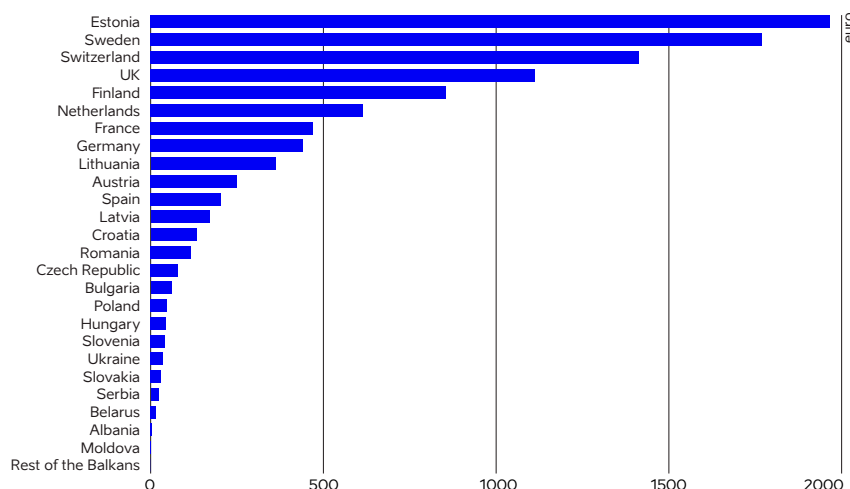
Source: Estonian Startup Database

Domestic and foreign investments to Finnish start-ups



Source: Finnish Venture Capital Association

Venture capital investments per capita in European countries



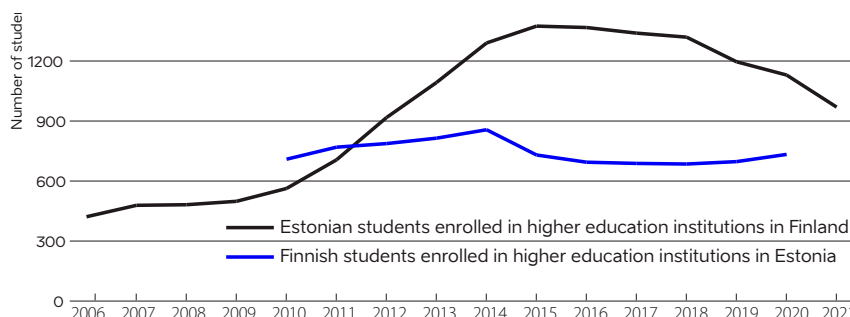
Source: Dealroom.co

3. EDUCATION AND SCIENCE

3.1 EST-FIN higher education students

The number of Finnish students enrolled in higher education institutions in Estonia increased threefold between 2006 and 2016, while the numbers have gone down in recent years, largely due to Covid-19. The overall number of Estonian students enrolled in higher education institutions in Finland has been relatively stable over the years. However, there has been a clear decrease in university students and strong growth in applied sciences students from Estonia.

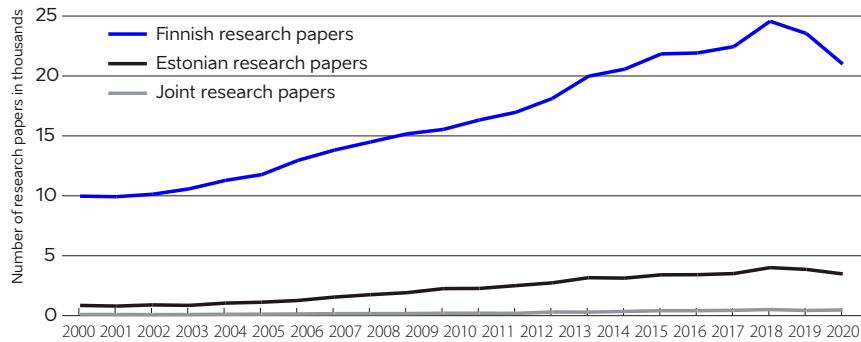
Higher education students



3.2 Joint scientific publications

The number of Finnish-Estonian joint scientific publications grew steadily from 2000 to 2021, reaching 454 publications in 2020. The share of joint research papers accounted for 13% and 2% of all published papers by Estonian and Finnish researchers respectively.

Scientific publications in Finland and Estonia



Source: Web of Science

4. Tourism

4.1 EST-FIN passenger flows: sea, air

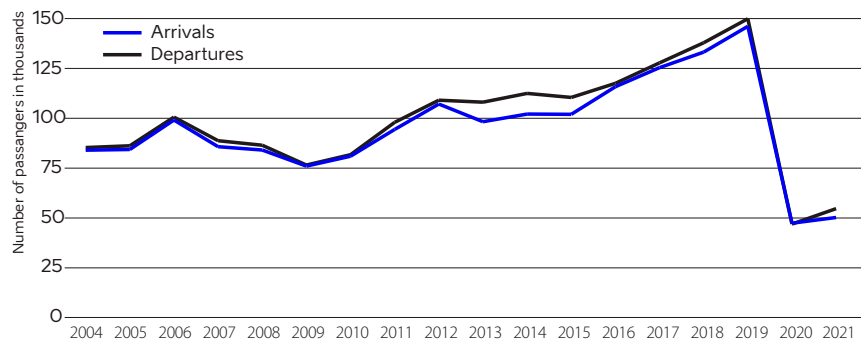
The number of passengers on direct flights between Estonia and Finland rose between 2004 and 2019. However, during the Covid-19 pandemic, the number of travellers dipped drastically to 1990s levels.

Passenger flows in port of Tallinn



Source: Statistics Estonia

Passenger flows in Tallinn airport



Source: Tallinn Airport

5. CULTURE

5.1 Translated books

During the period from 2000 to 2021, there were 175 translations of fictional literature from Estonian into Finnish, and 579 translations from Finnish into Estonian in total. There was a higher number of translations from Estonian into Finnish in 2011 and 2013 due to Finnish book fairs.

Translated fictional literature



Source: estlit.ee, dbgw.finlit.fi

5.2 Joint film productions

Films made with the support of Film Estonia in cooperation with Finland:

- 2017 Ikitie (Eternal Road)
- 2018 Marian paratiisi (Maria's Paradise)
- 2019 Remppa (Renovation)
- 2019 Helene
- 2020/2021 Omerta
- 2020/2021 Veden vartija (Memory of Water)
- 2021 Valoa valoa valoa (Light light light)
- 2021 The Twin

TV series produced with the support of Film Estonia in cooperation with Finland:

- 2017 Bordertown
- 2018 Kaikki synnit (All the Sins)
- 2020 Mieheni vaimo (My Husband's Wife)
- 2020 Kaikki synnit 2 (All the Sins 2)
- 2020 Mädat omenat (Bad Apples)

Source: Film Estonia

Appendix 2: List of contributors

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Maigre, Merle, Senior Cyber Security Expert, e-Governance Academy

Makkonen, Katri, Vice CEO, Miltton

Mikkola, Harri, Leading Researcher, Finnish Institute of International Affairs

Mikkolainen, Elisa, Project Director, Baltic Sea Action Group

Myllylä, Pekka, Managing Director, Tilde Estonia

Narinen, Kirsti, Former Ambassador of Finland to Estonia, Chair of the Board at the Tuglas Society

Nieminen, Marko, Professor of Usability and User Interfaces at Aalto University School of Science

Nõgisto, Joonatan, Vice-Chair of the Federation of Estonian Student Unions

Okk, Gunnar, Vice-President & Chief Operating Officer at Nordic Investment Bank, former co-rapporteur of the second report on Estonian-Finnish cooperation

Palts, Mait, Director General at Estonian Chamber of Commerce and Industry

Persson, Mats, Acting Vice President, Fortum

Plit, Herkko, CEO, P2X Solutions

Praks, Jaan, Assistant Professor, School of Engineering, Aalto University

Rantanen, Eino, Sinine Äratus, Estonian Conservative People's Party

Rebane, Raul, Journalist

Roos, Triin, The Estonian National Youth Council

Ruusalepp, Kaidi, Founder & CEO at Funderbeam, former CEO at Estonian Service Industry Association

Rüütel, Kristi, Youth Organization of the Central Party

Räsänen, Ilkka, Vice President, Public Affairs, Neste

Sakkov, Sven, Ambassador of Estonia to Finland

Saks, Rainer, Member of the Management Board, CybExer Technologies

Savolainen, Jukka, Director of Community of Interest on Resilience and Vulnerabilities, The European Centre of Excellence for Countering Hybrid Threats

Schults, Margus, CEO, Tallink Silja

Sikkut, Siim, Chairman of National AI Task Force at Government of Estonia

Sildna, Helen, Tallinn Music Week Chief Organizer

Sopanen, Sari, CEO at AS Sokotel/Original Sokos Hotel Viru, Chair of the Board, Finnish-Estonian Chamber of Commerce

Sorainen, Aku, Senior Partner, Sorainen AS

Sternfeld, Rainer, Managing Partner, NordicNinjaVC

Sumuvuori, Johanna, State Secretary to the Minister for Foreign Affairs of Finland

Sutter, Hando, CEO, Eesti Energia

Tamkivi, Sten, Technology entrepreneur and investor, co-founder of Teleport, former CEO at Skype Estonia

Tammeaid, Indrek, Innovation management and business development expert, founder & CEO at Finsight

Tammemäe, Helen, Societal relations consultant, Millton
Tapaninen, Ulla, Professor of Maritime Transport, Estonian Maritime Academy, Tallinn University of Technology
Tiido, Harri, Former Ambassador of Estonia in Helsinki
Tynkkynen, Veli-Pekka, Professor in Russian Environmental Studies, University of Helsinki
Vaga, Kristo Enn, Youth Organization of the Reform Party
Vaigu, Aigar, Physicist, Former Head of the Helsinki Estonian Academic Club
Varjola, Ville, Adviser on Connectivity and Geoeconomics, Ministry for Foreign Affairs
Vasama, Jaana, Head of the Tuglas Society
Vesterbacka, Peter, CEO, Finest Bay Area Development Oy
Vutt, Emily Mirelle, Young Social Democrats
Wahlberg, Jan, Ministry for Foreign Affairs of Finland
Wood, Päivi, Senior Advisor, Finland Chamber of Commerce
Ylönen, Matti, Visiting Researcher, Ragnar Nurkse School of Innovation and Governance, TalTech

Appendix 3: Roundtable Discussions

Estonia and Finland: pulling together for green transition

12 October 2021

Embassy of Estonia in Finland

How Estonia and Finland could unite their efforts to have a greater economic impact in Europe and beyond

21 September 2021

Embassy of Finland in Estonia

Youth roundtable

9 September 2021

Embassy of Finland in Estonia

Culture, language, education and youth

9 June 2021

Online

Connectivity and resilience

2 June 2021

Online

Digital, Business and Trade

26 May 2021

Online

PUBLIC EVENTS

New opportunities for the twin cities of Helsinki and Tallinn

14 July 2021

SuomiAreena, Helsinki, Finland

Estonia and Finland in a common digital language space

13 August 2021

Arvamusfestival, Paide, Estonia

