Study on the expected results of Cohesion Policy in Estonia, Lithuania and Latvia within the programming period 2014-2020

Final Report – November 2016

Contract: 2015CE16BAT070

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LIST OF ABBREVIATIONS

BERD – business expenditure on R&D

BS – Baltic States

CLLD – community-led local development

CP – Cohesion Policy

CPR – Common Provisions Regulation

CSR – Country Specific Recommendations

DG Regio – Directorate-General for Regional and Urban Policy

EC – European Commission

EQAR – European Quality Assurance Register

ERDF – European Regional Development Fund

ESF – European Social Fund

EU – European Union

GDP – gross domestic product

GERD – gross domestic expenditure on R&D

GHG – greenhouse gas

ICT – information and communications technology

IP – investment priority

ITI – Integrated Territorial Investment

NEET – not in employment, education or training

NGOs – non-governmental organisations

OI – output indicator

OP – Operational Programme

RI – result indicator

R&D – research and development

RTDI – research, technology, development and innovation

SME – small and medium-sized enterprises

SPO – specific objective

STEM – science, technology, engineering and mathematics

VET – vocational education and training

EXECUTIVE SUMMARY

Introduction and Methodology

The overall scope of the study is to assess the expected impact of Cohesion Policy (CP) on the main sectors/policy areas in the **Baltic States** (Estonia, Lithuania and Latvia) during the programming period 2014–2020. This also involves a discussion on the CP contribution to the development of the Baltic States and to the achievement of key European priorities.

CP investments under the following Operational Programmes (OPs) are analysed: Operational Programme for Cohesion Policy Funds 2014–2020 (**Estonia**); Operational Programme for the European Union Funds' Investments in 2014–2020 (**Lithuania**); Operational Programme Growth and Employment 2014–2020 (**Latvia**). Under these OPs, **Estonia**, **Lithuania** and **Latvia** will respectively receive around 3.5 billion EUR, 6.7 billion EUR and 4.4 billion EUR of EU funding.

The object and the tasks of the study required a complex approach encompassing several analytical exercises. This involved detailed analyses of the OPs interventions specified by the objectives and indicators, financial allocations and the actions to be supported. The sectors/policy areas that the CP was envisaged to affect were examined in terms of EU and national policy objectives and factors external to the OPs, the main trends and overall public financial allocations. In respect of the CP, the impact assessments involved macroeconomic modelling and an assessment of the CP contribution based on the linkages between indicators, case studies and expert judgements.

So called "context indicators" were used as the main indicators for the in-depth analysis of the main trends and the CP impact in the Baltic States. In total, the 20 indicators best capturing the main policy objectives and development of the sectors/policy areas were selected for this purpose.

The main role in impact assessment terms was played by macroeconomic modelling. In order to carry out the CP impact evaluation, three new models were constructed (HLT16 for Lithuania; HEE16 for Estonia; and HLV16 for Latvia), and equations developed for each linking the context indicators to the relevant macroeconomic performance indicator. These models derived from and were extensions of the system of models previously used by DG-REGIO, namely the Cohesion System of HERMIN Models (CSHM) and experience of previous Lithuanian disaggregated modelling exercises. The specific modelling presumptions are the same for all three Baltic States. The impacts modelled differ between the three Baltic States because of the different values in respect of the CP expenditures and the different parameters and elasticities among economic variables, as revealed by the econometric analysis of the national accounts data.

Another sophisticated exercise applied was the assessment of CP contribution to attaining the target values of OP result indicators. The CP contribution was assessed as being low, medium or high depending on the extent to which the output indicators' values achieved would contribute to the attainment of the target values of the result indicators.

CP impact at macroeconomic and production branch levels

The most general impact measure for the CP is the "cumulative multiplier". This accumulates the impacts on GDP by adding the annual percentage increases in GDP, and divides this running total by the accumulated shares of the CP expenditure expressed as a percentage of GDP. **Estonia** demonstrates the highest rate of return on the CP investments (cumulative multiplier reaches 2.51 by 2030); **Latvia** has a slightly lower rate of return (2.27); and **Lithuania** is an intermediate case (2.33). These numbers indicate rather high return of the CP investments and only modest differences among the cumulative multipliers for the three **Baltic States**. 1 EUR of the CP investment is expected to deliver 2.51 EUR of GDP in **Estonia**, 2.33 EUR in **Lithuania** and 2.27 EUR in **Latvia** within the 2014-2030. These numbers amount to the rates of return of 151 percent, 133 percent and 127 percent over 16 years in **Estonia**, **Lithuania** and **Latvia**, respectively (on average 9.4 percent per year in **Estonia**, 8.3 percent per year in **Lithuania** and 7.9 percent per year in **Latvia**).

In terms of the impact on the level of GDP, the pattern of response to the CP investments is broadly similar for all three countries. Due to the investments, the level of GDP in all three **Baltic States** will be significantly increased - in 2014-2023 it will be higher on average by around 2.5 percent annually.

CP impact on total employment is expected to be the highest in **Lithuania** and **Latvia** - due to the investments employment in these two Baltic States will be on average higher by around 1.8 percent annually in 2014-2023. The average annual impact in **Estonia** is expected to be 1.4 percent. The impact on employment in the **Baltic States** is expected to be lower than that on GDP, since the CP investments boost labour productivity, enabling GDP growth with smaller growth of employment rate.

The size of the impact the CP investments have on the production branches was examined. The impact on the building & construction branch is immediately apparent for all three **Baltic States** and reflects the high share of investment in physical infrastructure. The boost to the market services sector is also apparent, even if it is smaller than that for building & construction. Due to the CP investments the level of market services GDP in all three **Baltic States** will be on average higher by around 3.2 percent annually in 2014-2023. However, these impacts diminish after the OPs terminate.

Although the impacts on the manufacturing sector are modest, they are the most relevant to longer-term growth and development. During the OPs implementation there is a small amount of 'crowding out' in terms of manufacturing, since this sector/branch is the most exposed to international competitiveness. Due to the investments foreseen, the level of manufacturing GDP in all three **Baltic States** will be on average higher by around 0.4 percent annually in 2014-2023. Longer term, the CP impact is expected to be highest in **Lithuania** and **Latvia** - due to the investments, manufacturing GDP will be on average higher by around 1.4 percent annually in 2024-2030. The average annual impact in **Estonia** is expected to be 1.1 percent.

CP contribution to attaining target values of OP result indicators

In all three **Baltic States** a high and medium to high level of contribution in terms of CP investments to the attainment of target values of OPs result indicators is expected in the Transport, Adaptation to climate change, Environment and resource efficiency, Health, Social inclusion, Education, skills and lifelong learning, Institutional capacity of public authorities and administration sectors/policy areas. In quantitative terms, the CP investments are expected to be responsible for more than 50 percent of the targeted changes in the values of the result indicators.

There were no sectors/policy areas where the expected contribution of the CP investments to the attainment of the objectives was assessed as low, which is a good indication of the CP interventions' importance. The contribution is expected to be at its lowest in relation to the SMEs and RTDI sectors/policy areas in all three **Baltic States**. These sectors/policy areas are dominated by private stakeholders and thus that public investments alone are unlikely to promote significant change. Another reason is the ambitiousness of the targets, particularly in the RTDI sector/policy area.

The share of EU financial allocations in total public expenditure varies among the sectors/policy area. However even in sectors/policy areas where the share is tiny, CP investments facilitate progress due to the focus on new developments while large amounts of national resources are necessary for ongoing expenditure (e.g. maintenance of current facilities).

CP impact in the RTDI sector/policy area

The level of attainment in the research, technology, development and innovation sector/policy area has differed across the Baltic States. In terms of position in the Innovation Union Scoreboard ranking as well as in relation to R&D expenditure, **Estonia** outperformed its Baltic neighbours.

The **Baltic States** prioritised the RTDI sector/policy area (1st largest in Estonia, 4th in Lithuania and Latvia). They aim to ensure that their research is of a high level and competitive globally, that R&D functions in the interests of their society and economy making the later more knowledge-intensive and thus amplifying their competitiveness, enabling innovation and ensuring the ongoing sustainable development of society.

The CP impact on gross domestic expenditure on R&D (GERD) is expected to be highest in **Estonia** - due to the investments planned the GERD as a percentage of GDP will on average be higher by 4.6 percent annually in 2014-2023. The average annual impact in **Lithuania** and **Latvia** is expected to be around 1.5 percent and 2.1 percent respectively. GERD as a percentage of GDP in 2023 is forecast to be highest in **Estonia** and to make up around 2.4 (national target – 3%), in **Lithuania** – 1.2 (national target – 1.9%) and **Latvia** – 0.8 percentage of GDP (national target – 1.5%). This suggests that it is likely that none of the three

Baltic States will have attained their Europe 2020 national targets in 2023. This apparent 'failure' should however be viewed in relation to the ambitiousness of the national targets set.

CP impact on other OP objectives was assessed as low-medium and medium. There are two main explanations for lower impact in the case of this sector/policy area. Firstly, the planning of the values of the result indicators was very ambitious rendering it difficult to attain these values by the CP investments alone. Secondly, the attainment of planned results in RTDI sector/policy area is highly affected by external factors such as business sector's willingness to invest in RTDI activities. The OPs' activities, on the other hand, are mainly targeted at strengthening the supply side of the RTDI system, and the scope of the activities targeted at strengthening the demand side of the RTDI system is not sufficient to attract enough private investments.

CP impact in the ICT sector/policy area

In 2007-2015 all three **Baltic States** were progressing towards their goals. The share of households with a broadband internet connection type in the Baltic States has grown by 22-37 percentage points while the availability of broadband internet in sparsely populated areas increased even more sizeably – by 37-47 percentage points. A constant increase in the share of individuals using the internet for interaction with public authorities was also observed. **Estonia** leads the way among the Baltic States in terms of the abovementioned indicators.

Combined EU funding consists of around 490 million EUR. All three **Baltic States** are mainly concerned with increasing accessibility to broadband and high-speed internet as well as to developing electronic public administration services and encouraging the reuse of public sector information. **Latvia** and **Lithuania** put more emphasis on increasing the availability of broadband internet especially in rural areas while **Estonia** is mainly concerned with the speed of the internet, since broadband coverage is already very high.

The impact of CP investments on increasing accessibility to broadband internet in **Lithuania** and **Latvia** is expected to be high. Similarly, the investments should significantly impact the increase in the data transfer speed in **Estonia**. The CP contribution to the policy objectives of the **Baltic States** measured by the number of users in most cases was assessed as medium considering the outputs foreseen and the dependence on the willingness to use various *e*-services.

CP impact in the SMEs sector/policy area

The pace of development in respect of SME productivity or their export share in GDP terms in the **Baltic States** has over the last decade surpassed the EU average.

Combined funding of the **Baltic States** in this sector/policy area amounts to more than 1.1 billion EUR of EU funds. CP investments are expected to contribute to the main EU and national policy objectives, namely, higher labour productivity, the growth of exports, increased entrepreneurship and better access to finance.

Although the changes are highly dependent on private initiative the CP will positively add to the development of these economies. Due to the CP investments average annual labour productivity during the OPs implementation period is expected to be higher by 1.1 percent in **Estonia**, 0.7 in **Lithuania** and 1.1 in **Latvia**.

If the targets of the OPs were achieved the real labour productivity per hour worked in 2023 would be about 65 percent of the EU-28 average in **Estonia**, 49 percent in **Lithuania** and 40 percent in **Latvia**. Macroeconomic modelling indicates that the targeted growth rates are quite realistic for **Lithuania** and **Latvia**; however the **Estonian** scenario seems too optimistic (a 55 percent attainment of the EU-28 average is a more realistic target). So despite the significant improvements expected over the next decade (8-12 percent points from the baseline in 2013) in the productivity of the SMEs in the **Baltic States**, they will nevertheless continue to lag significantly behind average EU productivity levels.

The nature of the sector/policy area, the scope of the interventions and external factors outside the OPs were the main factors limiting the extent of the CP contribution to a low-medium level in the **Baltic States**. The sector/policy area is dominated by private stakeholders and, thus, public investments alone are unlikely to promote significant change. The amount of private investment, technological progress, and the regulation of the business environment are only a few of the main external factors to the OPs which will significantly affect productivity and other OP targets.

CP impact in the Energy sector/policy area

All three **Baltic States** have already surpassed the Europe 2020 target to reduce greenhouse gas emissions by 20 percent compared to 1990 levels. However, this is because in 1990 they were still using an energy inefficient infrastructure of Soviet design. Despite a good level of achievement to date, the **Baltic States** are however still consuming much more energy to produce a unit of GDP than the EU average.

Combined EU funding for the three **Baltic States** amounts to almost 1.7 billion EUR of which more than 1 billion EUR is invested in **Lithuania**. The planned interventions in all three **Baltic States** are expected to contribute to reducing energy consumption (intensity), a higher share of renewable energy, lower GHG emissions (and lower emissions intensity).

As renewable energy and GHG emissions related targets in the **Baltic States** are in principle already or almost achieved, the most important expectation is that CP investments will facilitate the recalibration of the Baltic States' energy intensity levels towards the EU average. In 2014-2023 in **Estonia** and **Latvia** due to the investments the level of total final energy intensity will be on average reduced by around 1.5 percent. The annual CP impact in **Lithuania** is a 1.1 percent reduction. The lower impact here relates to lower energy intensity in Lithuania already attained. It is estimated that final energy intensity in 2023 should remain lowest in **Lithuania** (129 kgoe/ EUR 1000). In **Estonia** it is expected to be 136 kgoe and in **Latvia** 165 kgoe. These levels will still remain high compared to the EU average (80.6 kgoe/ EUR 1000 in 2014).

In addition to the abovementioned impacts, the **Lithuanian** OP is also expected to impact integration into the EU internal energy market (medium-high contribution) and the quality of energy supply (low-medium contribution).

CP impact in the Adaptation to climate change sector/policy area

CP interventions in all three **Baltic States** will contribute to the EU as well as to national goals to reduce environmental risks and improve protections against damage to coastal areas, water and land environment resulting from global warming and climate change. Their CP funded actions contributing to the programming period's overall 20-20-20 climate/GHG goals are, however, mainly located to and operative within the Energy and Transport sectors/policy areas.

Although the CP financial allocations on the Adaptation to climate change sector/policy area constitute one of the minor policy areas in the OPs (combined funding in three **Baltic States** amounts to around 230 million EUR), the investments in the Energy and Transport sectors/policy areas do supplement climate change policies in these countries.

The scope and focus – in the case of **Estonia** almost 50 percent of the investment, in **Latvia** and **Lithuania** in excess of 80 percent – of the investments to reduce climate induced risks and upgrade the level of protection offered to citizens and their economic activities against environmentally-related threats, will probably secure most of the **Baltic States** OPs' result goals within this policy sector. Moreover, with some Latvian exceptions, the assessed contributions of the planned interventions to reduce environmental risks and damages are generally quite high.

The **Baltic States'** ability to reduce environmental threats is heavily dependent on the future development of worldwide GHG-emissions and thus on global warming and its consequences.

CP impact in the Environment and resource efficiency sector/policy area

The **Baltic States'** ability to process and reuse different types of waste was substantially below the average EU-28 standard. With the exception of Latvia, the situation has however improved significantly in recent years. The gap between **Estonia** and **Lithuania** and the EU average measured as a share of recycled waste has shrunk substantially. With the help of ongoing and planned CP interventions, **Latvia** is also on track towards substantially higher rates of waste recycling. On the issue of biodiversity and available habitats for protected species, the situation is however rather more mixed. **Estonia** and **Latvia** score even higher than the EU average on the "sufficiency index", while **Lithuania**'s performance is very poor.

Combined EU funding in the **Baltic States'** OPs in this area amounts to about 1.5 billion EUR. CP interventions are mainly related to EU and national goals focused on protecting and enhancing natural capital and on safeguarding people and habitats from environmentally-related pressures and health risks.

Heavy concentration of the interventions on water protection, waste management and the protection of biologically sensitive habitats will undoubtedly promote an improvement in the position of the three **Baltic States** over the next few years. Moreover, most of the CP investments targeting the goals of water/land protection, sensitive Baltic habitats and environments were assessed as contributing to a high level to the expected results in terms of positive environmental impacts.

The assessments of the OPs interventions in the **Baltic States** to promote environmentally friendly tourism and to raise public awareness of environmentally important resources are a little more mixed due to their dependence on external actors in the private sector, marketing efforts etc. It is a similar situation in respect of the assessment of **Latvian** ambitions to revitalise depressed urban areas and to expand the reach of the private sector economy into important national and regional centres. Here, low to medium level assessments of the CP contributions are more common, since the degree of success relies heavily on the private sector companies' willingness to invest and expand their operations in the assigned areas.

CP impact in the Transport sector/policy area

Despite recent improvements, a lot still remains to be done. Greenhouse gas emission from transport remains high in **Estonia**. **Lithuania** and **Estonia** are encountering substantial reliance on passenger cars, while **Latvia** performs better than the EU average here. Low road safety however remains a problem in **Lithuania** and **Latvia**.

The **Baltic States** prioritised Transport among the two largest sectors/policy areas of the OPs. Combined funding amounted to more than 2.8 billion EUR of EU funds. Investments here are mainly focused on upgrading roads, railways or other transport infrastructure as well as on the promotion of public transport.

Despite significant reductions in transport-related GHG emissions during 2007-2013, in all three **Baltic States** rapid growth in transport emissions was observed during 2006-2007. However, Europe 2020 national targets provide some space for such growth in emissions levels. The lack of explicit result indicators does not however enable us to identify the expected scope of the CP impact in **Estonia**. Attainment of the OP targets in **Lithuania** would lead to a reduction in emissions from transport by 1.3 percent, and in the case of **Latvia** - to a 2.9 percent reduction. These are sizeable contributions compared to the change observed during 2005-2013 (3% increase in Lithuania, and 9% decrease in Latvia).

Investments will also facilitate use of public transport and affect the related context indicator (the share of passenger cars in total inland passenger-km). In **Estonia,** the attainment of the OP targets would lead to the reduction in the share of passenger cars in total inland passenger-km by around 3 percentage points, which is an ambitious, however, reasonable expectation taking into account the recent trends. In **Lithuania** and **Latvia** the attainment of the OP targets would lead to a quite modest reduction of about 0.10-0.15 and up to 0.1 percentage point respectively.

CP impact in the Employment sector/policy area

Recent positive trends in the labour market resulted in a 76.5 percent employment rate in **Estonia**, 73.4 percent in **Lithuania** and 72.5 percent in **Latvia** in 2015 representing an almost peak historical employment rate.

The **Baltic States** will invest more than 1.2 billion EUR of EU funding supporting the three labour market pillars: opportunities for employers, capacities of the unemployed and vulnerable groups and capabilities of labour market services. During the OP implementation period CP investments should increase employment rates on average by 1.3 percent in **Estonia**, 1.6 percent in **Lithuania** and 1.7 percent in **Latvia** annually. In 2020 the **Baltic States** are forecast to be close to their national employment targets in relation to EU 2020. Economic development fluctuations however continue to put pressure on the attainment of high targets in respect of employment rates.

The positive CP impact suggests that the situation of various target groups (youth, elderly unemployed, etc.,) is expected to improve due to the interventions. These expectations are also supported by the fact that the **Baltic States** envisaged significant investments in the form of active labour market policy measures particularly for these groups.

In **Estonia** significant improvements determined by large financing and the huge target group involved are expected for persons with a designated 'partial working ability'. The contribution to economic growth in designated areas in **Estonia** and **Lithuania** was assessed as low due to the high level of dependency on external factors.

CP impact in Social inclusion sector/policy area

The share of people at risk of poverty or social inclusion in **Estonia** in recent years was close to the EU average, however in terms of this context indicator **Lithuania** and **Latvia** performed worse than the EU average.

All three **Baltic States** aim to ensure quality social services for socially disadvantaged groups, thus increasing participation in the labour market and society. CP investments will help to facilitate transition from institutional care to community-based services as well as introducing more services supporting the employability of disadvantaged groups. Additionally, the **Estonian** OP supports adaptation and integration programmes for immigrants and poorly integrated permanent residents, while **Lithuania** aims to increase the supply of social housing. Combined funding of the **Baltic States** made more than 680 million EUR of EU funds. While this sum amounts to only a tiny fraction in overall national funding terms related to the sector/policy area, the CP investments are the main source of social reform implementation.

CP investments will affect the share of persons at risk of poverty or social exclusion. During the OP implementation period the average annual decrease in the share is expected to be around 0.7 percent in **Estonia**, 1.4 percent in **Lithuania** and 1.3 percent in **Latvia.** In 2023 the share is forecast to be around 24 percent in **Estonia**, 23.4 percent in **Lithuania** and 29 percent in **Latvia**. The forecasts indicate that **Lithuania** and **Latvia** will likely reach their national targets. However further improvement and attainment of the national target in **Estonia** is likely to be challenging due to very low baseline level at 2008.

In terms of OPs objectives and targeted results, CP investments are expected to positively affect social inclusion objectives in all three **Baltic States**. The highest contribution in terms of social inclusion will be generated by better quality social services for disadvantaged people and thus by increased community integration and independent living. The contribution level of CP investments aiming at integration in the labour market will be medium to high; however the long-term effect will depend on the sustainability of generated results.

CP impact in the Health sector/policy area

In terms of standardised death rate and healthy life years the **Baltic States** remain below the EU average. Comparing the Baltic States the situation was mixed: the standardised death rate was better in **Estonia**; while in **Lithuania** healthy life years were longer than in their neighbours.

The **Baltic States** invest around 590 million EUR of EU funding. They aim to improve the quality and availability of healthcare services particularly focusing on remote areas. Although each Baltic State has chosen a slightly different approach the overall CP impact on the healthcare system and particularly in the regions outside the main cities was assessed to be at a medium to high level. Focused investment is expected to have a high impact on alcohol abuse and related harms reduction in **Estonia**. CP investments are expected to contribute to a higher than medium extent to attaining the OP results related to healthy lifestyles in **Lithuania** and **Latvia**.

An increase in the general quality of life including healthcare services impacts on lifespan gradually. In 2023-2030 the standardised death rate indicator is expected to be on average lower by 0.6 percent in **Estonia**, 0.1 percent in **Lithuania** and 0.2 percent in **Latvia** annually due to CP investments. It is estimated that in 2023 the death rate per 100 000 persons might be around 1089 in **Estonia**, 1456 in **Lithuania** and 1460 in **Latvia**, which would mean that they would continue to remain higher than the EU average.

CP investments are expected to positively affect the healthy lifespan of people in all three **Baltic States**. Due to these CP investments the healthy life years of females and males after the OPs completion in 2023 up to 2030 will on average be higher by about 0.04-0.14 percent. The difference between female and male estimated healthy life years in the **Baltic States** in 2023 is forecast to remain sizeable and below the EU average except for females in **Lithuania**.

CP impact in Education, skills and lifelong learning sector/policy area

In terms of the analysed indicators related to early leavers from education, attainment of educational level and the employment level of persons having at least a secondary education, the **Baltic States** with some exceptions were performing better than related EU 2020 national targets and the EU averages. The level of lifelong learning however was sufficient only in **Estonia**.

Combined EU funding of the three **Baltic States** OPs amounted to more than 1.5 billion EUR. All three OPs target the main issues of educational systems, highlighted in their national strategic documents and CSR 2016. The **Estonian** OP however takes a more focused approach to fewer selected issues, while the **Lithuanian** and **Latvian** OPs aim to tackle multiple issues across all educational levels. CP investments in all three **Baltic States** aim to increase the quality of general education, foster lifelong learning and ensure that studies across all educational levels are in line with labour market needs.

The CP investments are expected to improve the employment rate of persons aged 15-64 years with at least an upper secondary level of educational attainment in all three **Baltic States**. On average, the level should annually be increased by 1.1-1.6 percent during the period 2014-2023.

CP investments in the **Baltic States** will positively affect the level of educational attainment. The share of persons aged 20-24 with at least an upper secondary level of educational attainment is expected to be increased by 0.1-0.2 percent on average annually in the period 2014-2023. Up to 2023 further growth is expected.

CP interventions will also support the growth of lifelong learning. The CP impact on the level of lifelong is expected to be more significant in **Estonia** (1.7% average annual increase during the period 2014-2023). In **Lithuania** and **Latvia** the impact is expected to be around 0.6 and 0.3 percent respectively.

Additionally, the impact on attaining the objectives of increasing the quality of higher education in terms of renewed infrastructure and efficient management is expected to be high in **Lithuania** while the extent of the CP's contribution to the attainment of the **Latvian** targets to ensure the quality of higher education is expected to be between medium and high.

CP impact in the Institutional capacity of public authorities and administration sector/policy area

In terms of financial allocations the sector/policy area is among the smallest. Combined funding for the three **Baltic States** amounts to around 278 million EUR. CP investments will significantly affect the institutional capacity of the public authorities and administration. Taking into account the fact that a significant share of central and local government employees are participating in CP supported training, at the end of the programming period, professional competencies and the management of human resources in the public sector will be increased to a medium-high level in all three **Baltic States**.

Substantial improvement in terms of knowledge-based governance is expected in **Estonia** and **Lithuania**. Development of the strategic management, impact assessment of decisions and similar initiatives will increase the quality of public administration from a long-term perspective. A somewhat smaller, though still significant, improvement in the business regulation environment as well as an increase in the transparency and openness of public administration processes (mainly in the public procurement system) in **Lithuania** will be attained. The quality of public services as well as their customer-orientation will also be strengthened in **Estonia** and **Lithuania.**

RÉSUMÉ ANALYTIQUE

Introduction et méthodologie

La présente étude a pour principal but d'évaluer l'impact sectoriel / politique de la politique de cohésion dans les **États baltes** (Estonie, Lituanie, Lettonie) prévu pendant la période de programmation 2014-2020. La contribution de la politique de cohésion au développement des États Baltes et à l'atteinte des principales priorités européennes y est également discutée.

Les investissements de la politique de cohésion à travers trois programmes opérationnels (PO) sont analysés : le Programme Opérationnel 2014 – 2020 des fonds de la politique de cohésion (**Estonie**) ; le Programme Opérationnel 2014 – 2020 des fonds européens pour l'investissement (**Lituanie**) ; le Programme Opérationnel 2014 – 2020 Croissance et Emploi (**Lettonie**). Par l'intermédiaire de ces PO, l'**Estonie**, la **Lituanie** et la **Lettonie** vont recevoir respectivement 3,5 milliards d'euros, 6,7 milliards d'euros, et 4,4 milliards d'euros de financements européens.

L'objet et les fonctions de cette étude ont nécessité une approche complexe qui englobe plusieurs exercices d'analyse. L'étude comprend des analyses détaillées des interventions menées sous chaque PO, spécifiées par objectifs et indicateurs, par dotations financières et par actions devant être soutenues. Les secteurs / domaines politiques étant supposés être affectés par la politique de cohésion ont été examinés, en fonction des objectifs politiques nationaux et européens poursuivis, en considérant également les facteurs extérieurs aux programmes opérationnels, les principales tendances, et les sommes globales allouées. En ce qui concerne la politique de cohésion, ces études d'impact ont impliqué l'utilisation de modèles macroéconomiques et une estimation de la contribution de la politique de cohésion basée sur les liens entre indicateurs, des études de cas ainsi que des opinions d'experts.

Le recours à des indicateurs appelés « indicateurs de contexte » a permis une analyse en profondeur des principales tendances ainsi qu'une analyse de l'impact de la politique de cohésion dans les États Baltes. La sélection de 20 indicateurs, au total, a été sélectionné pour cet exercice car ils sont les plus à même de capturer les principaux objectifs politiques et le développement des secteurs / domaines politiques.

Les modèles macroéconomiques ont, eux, joué un rôle essentiel lors de l'étude d'impact. Trois nouveaux modèles ont été construits pour les besoins de l'évaluation d'impact de la politique de cohésion (HLT16 pour la Lituanie ; HEE16 pour l'Estonie, et HLV16 pour la Lettonie), tandis que des équations ont été développées pour chacun d'entre eux, reliant chaque indicateur de contexte à l'indicateur de performance macroéconomique correspondant. Ces modèles sont inspirés et adaptés du *Cohesion System of HERMIN Models (CSHM),* système de modèles utilisés précédemment par la DG REGIO, et de la désagrégation d'exercices de modélisation expérimentés en Lituanie. Ces modélisations spécifiques sont identiques pour les trois États Baltes. Comme le révèle l'analyse économétrique des données comptables nationales, les impacts modélisés diffèrent entre ces trois États Baltes en raison des valeurs différentes en ce qui concerne les dépenses de la politique de cohésion et les différents paramètres et élasticités parmi les variables économiques.

Un autre exercice sophistiqué appliqué a été l'évaluation de la contribution de la politique de cohésion à l'atteinte des valeurs cibles des indicateurs de résultats du programme. La contribution de la politique de cohésion a été évaluée comme étant faible, moyenne ou élevée en fonction du niveau de contribution de la valeur de l'indicateur de réalisation obtenu dans la réalisation des valeurs cibles des indicateurs de résultats.

Impact de la politique de cohésion au niveau macroéconomique et par secteur de production

La mesure d'impact la plus utilisée est «l'effet multiplicateur cumulé». Les effets sur le PIB sont cumulés en additionnant les augmentations annuelles du PIB en pourcentage, et en divisant ce total en cours d'exécution par les parts cumulées des dépenses de la politique de cohésion, le tout est exprimé en pourcentage du PIB. L'**Estonie** démontre le plus haut taux de rendement sur investissement de la politique de cohésion (l'effet multiplicateur cumulé atteint 2,51 en 2030) ; la **Lettonie** a un taux légèrement inférieur (2,27) ; et la **Lituanie** se situe entre les deux (2,33). Ces chiffres indiquent un retour sur investissement de la politique de cohésion plutôt élevé et des différences modestes parmi les multiplicateurs cumulatifs des trois **États baltes**. 1 euro investi dans le cadre de la politique de cohésion devrait générer 2,51 euros de PIB en

Estonie, 2,33 euros en **Lituanie** et 2,27 euros en **Lettonie** pour la période 2014-2030. Ces chiffres équivalent à des taux de retour sur investissement sur une période de 16 ans de 151 pourcent, 133 pourcent et 127 pourcent respectivement en **Estonie, Lituanie** et **Lettonie** (avec une moyenne annuelle de 9,4 pourcent en **Estonie**, 8,3 pourcent en **Lituanie** et 7,9 pourcent en **Lettonie**).

En termes d'impact sur le niveau du PIB, la réponse aux investissements de la politique de cohésion est globalement similaire pour les trois pays. Grace à ces investissements, le niveau du PIB des trois **États baltes** augmentera de manière significative, de l'ordre de 2,5 pourcent par an en moyenne entre 2014 à 2023.

Le plus fort impact de la politique de cohésion sur l'emploi total est prévu en **Lituanie** et en **Lettonie** - une croissance annuelle d'environ 1,8 pourcent - en raison des investissements pour l'emploi dans ces deux États Baltes. L'impact en **Estonie** devrait, lui, avoisiner les 1,4 pourcent de croissance annuelle en moyenne. L'impact sur l'emploi dans les États baltes devrait d'être plus bas que celui sur le PIB dans la mesure où les investissements de la politique de cohésion stimulent la productivité de la main-d'œuvre, déterminant ainsi une croissance du PIB compatible avec un taux de croissance de l'emploi plus faible.

L'importance de l'impact des investissements de la politique de cohésion sur les secteurs productifs a également été examinée. L'impact sur le secteur du BTP (Bâtiments et travaux publics) est évident pour les trois **États baltes**, il reflète le poids des investissements dans les infrastructures. La stimulation du secteur des services marchands est aussi visible, bien que moindre que celle du BTP. Les investissements de la politique de cohésion vont entraîner une hausse annuelle moyenne d'environ 3,2 pourcent du PIB des services marchands, dans les trois **États baltes**, entre 2014 et 2023. Ces impacts diminuent néanmoins après la clôture des PO.

Bien que les impacts sur le secteur manufacturier soient modestes, ils participent de manière significative à la croissance et au développement sur le long terme. Pendant la période de mise en œuvre des PO, un léger « effet d'éviction » peut être observé, en raison de la forte exposition de ce secteur à la concurrence internationale. Les investissements prévus vont néanmoins permettre une hausse annuelle du PIB manufacturier de 0,4 pourcent dans les trois **États baltes** entre 2014 et 2023. A plus long terme, l'impact de la politique de cohésion devrait être plus conséquent en **Lituanie** et en **Lettonie** avec une croissance annuelle d'environ 1,4 pourcent en raison des investissements dans ces deux États entre 2024 et 2030. L'impact en **Estonie** devrait, lui, avoisiner les 1,1 pourcent de croissance annuelle moyenne.

Contribution de la politique de cohésion à l'atteinte des valeurs cible des indicateurs de résultat du PO

Dans les trois **États baltes**, une contribution moyennement haute à haute, des investissement de la politique de cohésion pour atteindre les valeurs cibles des indicateurs de résultats des PO, est prévue : le transport, l'adaptation au changement climatique, l'environnement et l'utilisation plus efficace des ressources, la santé, l'inclusion sociale, l'éducation, le développement des compétences et l'apprentissage tout au long de la vie, la capacité institutionnelle des pouvoirs publics et l'administration. De manière quantitative, il est prévu que les investissements réalisés dans le cadre de la politique de cohésion soient à plus de 50 pourcent directement responsables des changements de valeurs des indicateurs de résultat.

La contribution prévue des investissements à la réalisation des objectifs n'a été évaluée comme faible pour aucun secteur/domaine politique, ce qui atteste de l'importance des interventions de la politique de cohésion. La contribution la plus faible concerne les secteurs / domaines politiques PME et Recherche, développement technologique et innovation (RDTI) dans les trois **États baltes**. Ces secteurs / domaines politiques sont dominées par les acteurs privés. Par conséquent, les investissements publics seuls sont peu susceptibles de promouvoir un changement significatif. Une autre raison est l'ambition des objectifs, en particulier dans le secteur/ domaine politique des RDTI.

La part des financements européens dans les dépenses publiques totales varie selon le secteur / domaine politique. Cependant, même dans les secteurs / domaines politiques où la part est infime, les investissements de la politique de cohésion contribuent à la croissance en raison de l'intérêt porté aux nouveaux développements alors qu'une large part des ressources nationales est accaparée par les dépenses courantes (par exemple de l'entretien des installations actuelles).

Impact de la politique de cohésion dans le secteur / domaine politique des RDTI

En matière de recherche, développement technologique et innovation, l'impact a varié selon l'État. D'après sa position au classement du Tableau de bord européen de l'innovation, ainsi que par rapport aux dépenses de R&D, l'**Estonie** surpasse ses voisins Baltes.

Les **États baltes** ont donné la priorité au secteur / domaine politique des RDTI (1er en Estonie, 4ème en Lituanie et en Lettonie). Ils aspirent à une recherche concurrentielle et d'un niveau élevé sur l'échelle mondiale, que la R&D fonctionne dans l'intérêt de leur société et de d'une économie à forte intensité de savoir, amplifiant ainsi leur compétitivité, favorisant l'innovation et assurant un développement continu et durable de la société.

L'impact de la politique de cohésion sur la dépense brute pour la recherche et le développement (DBR-D) devrait être le plus élevé en **Estonie** - en raison des investissements prévus, la DBR-D en pourcentage du PIB sera en moyenne supérieure de 4,6 pourcent par an entre 2014 et 2023. L'impact annuel moyen en **Lituanie** et en **Lettonie** devrait se situer respectivement autour de 1,5 pourcent et 2,1 pourcent. En 2023, la DBR-D en pourcentage du PIB devrait être la plus élevé en **Estonie** et atteindre environ 2,4, sur un objectif national de 3 pourcent. Elle atteindra 1,2 pourcent en **Lituanie** sur un objectif national de 1,9 et 0,8 pourcent en **Lettonie** sur un objectif national de 1,5 pourcent. Il est probable qu'aucun des trois **États baltes** n'aura atteint les objectifs nationaux se rapportant à la stratégie « Europe 2020 » en 2023. Cet « échec » apparent doit cependant être considéré à l'aune de l'ambition des objectifs nationaux fixés.

L'impact de la politique de cohésion sur d'autres objectifs du PO a été évalué de moyennement faible à moyen. Il y a deux raisons principales expliquant l'impact plus faible de ce secteur/domaine politique. Tout d'abord, les valeurs des indicateurs de résultats ont été fixées à un niveau très ambitieux ce qui rend difficile d'atteindre ces valeurs grâce aux seuls investissements de la politique de cohésion. En second lieu, la réalisation des résultats envisagés dans le secteur de la RDTI est largement affectée par des facteurs externes comme la disponibilité du secteur privé à investir. D'autre part, les activités du PO principalement destinés au renforcement du côté de l'offre du système RDTI et le champ d'activités destiné au renforcement de la demande du système RDTI n'est pas suffisant pour attirer assez d'investissements privés.

Impact de la politique de cohésion dans le secteur / domaine politique des TIC

Entre 2007 et 2015, les trois **États baltes** ont progressé dans l'atteinte de leurs objectifs. La part des ménages dotés d'une connexion internet à haut débit a augmenté de 22 à 37 points de pourcentage, tandis que la disponibilité d'internet à haut débit dans les régions faiblement peuplées a augmenté de manière encore plus significative, entre 37 et 47 points de pourcentage. Une augmentation constante de la part des individus utilisant internet pour interagir avec les autorités publiques a également été observée. L'**Estonie** ouvre la voie parmi les États Baltes en ce qui concerne ces indicateurs mentionnés ci-dessus.

Pris ensemble, les financements européens s'élèvent à 490 millions d'euros. Il s'agit principalement pour les trois **États baltes** d'améliorer l'accessibilité aux réseaux à large bande et à l'internet haut débit tout en développant également les services administratifs par voie électronique et en encourageant la réutilisation des informations du secteur public. La **Lettonie** et la **Lituanie** ont favorisé une plus grande couverture de l'internet à large bande, en particulier dans les zones rurales, tandis que l'**Estonie** est principalement concernée par le débit internet, puisque la couverture à large bande y est déjà très élevée.

L'impact des investissements de la politique de cohésion sur l'augmentation de l'accès à l'internet haut débit en **Lituanie** et en **Lettonie** devrait être important. De même, les investissements devraient avoir un impact significatif sur l'augmentation de la vitesse de transfert de données en **Estonie**. La contribution de la politique de cohésion aux objectifs politiques des **États baltes**, généralement mesurée en nombre d'utilisateurs, a été évaluée comme moyenne, compte tenu des réalisations prévues et de la sujétion à volonté d'utiliser ou non divers services électroniques.

Impact de la politique de cohésion dans le secteur / domaine politique des PME

Le rythme de développement des PME dans les **États baltes,** en termes de productivité ou de part des exportations dans le PIB, a dépassé la moyenne de l'UE au cours de la dernière décennie.

Pris ensemble, les financements européens reçus par les **États baltes** dans ce secteur/domaine politique s'élèvent à plus d'1,1 milliard d'euros. Les investissements de la politique de cohésion devraient contribuer aux principaux objectifs européens et nationaux, que sont l'augmentation de la productivité du travail, la croissance des exportations, l'augmentation de l'esprit d'entreprise et un meilleur accès au financement.

Bien que les changements soient très dépendants des acteurs privés, la politique de cohésion aura un effet additionnel positif sur le développement de ces économies. En raison des investissements réalisés dans le cadre de la politique de cohésion, la productivité moyenne annuelle a progressé au cours de la période de mise en œuvre des programmes opérationnels de 1,1 pourcent en **Estonie** et en **Lettonie** et de 0,7 pourcent en **Lituanie**. Si les cibles des PO sont atteintes, en 2023, la productivité par heure de travail représentera 65 pourcent de la moyenne européenne (UE des 28) en **Estonie**, 49 pourcent en **Lituanie** et 40 pourcent en **Lettonie**. La modélisation macroéconomique indique que les valeurs cibles sont quasiment réalistes pour la **Lituanie** et la **Lettonie** ; le scénario de l'**Estonie** semble, néanmoins trop optimiste (55 pourcent de la moyenne européenne à 28 semblerait plus réaliste). Ainsi, bien que des améliorations significatives soient attendues pour la prochaine décennie - augmentation de 8 à 12 points de pourcentage par rapport à la valeur de 2013 - concernant la productivité des PME dans les **États baltes**, le retard accusé par rapport aux niveaux européens moyens de productivité ne sera pas comblé.

Le type de secteur/domaine stratégique analysé, le champ d'interventions et les facteurs externes aux POs sont les trois principaux éléments restreignant l'impact – fixé à un niveau bas à moyen - de la contribution de la politique de cohésion dans les **États baltes**. Le secteur/domaine stratégique est caractérisé par la forte présence des parties prenantes privées, ainsi les investissements publics seuls ne peuvent vraisemblablement pas promouvoir de changements significatifs. Le montant de l'investissement privé, le progrès technologique, et la régulation de l'environnement des entreprises sont quelques-uns des principaux facteurs extérieurs aux PO qui affecteront considérablement la productivité et d'autres cibles des programmes opérationnels.

Impact de la politique de cohésion dans le secteur / domaine politique de l'énergie

Les trois **États baltes** ont déjà dépassé l'objectif de réduction des émissions de gaz à effet de serre de 20 pourcent par rapport à 1990 inscrit dans la stratégie Europe 2020. Toutefois, les infrastructures de conception soviétique utilisées en 1990 étaient particulièrement énergivores. Malgré un niveau de réalisation correct à ce jour, les **États baltes** consomment encore beaucoup plus d'énergie pour produire une unité de PIB que la moyenne européenne.

Pris ensemble, les financements européens reçus par les **États baltes** s'élèvent à 1,7 milliard d'euros, dont plus d'1 milliard est investi en **Lituanie**. Les interventions prévues dans les trois **États baltes** devraient contribuer à la réduction de la consommation d'énergie (intensité), à une plus grande part d'énergie renouvelable ainsi qu'à la réduction des émissions de GES (moindre intensité des émissions).

Comme les cibles concernant les énergies renouvelables et les émissions de GES dans les **États baltes** sont en principe déjà ou presque atteintes, il est principalement attendus des investissements de la politique de cohésion qu'ils facilitent la transition des niveaux d'intensité énergétique des États Baltes vers la moyenne de l'UE. Entre 2014 et 2023, suite aux investissements réalisés en **Estonie** et en **Lettonie,** l'intensité énergétique totale diminuera en moyenne d'environ 1,5 pourcent. En **Lituanie** une réduction de 1,1 pourcent est envisagée, ce pays ayant déjà atteint une faible intensité énergétique. On estime que l'intensité énergétique finale en 2023 devrait rester basse en **Lituanie** (129 kgep / 1000 euros). En **Estonie**, il devrait être de 136 kgep et en **Lettonie** de 165 kgep. Ces niveaux resteront néanmoins encore élevés par rapport à la moyenne européenne (80,6 kgep / 1000 euros en 2014).

En plus des impacts mentionnés ci-dessus, il est également prévu que le PO **lituanien** ait des effets sur l'intégration dans le marché intérieur de l'énergie (contribution de moyenne à haute) et sur la qualité de l'approvisionnement en énergie (contribution de faible à moyenne).

Impact de la politique de cohésion dans le secteur / domaine politique de l'adaptation au changement climatique

Les interventions de la politique de cohésion dans les trois **États baltes** contribueront aux objectifs nationaux et européens qui visent à réduire les risques environnementaux et à améliorer la protection contre les dommages causés aux zones côtières, à l'eau et à l'environnement terrestre résultant du réchauffement planétaire et des changements climatiques. Les actions financées par la politique de cohésion qui contribuent à l'ensemble des objectifs 20-20-20 fixés pour la période de programmation sont, cependant, principalement situés et opèrent dans les secteurs / domaines politiques de l'énergie et des transports.

Bien que les fonds de la politique de cohésion concernant le secteur / domaine politique de l'adaptation au changement climatique constituent l'un des domaines d'actions mineures dans les PO (pris ensemble, les financements dans les trois **États baltes** s'élèvent à environ 230 millions d'euros), les investissements dans les secteurs / domaines politiques de l'énergie et des transports complètent de manière évidente les politiques sur le changement climatique dans ces pays.

La portée et la concentration des investissements - dans le cas de l'**Estonie** à près de 50 pourcent de l'investissement, en **Lettonie** et en **Lituanie** à plus de 80 pourcent – visant à réduire les risques climatiques et à améliorer le niveau de protection offert aux citoyens et à leurs activités économiques contres d'éventuelles menaces environnementales va certainement permettre de sécuriser la plupart des objectifs fixés par les programmes opérationnels des **États baltes**. En outre, à quelques exceptions lettonnes près, les contributions des interventions prévues pour réduire les risques environnementaux et les dommages causés sont généralement assez élevés.

La capacité des **États baltes** à réduire les menaces environnementales est fortement tributaire de l'évolution des émissions globales de gaz à effet de serre, et donc du réchauffement climatique et ses conséquences.

Impact de la politique de cohésion dans le secteur / domaine politique de l'environnement et de l'efficacité énergétique

La capacité des **États baltes** à traiter et réutiliser les différents types de déchets était nettement inférieure à la norme moyenne EU-28. À l'exception de la Lettonie, la situation s'est cependant considérablement améliorée au cours des dernières années. L'écart entre l'**Estonie** et la **Lituanie** et la moyenne de l'UE a diminué sensiblement si l'on considère la part des déchets recyclés. Les interventions de la politique de cohésion en cours et prévues devraient permettre à la **Lettonie** d'atteindre des taux sensiblement plus élevés de recyclage des déchets. Sur la question de la biodiversité et des habitats disponibles pour les espèces protégées, la situation est cependant un peu plus mitigée. L'**Estonie** et la **Lettonie** font encore mieux que la moyenne européenne sur « l'indice de suffisance », tandis que la **Lituanie** est très loin derrière.

Pris ensemble, les financements européens inscrits par les **États baltes** dans leurs PO s'élèvent à 1,5 milliard d'euros. Les interventions de la politique de cohésion concernent principalement les objectifs européens et nationaux qui mettent l'accent sur la protection et l'amélioration du capital naturel et sur la protection des personnes et des habitats contre les pressions environnementales et les risques sanitaires.

Une forte concentration des interventions sur la protection de l'eau, la gestion des déchets et la protection des habitats biologiquement sensibles favorisera sans aucun doute une amélioration de la position des trois **États baltes** au cours des prochaines années. En outre, la plupart des investissements de la politique de cohésion ciblant la protection de l'eau / des territoires, des habitats et des environnements sensibles baltes, ils ont été évalués comme contribuant à un niveau élevé aux résultats prévus en termes d'impacts environnementaux positifs.

Les évaluations des interventions des PO dans les **États baltes** pour la promotion d'un tourisme respectueux de l'environnement et la sensibilisation du public à l'importance des ressources environnementales sont un peu plus mitigées car elles dépendent d'acteurs privés extérieurs, d'efforts de marketing, etc. Les conclusions de l'évaluation des ambitions **lettonnes** de revitaliser les zones urbaines défavorisées et d'élargir la portée de l'économie du secteur privé aux centres nationaux et régionaux importants sont similaires. Dorénavant, l'évaluation des contributions de la politique de cohésion indique que les effets sont de faibles à moyens, car le degré de succès dépend largement des entreprises du secteur privé et de de leur volonté à investir et à développer leurs activités dans les zones affectées.

Impact de la politique de cohésion dans le secteur / domaine politique du transport

Malgré de récentes améliorations, beaucoup reste à faire. Les émissions de gaz à effet de serre provoquées par le transport restent élevées en **Estonie**. La **Lituanie** et l'**Estonie** se heurtent à une dépendance considérable à la voiture individuelle, tandis que la **Lettonie** fait mieux que la moyenne européenne à ce sujet. La défaillance de la sécurité routière reste cependant un problème en **Lituanie** et en **Lettonie**.

Les **États baltes** ont donné la priorité au transport, et fait de lui l'un des deux secteurs / domaines politiques le plus important du PO. Etats confondus, les financements s'élèvent à plus de 2,8 milliards d'euros de fonds européens. Les investissements y sont principalement concentrés sur la mise à niveau des routes, des chemins de fer ou d'autres infrastructures de transport, ainsi que sur la promotion des transports publics.

Malgré une réduction significative des émissions de gaz à effet de serre liée au transport entre 2007 et 2013, dans les trois **États baltes,** une croissance rapide des émissions liées au transport a été observée entre 2006 et 2007. Cependant, les objectifs nationaux adaptés de la stratégie Europe 2020 admettent une telle croissance. L'absence d'indicateurs de résultats explicites ne permet cependant pas d'identifier la portée prévue de l'impact de la politique de cohésion en **Estonie**. La réalisation des objectifs du PO en **Lituanie** conduirait à une réduction des émissions liées aux transports de 1,3 pourcent, et dans le cas de la **Lettonie**, à une réduction de 2,9 pourcent. Ce sont des contributions importantes par rapport à l'évolution observée entre 2005 et 2013 (augmentation de 3% en **Lituanie**, et 9% de baisse en **Lettonie**).

Les investissements faciliteront également l'utilisation des transports en commun et affecteront l'indicateur de contexte (part des voitures individuelles dans le transport intérieur total de passagers, en passagers-km). En **Estonie**, la réalisation des objectifs du PO conduirait à une réduction de la part des passagers par voitures individuelles (mesurée en passagers-km) d'environ 3 points de pourcentage, ce qui est une attente ambitieuse mais raisonnable considérant les tendances récentes. En **Lituanie** et en **Lettonie**, la réalisation des objectifs du PO conduirait à une réduction assez modeste d'environ 0,10-0,15 et jusqu'à 0,1 point de pourcentage respectivement.

Impact de la politique de cohésion dans le secteur / domaine politique de l'emploi

L'amélioration récente du marché du travail donne lieu à un taux d'emploi de 76,5 pourcent en **Estonie**, de 73,4 pourcent en **Lituanie** et 72,5 pourcent en **Lettonie** en 2015, soit un taux d'emploi quasiment historique.

Les **États baltes** vont investir plus de 1,2 milliard d'euros de financements européens pour soutenir les trois piliers du marché du travail que sont la création d'occasions pour les employeurs, la formation des personnes sans emploi et des groupes vulnérables, ainsi que la capacité du service public de l'emploi. Au cours de la période de mise en œuvre des PO, les investissements de la politique de cohésion devraient augmenter le taux d'emploi d'en moyenne 1,3 pourcent en **Estonie**, 1,6 pourcent en **Lituanie** et 1,7 pourcent en **Lettonie** chaque année. En 2020, il est prévu que les **États baltes** atteignent leurs cibles nationales de l'emploi en lien avec la Stratégie Europe 2020. Les aléas du développement économique continuent cependant de peser sur la réalisation d'objectifs élevés concernant les taux d'emploi.

L'impact positif de la politique de cohésion suggère que la situation des différents groupes cibles (jeunes, chômeurs âgés, etc.,) devrait s'améliorer suite aux interventions financées. Ces attentes sont renforcées par le fait que les **États baltes** envisagent des investissements qui prennent la forme de mesures de politique active du marché du travail, en particulier pour ces groupes.

En **Estonie**, des améliorations significatives sont attendues, conséquence de financements et d'un groupe cible conséquents impliqués pour les personnes en mesure de travailler partiellement. La contribution à la croissance économique dans des zones définies en **Estonie** et en **Lituanie** a été évaluée comme faible en raison du niveau élevé de dépendance à l'égard de facteurs extérieurs.

Impact de la politique de cohésion dans le secteur / domaine politique de l'inclusion sociale

La part des personnes menacées de pauvreté ou d'exclusion sociale en **Estonie** au cours des dernières années était proche de la moyenne européenne, tandis que la **Lituanie** et la **Lettonie** ont un taux supérieur à la moyenne européenne au regard de cet indicateur de contexte.

Les trois **États baltes** aspirent tous à assurer des services sociaux de qualité aux groupes socialement défavorisés, augmentant ainsi la participation au marché du travail et à la vie en société. Les

investissements de la politique de cohésion contribueront à faciliter la transition de soins en établissement à des services de proximité, tout en apportant plus de services de soutien à l'employabilité des groupes défavorisés. En outre, le PO de l'**Estonie** soutient des programmes d'adaptation et d'intégration pour les immigrants et les résidents permanents mal intégrés, tandis que la **Lituanie** vise à accroître l'offre de logements sociaux. Combinés, les financements des **États baltes** s'élèvent à plus de 680 millions d'euros de fonds européens. Bien que cette somme équivaut à seulement une fraction minuscule des financements nationaux globaux attribués à ce secteur / domaine politique, les investissements de la politique de cohésion sont la principale source de mise en œuvre de la réforme sociale.

Les investissements de la politique de cohésion auront une incidence sur la part des personnes menacées de pauvreté ou d'exclusion sociale. Au cours de la période de mise en œuvre des PO, la diminution annuelle moyenne de ce taux devrait être de l'ordre de 0,7 pourcent en **Estonie**, de 1,4 pourcent en **Lituanie** et 1,3 pourcent en **Lettonie**. En 2023, cette part devrait être de l'ordre de 24 pourcent en **Estonie**, 23,4 pourcent en **Lituanie** et 29 pourcent en **Lettonie**. Les prévisions indiquent que la **Lituanie** et la **Lettonie** vont probablement atteindre leurs objectifs nationaux. Cependant, une nouvelle amélioration, nécessaire à l'atteinte de l'objectif national en **Estonie,** semble difficile en raison d'un niveau de référence déjà très faible en 2008.

En ce qui concerne les objectifs et résultats visés par le PO, les investissements de la politique de cohésion devraient avoir une incidence positive sur les objectifs d'inclusion sociale dans les trois **États baltes**. La contribution la plus élevée en termes d'inclusion sociale sera générée par une qualité accrue des services sociaux de meilleure qualité pour les personnes défavorisées, et donc par leur meilleure intégration au sein de la société et davantage d'autonomie. Le niveau de contribution des investissements de la politique de cohésion qui visent à l'intégration sur le marché du travail sera moyen à élevé. Cependant l'effet à long terme dépendra de la durabilité des résultats générés.

Impact de la politique de cohésion dans le secteur / domaine politique de la santé

En termes de taux de mortalité standardisé et d'années de vie en bonne santé, les **États baltes** restent en dessous de la moyenne de l'UE. En comparant les **États baltes**, la situation était mitigée : le taux de mortalité standardisé était meilleur en **Estonie**, tandis qu'en **Lituanie** les années de vie en bonne santé sont plus longues que chez leurs voisins.

Les **États baltes** ont investi environ 590 millions d'euros de financements européens. Ils visent à améliorer la qualité et la disponibilité des services de santé en se concentrant particulièrement sur les régions éloignées. Bien que chaque État balte ait choisi une approche légèrement différente, l'impact global de la politique de cohésion sur le système de santé, en particulier dans les régions en dehors des grandes villes, a été jugé d'un niveau moyen à élevé. En **Estonie,** des investissements ciblés devraient avoir un impact élevé sur l'abus d'alcool et la réduction de ses méfaits associés. Les investissements de la politique de cohésion devraient contribuer à atteindre les résultats visés dans le PO concernant un mode de vie sain en **Lituanie** et en **Lettonie** d'un niveau moyen à élevé.

L'augmentation générale de la qualité de vie, y compris des services de santé, a une incidence positive sur l'allongement progressif de la durée de vie. Entre 2023 et 2030, le taux de mortalité standardisé devrait être chaque année en moyenne plus faible de 0,6 pourcent en **Estonie**, de 0,1 pourcent en **Lituanie** et de 0,2 pourcent en **Lettonie** en raison des investissements permis par la politique de cohésion. On estime qu'en 2023 le taux de mortalité pour 100 000 personnes pourrait être autour de 1 089 en **Estonie**, 1 456 en **Lituanie** et en **Lettonie** 1460. Il continuerait donc néanmoins de rester supérieur à la moyenne de l'UE.

Les investissements de la politique de cohésion devraient avoir une incidence positive sur la durée de vie en bonne santé des personnes dans les trois **États baltes**. En raison de ces investissements, les années de vie en bonne santé des femmes et des hommes après la fin des PO en 2023, et jusqu'en 2030, sera en moyenne supérieure d'environ 0,04 à 0,14 pourcent. La différence entre les années de vie estimées en bonne santé des femmes et des hommes dans les **États baltes** en 2023 devrait rester importante et en dessous de la moyenne européenne, sauf pour les femmes en **Lituanie**.

Impact de la politique de cohésion dans le secteur / domaine de l'éducation, du développement des compétences et de l'apprentissage tout au long de la vie

En ce qui concerne les indicateurs analysés liés aux jeunes en décrochage scolaire, le niveau d'instruction atteint et le taux d'emploi de personnes ayant au moins une éducation secondaire, les **États Baltes**, à quelques exceptions près, ont des résultats supérieurs aux moyennes européennes et aux objectifs nationaux fixés par la stratégie Europe 2020. Le niveau de la formation continue était cependant seulement suffisant en **Estonie**.

Pris ensemble, les financements européens des PO des trois **États baltes** atteignent plus de 1,5 milliard d'euros. Les trois PO ciblent les principaux enjeux auxquels font face les systèmes éducatifs - mis en évidence dans leurs documents stratégiques nationaux et dans les recommandations de 2016 (*Country Specific Recommendation*). L'OP **estonien** adopte cependant une approche plus ciblée, sélectionnant moins de problème, tandis que les PO **lituanien** et **letton** visent à aborder plusieurs questions, à tous niveaux d'enseignement. Les investissements de la politique de cohésion dans les trois **États baltes** visent à accroître la qualité de l'enseignement général, favoriser l'éducation et la formation tout au long de la vie, et veiller à ce que des études à tous niveaux d'enseignement correspondent aux besoins du marché du travail.

Les investissements de la politique de cohésion devraient permettre dans les trois **États baltes** d'améliorer le taux d'emploi des personnes âgées de 15 à 64 ans ayant au moins atteint un niveau secondaire supérieur de scolarité. En moyenne, ce niveau doit être augmenté par an de 1,1 à 1,6 pourcent entre 2014 et 2023.

Les investissements de la politique de cohésion dans les trois **États baltes** devraient avoir une incidence positive sur le niveau de scolarité. La part des personnes âgées de 20 à 24 ans avec au moins un niveau secondaire supérieur de scolarité devrait augmenter de 0,1 à 0,2 pourcent en moyenne par an entre 2014 et 2023. La croissance est attendue jusqu'en 2023.

Les interventions de la politique de cohésion concerneront également le soutien à la croissance de l'éducation et la formation tout au long de la vie. L'impact de la politique de cohésion sur le niveau de vie devrait être plus important en **Estonie** (augmentation annuelle moyenne de 1,7% entre 2014 et 2023). En **Lituanie** et en **Lettonie**, l'impact devrait être respectivement de l'ordre de 0,6 et de 0,3 pourcent.

En outre, l'impact sur la réalisation des objectifs concernant une meilleure qualité de l'enseignement supérieur en termes de rénovation d'infrastructures et de gestion efficace devrait être élevée en **Lituanie** tandis que la contribution de la politique de cohésion à la réalisation des objectifs de la **Lettonie** pour un l'enseignement supérieur de qualité devrait être entre moyen et élevé.

Impact de la politique de cohésion dans le secteur / domaine politique de la capacité institutionnelle des pouvoirs publics et l'administration

En termes d'allocations financières, le secteur / domaine politique est parmi les moins dotés. Les financements combinés pour les trois **États baltes** représentent environ 278 millions d'euros. Les investissements de la politique de cohésion auront une incidence significative sur la capacité institutionnelle des pouvoirs publics et de l'administration. Tenant compte du fait qu'une part importante des employés du gouvernement central et local participe à la formation dispensée en appui à la mise en œuvre de la politique de cohésion, à la fin de la période de programmation, les compétences professionnelles et la gestion des ressources humaines dans le secteur public devrait atteindre un niveau de moyen à élevé dans les trois **États baltes**.

Une amélioration substantielle en termes de gouvernance fondée sur la connaissance est attendue en **Estonie** et en **Lituanie**. Développement de la gestion stratégique, études d'impact sur les décisions, et autres initiatives similaires devraient à long terme améliorer la qualité de l'administration publique. Plus faible, mais toujours significative, l'amélioration de l'environnement réglementaire des entreprises, ainsi que l'augmentation de la transparence et l'ouverture des processus de l'administration publique - principalement dans le système des marchés publics - en **Lituanie** seront atteints. La qualité des services publics, ainsi que l'orientation client seront également renforcées en **Estonie** et en **Lituanie**.

ZUSAMMENFASSUNG

Einleitung und Methodik

Im Rahmen der Studie wird die erwartete Wirkung der Kohäsionspolitik (KP) auf die primären Handlungssektoren und Politikfelder der **Baltischen Staaten** (Estland, Litauen und Lettland) in der Förderperiode 2014-2020 bewertet. Außerdem wird der Beitrag der KP zur Entwicklung der Baltischen Staaten und zu den wichtigsten Prioritäten der Europäischen Union (EU) diskutiert.

Investitionen der KP im Rahmen der folgenden Operationellen Programme (OP) werden analysiert: Operationelles Programm für Struktur- und Kohäsionsfonds 2014-2020 (**Estland**); Operationelles Programm für Investitionen der EU Fonds 2014-2020 (**Litauen**); Operationelles Programm Wachstum und Beschäftigung 2014-2020 (**Lettland**). Im Rahmen dieser OP werden **Lettland, Litauen** und **Lettland** ungefähr 3,5 Milliarden EUR, 6,7 Milliarden EUR und 4,4 Milliarden EUR europäische Mittel erhalten.

Das Ziel und die Aufgabe der Studie erforderten eine komplexe Herangehensweise, welche mehrere analytische Schritte umfasste. So wird unter anderem eine detaillierte Analyse der geplanten Interventionen der OP, welche anhand von Programmzielen und Indikatoren, Mittelzuweisungen und zu fördernden Maßnahmen definiert wurden, durchgeführt. Die durch die KP angesprochenen Handlungssektoren und Politikfelder werden bezüglich der zugrundeliegenden europäischen und nationalen Politikziele, der Einflussfaktoren, die außerhalb des Einflussbereichs der OP liegen, der wichtigsten Trends und der öffentlichen Mittelzuweisungen, untersucht. Ein wesentlicher Teil der Wirkungsanalyse der KP stützt sich dabei auf makroökonomische Modelle und eine Einschätzung des Beitrages der KP auf Grundlage der Verbindungen zwischen Indikatoren sowie auf Fallstudien und Experteneinschätzungen.

Sogenannte „Kontextindikatoren“ wurden als Kernindikatoren für die vertiefende Analyse der primären Entwicklungstrends und zur Bewertung der Wirkung der KP auf die Baltischen Staaten verwendet. Insgesamt wurden 20 Indikatoren ausgewählt, welche die Hauptziele und die Entwicklung in den einzelnen Handlungsfeldern am besten darstellen.

Der wesentliche Teil der Wirkungsanalyse basiert auf makroökonomischen Modellen. Um die Bewertung der Auswirkungen der KP zu analysieren, wurden drei neue Modelle definiert (HLT16 für Litauen; HEE16 für Estland; HLV16 für Lettland) und Gleichungen entwickelt, um die Zusammenhänge zwischen Kontextindikatoren und relevanten makroökonomischen Leistungsindikatoren abbilden. Die verwendeten Modelle basieren auf Modellsystemen, wie sie bereits von der Generaldirektion für Regionalpolitik und Stadtentwicklung verwendet wurden, namentlich das Kohäsionssystem der HERMIN Modelle (Cohesion System of Hermin Models, CHSM), sowie aus spezifischen Daten, die für disaggregierte Modellierungen für Litauen verwendet wurden. Die zugrundeliegenden Modellannahmen sind für alle drei untersuchten Länder gleich. Die modellierten Effekte unterschieden sich zwischen den drei Baltischen Staaten deswegen, weil zum einen unterschiedlich hohe Ausgaben der KP zugrunde lagen, und zum anderen aufgrund der verschiedenen Parameter und Elastizitäten der wirtschaftlichen Variablen, die durch die ökonometrische Analyse der volkswirtschaftlichen Gesamtrechnung ermittelt wurden.

Eine weitere anspruchsvolle Aufgabe im Rahmen der Analyse war die Bewertung des Beitrages der KP zur Erfüllung der Zielwerte der Ergebnisindikatoren der OP. Insgesamt wird der Beitrag der KP als gering, mittel oder hoch bemessen, abhängig von den erreichten Werten der Outputindikatoren und deren Wirkung auf den Zielwert der Ergebnisindikatoren.

Die Auswirkungen der KP auf makroökonomischer und Sektoren-Ebene

Der allgemeinste Indikator für die Wirkungsabschätzung der KP stellt der “kumulative Multiplikator” dar. Dabei werden die Auswirkungen auf das Bruttoinlandsprodukt (BIP) kumuliert, indem das jährliche BIP Wachstum summiert wird und durch den kumulierten Anteil der KP Ausgaben am BIP dividiert werden. **Estland** weist die höchste Rücklaufquote der KP Investitionen auf (der erwartete kumulative Multiplikator bemisst sich im Jahre 2030 auf 2,51); **Lettland** weist eine niedrigere Rücklaufquote der KP Investitionen auf (2,27); und **Litauen** liegt mit 2,33 dazwischen. Die Zahlen deuten auf eine hohe Rücklaufquote der KP Investitionen und auf relativ moderate Unterschiede der kumulativen Multiplikatoren in allen drei **Baltischen Staaten**. Zwischen 2014-2030 wird voraussichtlich 1 EUR der KP Investitionen 2,51 EUR BIP in **Estland**,

2,33 EUR in **Litauen** und 2,27 EUR in **Lettland** generieren. Diese Zahlen beziffern insgesamt eine Rücklaufquote von jeweils 151 Prozent, 133 Prozent bzw. 127 Prozent über den Zeitraum von 16 Jahren in **Estland, Litauen** und **Lettland** (durchschnittlich 9,4 Prozent pro Jahr in **Estland**, 8,3 Prozent pro Jahr in **Litauen** und 7,9 Prozent pro Jahr in **Lettland**).

Die Auswirkung der KP Investitionen auf das BIP sind für alle drei Länder vergleichbar. Aufgrund der Investitionen wird das Niveau des BIPs in allen drei **Baltischen Staaten** signifikant gesteigert – von 2014-2023 wird das BIP im Durchschnitt jährlich um 2,5 Prozent höher liegen als vergleichsweise ohne KP.

Der Einfluss der KP auf die Gesamtbeschäftigung wird voraussichtlich in **Litauen** und **Lettland** am größten sein – aufgrund der Investitionen in Beschäftigung wird das Beschäftigungsniveau 2014-2023 im Durchschnitt jährlich um 1,8 Prozent höher sein als vergleichsweise ohne KP. Der jährliche durchschnittliche Einfluss in **Estland** liegt voraussichtlich bei 1,4 Prozent. Der Einfluss auf die Beschäftigung in den **Baltischen Staaten** wird als niedriger eingeschätzt als der Einfluss auf das BIP, da KP Investitionen die Arbeitsproduktivität ankurbeln, was ein Wachstum des BIPs, mit kleinerem Wachstum der Beschäftigungsquote als Folge hat.

Außerdem wurde der Einfluss der KP Investitionen auf Produktionszweige analysiert. Der Einfluss auf die Baubranche in allen drei **Baltischen Staaten** wird sofort augenscheinlich, was den hohen Anteil an Investitionen in physische Infrastruktur widerspiegelt. Die Förderungen machen sich auch im Dienstleistungssektor bemerkbar, auch wenn die Auswirkung niedriger ist als in der Baubranche. Durch die KP Investitionen wird das Niveau marktbestimmter Dienstleistungen 2014-2020 in allen drei **Baltischen Staaten** im Durchschnitt um 3,2 Prozent jährlich höher liegen als vergleichsweise ohne KP. Die genannten Wirkungen nehmen mit der Beendigung der OP ab.

Auch wenn der Einfluss der KP Investitionen auf den produzierenden Sektor moderat ist, sind sie für nachhaltiges Wachstum und Beschäftigung am wichtigsten. Während der Förderperiode durch die OP kann ein schwacher ‚Verdrängungseffekt' des produzierenden Sektors festgestellt werden, da dieser dem internationalen Wettbewerb am meisten ausgesetzt ist. Wegen der vorgesehenen Investitionen wird das Level des BIPs 2014-2020 in allen drei **Baltischen Staaten** im Durchschnitt jährlich um 0,4 Prozent höher sein. Langfristig wird erwartet, dass der Einfluss der KP in **Litauen** und **Lettland** am höchsten sei wird – aufgrund der Investitionen geht man davon aus, dass das durchschnittliche BIP 2014-2023 jährlich um 1,4 Prozent als vergleichsweise ohne KP wächst. Der durchschnittliche jährliche Einfluss in **Estland** wird bei 1,1 Prozent liegen.

Die Auswirkungen der KP auf die Erfüllung der Zielwerte der OP Ergebnisindikatoren

In allen drei **Baltischen Staaten** wird ein hoher, bzw. mittlerer bis hoher Einfluss der KP Investitionen auf die Bereiche Transport, Anpassung an den Klimawandel, Umwelt und Ressourceneffizienz, Gesundheit, soziale Inklusion, Bildung, Qualifikation und lebenslanges Lernen, institutionelle Kapazität des öffentlichen Sektors und des Verwaltungssektors/der Politikfelder erwartet. In quantitativer Hinsicht wird erwartet, dass die KP Investitionen mehr als 50 Prozent der anvisierten positiven Entwicklung der Ergebnisindikatoren ausmachen.

Es gibt keine Sektoren/Politikfelder, in denen die erwartete Wirkung der KP auf die Erreichung der Ziele als niedrig einzustufen ist, was als ein positives Zeichen für die Relevanz der KP Investitionen anzusehen ist. Die Wirkungen der KP auf KMUs und FTEI Sektoren/Politikfelder wird in allen drei **Baltischen Staaten** als am niedrigsten eingeschätzt. Diese Sektoren/Politikfelder werden von privaten Akteure dominiert. Daher ist es unwahrscheinlich, dass alleinig öffentliche Investitionen signifikante Veränderungen bewirken können. Ein weiterer Grund dafür sind die, speziell im FTEI Sektor/Politikfeld, zu ambitionierten Ziele.

Der Anteil der finanziellen europäischen Zuwendungen gemessen am Anteil der öffentlichen Ausgaben variiert zwischen den Sektoren/Politikfelder. Allerdings fördern KP Investitionen Innovation und Fortschritt selbst in Sektoren/Politikfelder, in denen ihr Anteil gering ist, aufgrund des dominierenden Fokus auf neuen Entwicklungen, während ein großer Anteil der nationalen Ressourcen dafür aufgewendet werden muss, laufende Ausgaben zu decken (z.B. für die Wartung von vorhandenen Einrichtungen).

Einfluss der KP auf den Sektor/das Politikfeld FTEI

Die Leistungsfähigkeit der Forschung, Technologie, Entwicklung und Innovationssektoren/Politikfeldern variiert in den Baltischen Staaten. Hinsichtlich des Rankings im europäischen Innovationssanzeiger, sowie betreffend der Ausgaben für Forschung und Entwicklung übertrifft **Estland** die Baltischen Nachbarn.

Die Baltischen Staaten priorisieren den Sektor/das Politikfeld FTEI (größter Sektor in Estland, viertgrößter Sektor in Litauen und Lettland) in der laufenden Programmperiode um eine qualitativ hochwertige, wettbewerbsfähige Forschung sicher zu stellen, die im Interesse der Gesellschaft und Wirtschaft handelt um Letztere wissensintensiver zu machen, was wiederum die Wettbewerbsfähigkeit stärken und Innovationen und eine nachhaltige Entwicklung der Gesellschaft ermöglichen soll.

Die Auswirkungen der KP auf die Bruttoinlandsaufwendung für FuE (Gross domestic expenditure on R&D - GERD) ist in **Estland** am höchsten – aufgrund der geplanten Investitionen weist GERD 2014-2023 einen um jährlich 4,6 Prozent höheren Durchschnittswert auf, als vergleichsweise ohne KP. Die jährliche durchschnittliche Auswirkung auf **Litauen** und **Lettland** wird jeweilig 1,5 bzw. 2,1 Prozent entsprechen. GERD als Anteil des BIP in 2023 wird in **Estland** am höchsten auf 2,4 Prozent (nationaler Zielwert – 3 %), in **Litauen** auf 1,2 Prozent (nationaler Zielwert – 1,9 %) und in **Lettland** auf 0,8 Prozent (nationaler Zielwert 1,5 %) geschätzt. Dies legt nahe, dass keiner der drei **Baltischen Staaten** 2023 ihre Europa 2020 Zielwerte erreichen werden. Dieser offensichtliche Misserfolg sollte allerdings in Relation zu den sehr ambitionierten Zielwerten betrachtet werden.

Die Wirkung der KP auf andere OP Ziele wurde als gering bis mittel und mittel eingestuft. Es gibt zwei zentrale Erklärungsansätze für den niedrigeren Einfluss der KP Investitionen auf diesen Sektor/dieses Politikfeld. Erstens war die Planung der Werte für die Ergebnisindikatoren zu ambitioniert, was das Erreichen der Werte ausschließlich durch KP Investitionen erschwerte. Zweitens ist das Erreichen der angestrebten Ziele im Sektor/Politikfeld KMU stark von externen Faktoren, wie zum Beispiel der Bereitschaft von Wirtschaftssektoren in FTEI Aktivitäten zu investieren, abhängig. Die Aktivitäten der OP sind primär auf die Stärkung der Angebotsseite des FTEI Systems ausgerichtet, wohingegen der Fokus der Aktivitäten, die darauf abzielen die Nachfrageseite zu stärken, nicht ausreicht um genügend private Investitionen zu mobilisieren.

Der Einfluss der KP Investitionen auf den Sektor/das Politikfeld IKT

Im Zeitraum 2007-2015 näherten sich alle drei **Baltische Staaten** ihren nationalen Zielwerten an. Der Anteil der Haushalte, welche Zugang zu einem Breitbandanschluss verfügten, wuchs in den Baltischen Staaten von 22 auf 37 Prozentpunkte, während die Verfügbarkeit von Breitbandinternet in dünn besiedelten Gebieten von 37 auf 47 Prozentpunkte beträchtlich wuchs. Ein konstantes Wachstum der Personen, welche Internet nutzten um mit öffentlichen Behörden zu interagierten, konnte ebenfalls festgestellt werden. **Estland** führt bezüglich der genannten Indikatoren unter den Baltischen Staaten.

Insgesamt summieren sich die europäischen Fördermittel in diesem Bereich auf 490 Millionen EUR. Alle drei **Baltischen Staaten** sind darauf bedacht Zugang zu Breitband- und High-Speed Internet zu schaffen, wie auch elektronische öffentliche Administration und Dienstleistungen weiter auszubauen und die Wiederverwendung von Informationen des öffentlichen Sektors zu fördern. **Lettland** und **Litauen** setzten den Schwerpunkt auf den Ausbau des Breitbandinternets, speziell in ländlichen Gebieten, während **Estland** die Priorität auf den Ausbau der Internetgeschwindigkeit gelegt hat, da die Breitbandabdeckung bereits sehr hoch ist.

Die Wirkung der KP auf die Erhöhung des Zugangs zu Breitbandinternet in **Litauen** und **Lettland** ist als hoch anzunehmen. Gleichfalls sollten sich die Investitionen deutlich auf die Geschwindigkeit des Datenaustauschs in **Estland** auswirken. Der Beitrag der KP zu den politischen Zielen der **Baltischen Staaten**, gemessen an der Zahl der Nutzer, und in Anbetracht der erwarteten Ergebnisse und der Abhängigkeit von der Bereitschaft e-services zu nutzen, wurde als mittel bewertet.

Der Einfluss der KP auf den Sektor/das Politikfeld KMU

Die Entwicklungsgeschwindigkeit der Produktivität der KMUs oder deren Exporte als Anteil des BIP hat im letzten Jahrzehnt dafür gesorgt, dass die **Baltischen Staaten** den EU Durchschnitt übertroffen haben.

Insgesamt bemisst dich der Beitrag der EU in diesem Sektor/Politikfeld in den **Baltischen Staaten** auf 1,1 Milliarden EUR. KP Investitionen werden voraussichtlich zu den primären nationalen und europäischen Politikzielen beitragen, nämlich, höhere Arbeitsproduktivität, Anstieg der Exporte, steigendes Unternehmertum und vereinfachter Zugang zu Finanzierungsmöglichkeiten.

Auch wenn diese Veränderungen stark von privaten Initiativen abhängig sind, wird die KP diese Bereiche positiv beeinflussen. Aufgrund der KP Investitionen wird die jährliche durchschnittliche Arbeitsproduktivität voraussichtlich während der Umsetzung der OP in **Estland** um 1,1 Prozent, in **Litauen** um 0,7 Prozent und in **Lettland** um 1,1 Prozentpunkte höher sein als vergleichsweise ohne KP.

Unter der Annahme, dass die Ziele der OP erreicht werden, wird 2023 die reale Produktivität pro Arbeitsstunde im Vergleich zum EU 28 Durchschnitt bei 65 Prozent für **Estland**, bei 49 Prozent in **Litauen** und bei 40 Prozent für **Lettland** liegen. Die makroökonomischen Modelle deuten darauf hin, dass die angestrebten Wachstumsraten für **Litauen** und **Lettland** als relativ realistisch zu bewerten sind, während das Szenario in Estland als nicht erreichbar erscheint (55 Prozent im Vergleich zum EU 28 Durchschnitt ist ein realistischeres Ziel). Trotz der signifikanten Verbesserungen, welche bezüglich der Produktivität der KMUs für das kommende Jahrzehnt erwartet werden (8-12 Prozentpunkte Wachstum im Vergleich zum Ausgangswert 2013), werden die **Baltischen Staaten** auch in Zukunft deutlich hinter dem europäischen Durchschnitt zurückbleiben.

Die Eigenschaften des Sektors/Politikfeld, die Ausrichtung der Interventionen und die externen Faktoren außerhalb der Wirkungsräume der OP waren die primären Faktoren, die die Reichweite der KP Investitionen auf ein niedriges bis mittleres Niveau in den **Baltischen Staaten** beschränkt haben. Da der Sektor/das Politikfeld durch private Akteure dominiert ist, ist es unwahrscheinlich, dass ausschließlich öffentliche Investitionen eine signifikante Veränderung bewirken werden. Die Höhe an privaten Investitionen, technischer Fortschritt und die Regulierung von wirtschaftlichen Rahmenbedingungen stellen einige der äußeren Faktoren dar, welche Produktivität und andere OP Ziele deutlich beeinflussen werden.

Der Einfluss der KP auf den Sektor/das Politikfeld Energie

Alle drei **Baltischen Staaten** haben bereits das Europa 2020 Ziel zur Reduzierung der Treibhausgasemissionen um 20 Prozent, im Vergleich zum Ausgangswert von 1990, übertroffen. Dies ist allerdings darauf zurückzuführen, dass 1990 noch eine ineffiziente Energieinfrastruktur sowjetischer Bauart verwendet wurde. Trotz bereits guter Fortschritte benötigen die **Baltischen Staaten** im Vergleich zu anderen EU Staaten noch immer überdurchschnittlich viel Energie um eine Einheit BIP zu produzieren.

Die gesamte Förderung beläuft sich hier auf 1,7 Milliarden EUR für alle **Baltischen Staaten**, wobei mehr als 1 Milliarde auf **Litauen** entfallen. Die geplanten Investitionen in allen drei **Baltischen Staaten** werden voraussichtlich dazu beitragen, den Energieverbrauch zu senken (Energieintensität), den Anteil erneuerbarer Energien zu erhöhen und die Treibhausgasemissionen weiter zu senken (wie auch zu einer niedrigeren Emissionsintensität).

Dadurch, dass die Zielwerte zur Nutzung erneuerbarer Energien und Treibhausgasemissionen in den Baltischen Staaten bereits fast erreicht sind, liegt die Erwartung des Beitrages der KP Investitionen primär auf der Ausrichtung des Baltischen Energieintensitätniveaus am europäischen Durchschnitt. Als Folge der Investitionen wird erwartet, dass das Niveau der Energieintensität von **Estland** und **Lettland** zwischen 2014 und 2023 im Durchschnitt um 1,5 Prozent sinken wird im Vergleich zu einer Entwicklung ohne KP. Der jährliche Einfluss der KP Investitionen in **Litauen** beläuft sich auf eine Reduktion von 1,1 Prozent. Der niedrigere Einfluss in Litauen kann durch ein bereits niedrigeres Energieintensitätsniveau erklärt werden. Es ist zu erwarten, dass die abschließende Energieintensität in 2023 in **Litauen** am niedrigsten sein wird (129 kgoe/ EUR 1000), gefolgt von **Estland** (136 kgoe/ EUR 1000) und **Lettland** (165 kgoe/ EUR 1000). Diese Werte werden dennoch, relativ gesehen, höher sein als der EU Durchschnitt (80,6 kgoe/ EUR 1000 in 2014).

Zusätzlich zu den genannten Auswirkungen, ist durch das OP **Litauens** ein Einfluss auf die Eingliederung des Landes in den europäischen Binnenmarkt für Energie (mittlerer bis hoher Beitrag) und auf die Qualität der Energieversorgung (niedrig bis mittlerer Beitrag) zu erwarten.

Der Einfluss der KP auf den Sektor/das Politikfeld Anpassung an den Klimawandel

Die KP Interventionen in allen drei **Baltischen Staaten** tragen zur Erfüllung nationaler als auch europäischer Politikziele zur Reduzierung umweltbedingter Risiken und zur Verbesserung der Absicherung gegen Schäden an Küstengebieten, Wasser- und Landlebensräumen, als Folgen des Klimawandels, bei. Die betreffenden Maßnahmen, die von der KP unterstützt werden und zu den übergreifenden 20-20-20 Klima- bzw. Treibhausgasemissionszielen der Programmperiode beitragen, sind allerdings primär innerhalb des Sektors/Politikfelds Energie- und Transport zuzuordnen.

Auch wenn der KP Beitrag für die Anpassung an den Klimawandel einer der eher kleineren Sektoren/Politikfelder innerhalb der OP darstellt (insgesamt 230 Millionen EUR für alle drei **Baltischen Staaten**), so ergänzen die Investitionen des Sektors/Politikfelds Energie- bzw. Transport die Klimaschutzpolitik in den drei Ländern.

Der Umfang und die Ausrichtung der Investitionen zur Reduzierung der Klimawandelrisiken und zur Verbesserung des Schutzniveaus der Bürger und ihrer wirtschaftlichen Aktivitäten gegenüber umweltbezogenen Gefahren – im Fall **Estlands** fast 50 Prozent des Gesamtvolumens, in **Lettland** und **Litauen** über 80 Prozent – wird voraussichtlich dazu beitragen, dass die meisten der Ergebnisziele der OP der **Baltischen Staaten** innerhalb dieses Politikfeldes erreicht werden. Des Weiteren werden, mit Ausnahme einiger lettischer Fälle, die angenommene Wirkung der geplanten Interventionen zur Reduzierung von Umweltrisiken und Klimawandel-Folgeschäden als relativ hoch eingeschätzt.

Die Fähigkeiten der **Baltischen Staaten** Klimawandel-Folgeschäden und Risiken zu reduzieren ist stark abhängig von der zukünftigen Entwicklung der weltweiten Treibhausgasemissionen und folglich von der globalen Erwärmung und ihrer Konsequenzen.

Der Einfluss der KP auf den Sektor/das Politikfeld Umwelt- und Ressourceneffizienz

Die Leistungsfähigkeit der **Baltischen Staaten** zur Verarbeitung und Wiederverwertung verschiedener Abfallarten war wesentlich niedriger als der EU-28 Standard. Mit der Ausnahme von Lettland hat sich die Situation dennoch in den letzten Jahren signifikant verbessert. Das Gefälle zwischen **Estland** und **Litauen** und dem EU Durchschnitt, gemessen am Anteil des wiederverwerteten Abfalls, hat sich signifikant reduziert. Gemessen an den laufenden und geplanten KP Maßnahmen befindet sich **Lettland** ebenfalls auf dem richtigen Weg um den Anteil an wiederverwertetem Abfall zu erhöhen. Hinsichtlich der Themen „Biodiversität“ und „Erhalt vorhandener Lebensräume für geschützte Arten“ gestaltet sich die Situation kontrastreicher. **Estland** und **Lettland** weisen höhere Werte als der EU Durchschnitt bezüglich der Ausweisung von Standorten nach der Habitat-Richtlinie auf, während **Litauen** nur sehr schlechte Resultate vorweist.

In diesem Bereich summieren sich die europäischen Fördermittel in den **Baltischen Staaten** auf 1,5 Milliarden EUR. Die KP Maßnahmen beziehen sich hauptsächlich auf europäische und nationale Politikziele um Naturkapital zu stärken und zu schützen und um Menschen und Lebensräume vor umweltbezogenen Belastungen und Gesundheitsrisiken zu bewahren.

Zweifellos wird die starke Konzentration der Maßnahmen auf Wasserschutz, Abfallmanagement und auf den Schutz biologisch empfindlicher Lebensräume zu einer Verbesserung in allen drei **Baltischen Staaten** in den kommenden Jahren führen. Dadurch, dass die meisten der KP Investitionen auf den Wasser- und Bodenschutz abzielen, werden voraussichtlich die empfindlichen Baltischen Lebensräume zu einem beträchtlichen Teil zu den erwarteten Zielen hinsichtlich der Verbesserung der Umweltsituation beitragen.

Die Bewertung der OP der **Baltischen Staaten** bezüglich der Förderung des umweltfreundlichen Tourismus und der Stärkung des öffentlichen Bewusstseins der Nutzung umweltrelevanter Ressourcen muss etwas differenzierter erfolgen, aufgrund der Abhängigkeit der OP Ziele von externen Akteuren aus dem privaten Sektor, Marketingbemühungen, etc. Ähnliches gilt für die Bewertung der **Lettischen** Bemühungen zur Wiederbelebung städtischer Problemgebieten und für die Bemühungen den Einflussbereich der Privatwirtschaft auf wichtige nationale und regionale Zentren zu erweitern. Dabei kommen niedrige bis mittlere Auswirkungsniveaus der KP Beiträge häufiger vor, da der Erfolgsgrad stark von der Bereitschaft privater Firmen abhängt in bestimmte Bereiche zu investieren und ihre Tätigkeiten zu erweitern.

Der Einfluss der KP auf den Sektor/das Politikfeld Transport

Trotz der Verbesserungen der letzten Jahre gibt es nach wie vor großen Handlungsbedarf. Transportbedingte Treibhausgasemissionen bleiben weiter hoch. **Estland**. **Litauen** und **Estland** weisen eine grundsätzliche Abhängigkeit vom PKW auf, während **Lettland** in diesem Feld bessere Werte als der EU Durchschnitt aufweist. Geringe Verkehrssicherheit bleibt allerdings in **Litauen** und **Lettland** ein Problem.

Die **Baltischen Staaten** priorisierten Transport unter den zwei größten Sektoren/Politikfeldern der OP. Insgesamt bemisst sich der europäische Beitrag auf 2,8 Milliarden EUR. Investitionen sind in diesem Bereich hauptsächlich auf die Verbesserung von Straßen, Schienenwegen oder weiteren Transportinfrastrukturen, sowie zur Förderung der öffentlichen Verkehrsmittel ausgerichtet.

Trotz bereits signifikanter Reduzierungen von transportbedingten Treibhausgasemissionen zwischen 2007 und 2013 konnte zwischen 2006 und 2007 in allen drei **Baltischen Staaten** ein starker Anstieg transportbedingten Emissionen festgestellt werden. Allerdings bieten die nationalen Politikziele der Europa 2020 Strategie Raum für einen solchen Anstieg der Emissionswerte. Aufgrund des Fehlens expliziter Ergebnisindikatoren in **Estland**, kann kein Urteil über den Einfluss der KP angestellt werden. Sollten die OP Ziele für **Litauen** erreicht werden, würde dies zu einer Reduktion der transportbedingten Emissionen um 1,3 Prozent und, im Falle von **Lettland,** zu einer Reduktion von 2,9 Prozent führen. Dies stellt im Vergleich zu den beobachteten Veränderungen zwischen 2005-2013 ein beträchtliches Ergebnis dar (3 % Anstieg in Litauen, 9 % Rückgang in Lettland).

Die Investitionen werden ebenfalls die Nutzung von öffentlichen Verkehrsmitteln vereinfachen und den betreffenden Kontextindikator beeinflussen (Anteil der PKW-km am gesamten Personeninlandverkehr, gemessen in Personen-km). In **Estland** würde das Erreichen der OP Ziele zu einer Verminderung des Anteils der PKW-km am Anteil des gesamten Personeninlandverkehrs um 3 Prozentpunkte führen, was ein ambitionierter aber angemessener Erwartungswert ist, berücksichtigt man die jüngsten Entwicklungen. In **Litauen** und **Lettland** würde die Erreichung der OP Zielwerte zu einer bescheidenden Reduktion von jeweils 0,10-0,15 Prozentpunkten führen.

Der Einfluss der KP auf den Sektor/das Politikfeld Beschäftigung

Positive Entwicklungen auf dem Arbeitsmarkt, die in letzter Zeit beobachtet werden konnten, weisen annähernd historische Spitzenwerte der Beschäftigungsquoten von 76,5 Prozent in **Estland**, 73,4 Prozent in **Litauen** und 72,5 Prozent in **Lettland** auf.

Die **Baltischen Staaten** werden mehr als 1,2 Milliarden EUR europäische Mittel investieren um die drei Stützen des Arbeitsmarktes zu fördern: Chancen für Arbeitgeber, Qualifizierungsmaßnahmen für Arbeitslose und benachteiligte Gruppen sowie Verbesserung von Arbeitsmarktservices. Die KP Investitionen sollten die Beschäftigungsrate um 1,3 Prozent in **Estland**, 1,6 Prozent in **Litauen** und um 1,7 Prozent in **Lettland** jährlich im Laufe der Umsetzungsperiode der OP anheben. 2020 sollten die **Baltischen Staaten** sich ihren nationalen Politikzielen der Europa 2020 Strategie stark angenähert haben. Schwankungen in der wirtschaftlichen Entwicklung werden allerdings weiter Druck auf das Erreichen der Ziele zur Beschäftigungsquote ausüben.

Der positive Beitrag der KP suggeriert, dass sich die Situation für verschiedene Zielgruppen (junge und ältere Arbeitslose, etc.) durch die geplanten Maßnahmen verbessern wird. Diese Erwartungen werden ebenfalls dadurch gestützt, dass die **Baltischen Staaten** erhebliche Investitionen zur Unterstützung der aktiven Arbeitsmarktpolitik für diese Gruppen angestrebt haben.

In **Estland** werden deutliche Verbesserungen durch eine ausgiebige Finanzierung und durch das Ansprechen einer großen Zielgruppe von eingeschränkt arbeitsfähigen Menschen erwartet. Der Beitrag zum wirtschaftlichen Wachstum in den bezeichnenden Bereichen für **Estland** und **Litauen** wurde als gering eingeschätzt, da diese stark von externen Faktoren abhängig sind.

Der Einfluss der KP auf den Sektor/das Politikfeld soziale Inklusion

Der Anteil der von Armut oder sozialer Exklusion betroffenen Bevölkerung in **Estland** war in den letzten Jahren nah am Durchschnitt der EU, während **Litauen** und **Lettland** schlechtere Werte aufwiesen.

Alle drei **Baltischen Staaten** wollen die Qualität der Dienstleistungen für sozial benachteiligte Gruppen verbessern, und folglich die Beteiligung dieser Bevölkerungsgruppen am Arbeitsmarkt erhöhen. Die Investitionen der KP werden helfen den Übergang von einer institutionsbasierten, zu einer gemeinwesenbasierten Versorgung zu erreichen und mehr Dienstleistungen zur Erhöhung der Vermittlungsfähigkeit von benachteiligten Gruppen bereitzustellen. Außerdem unterstützt das **Estnische** OP die Einführung von Integrationsprogrammen für Immigranten und schlecht integrierte Personen mit einer permanenten Aufenthaltsgenehmigung, während das **Lettische** OP darauf abzielt die Verfügbarkeit von Sozialwohnungen zu erhöhen. Die gesamte europäische Förderung der **Baltischen Staaten** bemisst sich hier auf 680 Millionen EUR. Während dieser Beitrag nur ein Bruchteil der gesamten nationalen Fördermittel in Bezug auf den Sektor/das Politikfeld darstellt, sind die Investitionen der KP die wesentliche Quelle zur Durchführung von Sozialreformen.

Investitionen der KP werden den Anteil der Personen, die von Armut und sozialer Ausgrenzung gefährdet sind, beeinflussen. Während der Umsetzungsphase der OP sank ihr Anteil jährlich um durchschnittlich 0,7 Prozent in **Estland**, 1,4 Prozent in **Litauen** und 1,3 Prozent in **Lettland**. 2023 wird sich ihr Anteil voraussichtlich auf 24 Prozent in **Estland**, 23,4 Prozent in **Litauen** und 29 Prozent in **Lettland** belaufen. Die Prognose lässt annehmen, dass **Litauen** und **Lettland** sehr wahrscheinlich ihre nationalen Politikziele erreichen werden. Für **Estland** hingegen wird es schwer werden die nationale Zielsetzung zu erfüllen, da der Ausgangswert von 2008 sehr niedrig ist.

Bezüglich der anvisierten Ziele und angestrebten Ergebnisse der OP werden die KP Investitionen als positiv betreffend dem Einfluss auf die sozialen Inklusionsziele in allen drei **Baltischen Staaten** eingeschätzt. Den größten Beitrag für soziale Inklusion wird durch eine Verbesserung der Dienstleistungen für benachteiligte Personen erzielt, folglich durch eine verbesserte Integration in Gesellschaft und Gemeinschaft und in ein unabhängiges und eigenständiges Leben. Der Beitrag der KP Investitionen, welche auf eine Integration in den Arbeitsmarkt abzielen, wird als mittel bis hoch eingeschätzt; die Langzeiteffekte werden nichtsdestotrotz von der Nachhaltigkeit der generierten Resultate abhängig sein.

Der Einfluss der KP auf den Sektor/das Politikfeld Gesundheit

Bezüglich der standardisierten Sterblichkeitsrate und der Zahl gesunder Lebensjahre in den **Baltischen Staaten** bleiben die Werte unterhalb des Durchschnitts der EU. Im direkten Vergleich gibt es allerdings Unterschiede; während die standardisierte Sterblichkeitsrate in **Estland** am höchsten ist, ist die Zahl der gesunden Lebensjahre in **Litauen** größer als in den Nachbarländern.

Insgesamt investieren die **Baltischen Staaten** 590 Millionen EUR europäischer Mittel in dieses Themenfeld. Sie möchten dabei die Qualität und die Zugänglichkeit von Gesundheitsdienstleistungen speziell in entlegenen Gebieten verbessern. Auch wenn die Baltischen Staaten leicht verschiedene Ansätze erarbeitet haben, so bleibt der Einfluss der KP Investitionen auf das Gesundheitssystem und speziell in den Regionen abseits der großen Städte mittel bis hoch. Es wird erwartet, dass zielgerichtete Maßnahmen einen großen Einfluss auf die Verminderung von Alkoholmissbrauch und assoziierten Schäden in **Estland** haben werden. KP Investitionen werden voraussichtlich in Litauen und Lettland zu einem mittleren Ausmaß dazu beitragen, dass die OP Ziele bezüglich gesunder Lebensweisen, erreicht werden.

Eine allgemeine Verbesserung der Lebensqualität wie auch der gesundheitlichen Versorgung schlägt sich positiv in der Lebensdauer nieder. 2023-2030 wird der Indikator der standardisierten Sterberate im Schnitt um 0,6 Prozent in **Estland**, 0,1 Prozent in **Litauen** und 0,2 Prozent in **Lettland** niedriger sein als vergleichsweise ohne KP. Es ist zu erwarten, dass 2023 die Sterberate pro 100.000 Personen in **Estland** bei etwa 1.089 liegt, in **Litauen** bei etwa 1.456 und in **Lettland** bei etwa 1.460, was darauf hindeuten würde, dass die Rate immer noch höher als der EU Durchschnitt ist.

Die Investitionen der KP werden sich wahrscheinlich positiv auf die Dauer der gesunden Lebenszeit in allen drei **Baltischen Staaten** auswirken. Dank der Investitionen wird die gesunde Lebenszeit von Frauen und Männern nach der erfolgreichen Beendigung der OP 2023-2030 im Schnitt um 0,04-0,14 Prozent höher sein. Der Unterschied der angenommenen Dauer der gesunden Lebenszeit 2023 zwischen Frauen und Männern bleibt in den **Baltischen Staaten** nennenswert und unter dem Durchschnitt der EU, außer für Frauen in **Litauen**.

Der Einfluss der KP auf den Sektor/das Politikfeld Bildung, Fertigkeiten und lebenslanges Lernen

Betreffend den analysierten Indikatoren bezüglich frühzeitiger Schul- und Ausbildungsabgänger, Erreichung des Ausbildungsstand, Einstellen von Arbeitnehmern mit mindestens Sekundarausbildung weisen die **Baltischen Staaten** mit wenigen Ausnahmen bereits heute höhere Werte als die nationalen Zielwerte der Europa 2020 Strategie auf. Das Niveau des Indikators „Erwachsenenbildung" weist allerdings nur ausreichend hohe Werte in **Estland** auf.

Insgesamt bemisst sich die Summe der europäischen Fördermittel für die drei **Baltischen Staaten** hier auf 1,5 Milliarden EUR. Alle drei OP haben die Absicht zentrale Aspekte der Bildungssysteme zu unterstützen, wie aus den strategischen nationalen Dokumenten und dem CSR 2016 hervorgeht. Das **Estnische** OP hingegen weist einen konzentrierteren Ansatz auf wenige, selektive Aspekte auf, während das **Litauische** und das **Lettische** OP an mehreren Aspekten auf verschiedenen Bildungsebenen ansetzt. Die Investitionen der KP zielen darauf ab in allen drei **Baltischen Staaten** die Qualität der Bildung allgemein zu erhöhen, die Erwachsenenbildung zu stärken und dafür zu sorgen, dass die Bildungswege auf allen Bildungsniveaus an den Bedürfnissen des Arbeitsmarktes ausgerichtet sind.

Die KP Investitionen werden voraussichtlich die Beschäftigungsquote der Personen im Alter von 15-64 Jahren in allen drei **Baltischen Staaten** erhöhen, welche mindestens eine höherwertige Sekundarbildung aufweisen können. Während 2014-2023 sollte im Schnitt jährlich das Level um 1,1-1,6 Prozent ansteigen im Vergleich zu einem Szenario ohne KP.

Investitionen durch die KP werden das Bildungsniveau in den **Baltischen Staaten** positiv beeinflussen. Der Anteil der Personen im Alter von 20-24 Jahren mit zumindest einer höherwertigen Sekundarbildung wird voraussichtlich durchschnittlich um 0,1-0,2 Prozentpunkte jährlich von 2014-2023 aufgrund der KP wachsen. Bis 2030 wird darüber hinaus ein weiterer Anstieg erwartet.

Die Investitionen der KP werden außerdem den Anstieg in der Erwachsenenbildung weiter fördern. Der Einfluss der KP auf die Erwachsenenbildung wird wahrscheinlich in **Estland** ausgeprägter sein (1,7 % jährlicher durchschnittlicher Anstieg von 2014-2023). In **Litauen** und **Lettland** bemisst sich der Einfluss auf jeweils 0,6 und 0,3 Prozent als vergleichsweise ohne KP.

Des Weiteren werden die Auswirkungen auf die Erreichung einer besseren Qualität der höheren Bildung bezüglich der Erneuerung von Bildungsinfrastruktur und effizienterem Management in **Litauen** als hoch eingeschätzt, während das Ausmaß des Einflusses der KP in **Lettland** betreffend der Qualität der höheren Bildung mittel bis hoch ist.

Der Einfluss der KP auf den Sektor/ das Politikfeld institutionelle Kapazität der öffentlichen Behörden und der Administration

Die finanzielle Zuwendung in diesem Bereich ist die Kleinste. Insgesamt bemisst sich die europäische Förderung für diesen Bereich für alle drei **Baltischen Staaten** auf 278 Millionen EUR. Die Investitionen der KP werden die Kapazitäten der öffentlichen Behörden und der Administration erheblich beeinflussen. Berücksichtigt man, dass ein nicht unerheblicher Anteil der Verwaltungsangestellten an Schulungen teilnimmt, welche durch KP Investitionen gefördert werden, so wird deutlich, dass mit dem Abschluss der Förderperiode die professionellen Kompetenzen und das Management im Personalbereich in allen drei **Baltischen Staaten** voraussichtlich ein mittleres bis hohes Niveau erreichen werden.

Grundlegende Verbesserungen bezüglich wissensbasierter Verwaltung werden ebenfalls in **Estland** und in **Litauen** erwartet. Die Weiterentwicklung des strategischen Managements, der Einsatz von Wirkungsabschätzungsmethoden zur Bewertung von Entscheidungen und Maßnahmen werden die Qualität der öffentlichen Verwaltung langfristig verbessern. Eine kleinere, trotzdem relevante, Verbesserung wird bezüglich der Gestaltung des Unternehmensumfelds wie auch bei der Transparenz und Einsehbarkeit von Verwaltungsprozessen in **Litauen** erwartet (primär bezüglich öffentlicher Vergabeverfahren). Die Qualität der öffentlichen Dienstleistungen wie auch deren Ausrichtung an den Bedürfnissen der Nutzer, wird sich ebenfalls in **Estland** und **Litauen** erhöhen.

1. INTRODUCTION

The overall scope of the study is to assess the expected impact of Cohesion Policy (CP) on the main sectors/policy areas in the **Baltic States** (Estonia, Lithuania and Latvia) during the programming period 2014–2020. This also involves a discussion of the CP's contribution to the development of the Baltic States and to the attainment of key European priorities.

CP investments under the following Operational Programmes (OPs) are analysed:

- Operational Programme for Cohesion Policy Funds 2014–2020 (**Estonia**);
- Operational Programme for the European Union Funds' Investments in 2014–2020 (**Lithuania**);
- Operational Programme Growth and Employment 2014–2020 (**Latvia**).

Estonia, **Lithuania** and **Latvia** under these OPs will receive around 3.5 billion EUR, 6.7 billion EUR and 4.4 billion EUR of EU funding.

The Final draft report combines the results from all three tasks of the study:

- 1 "Linking indicators with related allocations"
- 2 "Place output and result indicators in context"
- 3 "Assess the expected impact of CP investments".

In section 2 of the report the methodology used to complete the study is presented. The results of the analysis and conclusions are presented in section 3. Section 3 is divided into 13 parts: 12 sectors/policy areas and 1 part dealing with the overall assessment of the CP impact on the social and economic development of the Baltic States.

Each part describing a particular sector/policy area is divided into five blocks:

1) EU and national policy objectives and CP interventions (describing the main EU and national policy objectives based on the review of EU and national strategic documents and interventions planned in the OPs of the three Baltic States under the sector/policy area);
2) Financial allocations (discussing the EU and national allocations dedicated to the sector/policy area of the Baltic States);
3) Main trends and expected impacts of the CP (assessing the main trends in the sector/policy area as well as impact of the CP in terms of context indicators and groups of OP objectives common to all or at least two out of three Baltic States);
4) 4) The CP impact on other OP objectives (assessing impact of the CP interventions on the OP objectives that are selected by one or two Baltic States only and are not covered by the context indicators);
5) 5) Conclusions (summarising the expected impacts).

The report is supplemented with annexes, including those on macroeconomic modelling application and the main results delivered from it, as well as country fact sheets.

2. METHODOLOGY OF THE STUDY

The tasks of linking the OP indicators to related allocations, placing output and result indicators in context and assessing the expected impact of the CP investments in the three Baltic States were detailed in the Specifications of the study. Each of these tasks was formulated in terms of a number of key questions to be answered.

Tasks and key questions of the study

Task 1: Linking indicators with related allocations

Key questions to be answered:

- ✓ The list of sector/policy areas selected for the analysis.
- ✓ What is the indicative financial allocation envisaged for output and result indicators under each sector/priority area?
- ✓ To what extent the outputs contribute to the results (i.e. analysis of the link between value of output indicators, financial allocations, and result indicators)?

Task 2: Place output and result indicators in context

Key questions to be answered:

- ✓ What are the main policy objectives and trends in each sector/policy area at national and EU level?
- ✓ What are the factors external to the programmes which may negatively affect the achievement of expected results?
- ✓ What (context) indicators capture in the best way the main policy objectives and trends per sector/policy area at national and EU level?
- ✓ What is the level of EU contribution compared to national investment in each sector/priority area?

Task 3: Assess the expected impact of CP investments

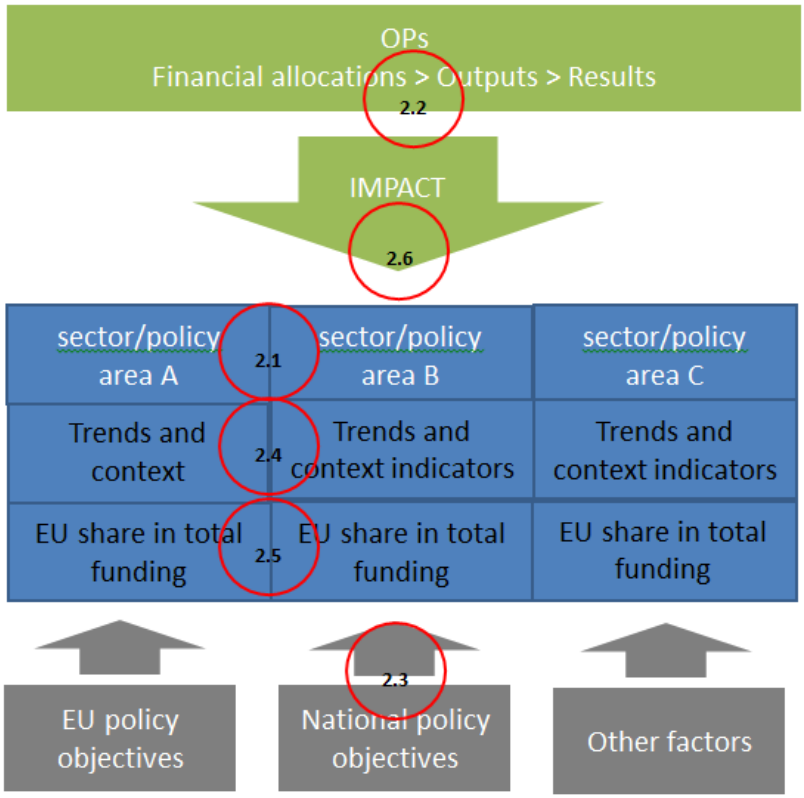
Key questions to be answered:

- ✓ How the value of the context indicators in each sector/policy area may change if the target values of the selected OP's indicators are achieved?
- ✓ How the CP interventions might further influence the main trends in each sector/policy area?
- ✓ What is the expected quantitative/qualitative input of CP intervention in filling the gaps in each sector/policy area as identified by policy objectives, including EU2020 national targets and Country Specific Recommendations (if relevant)?

Source: Specifications of the study, 2016

The object and the tasks of the study required a complex approach encompassing several analytical exercises. This involved detailed analyses of the OPs interventions specified by the objectives, output and result indicators, financial allocations and the actions to be supported. The sectors/policy areas that the CP was envisaged to affect were examined in terms of EU and national policy objectives and factors external to the OPs, the main trends and overall public financial allocations. In respect of the CP, the impact assessments involved macroeconomic modelling and an assessment of the CP contribution based on the linkages between indicators, case studies and expert judgements.

Figure 1. Object of the study – Schematic Overview



Source: Project team, 2016.

The numbers superimposed onto Figure 1 (circled in red) indicate the sub-sections that describe the methodologies applied in completing the study.

2.1. Selection of sectors/policy areas

The selection of sectors/policy areas provided a framework for the analysis and a clear structure for reporting the results of the study. The same list of the sectors/policy areas is applied in respect of each Baltic State.

During the selection exercise the intervention logic of the OPs was reviewed and categorised according to the thematic objectives and investment priorities provided in CPR[1] and Fund-specific regulations[2]. The information on interventions was taken from the SFC files provided by DG REGIO. A full list of the categorisation of OP interventions according to thematic objectives and investment priorities is provided in Annex 1.

In most cases, a thematic objective is deemed as an appropriate sector/policy area, e.g. sector/policy area "RTDI" comprises investment priorities under the thematic objective "Strengthening research, technological development and innovation". Each thematic objective represents a thematic area that can be described by a group of output and result indicators, financial allocations, EU and national policy objectives, trends, specific CP impact, and is therefore an appropriate level of analysis. In a few cases a thematic objective was split into two sectors/policy areas:

[1] Regulation, No 1303/2013 laying down common provisions on the ERDF, the ESF, the CF the EAFRD and the EMFF
[2] Regulation No 1300/2013 for Cohesion Fund; Regulation No 1301/2013 for ERDF; Regulation No 1304/2013 for ESF

- Thematic objective for low-carbon economy was split into two sectors/policy areas: “Energy” and “Transport”;
- IP priority 7e “Improving energy efficiency” and security of supply…” was attributed to the “Energy” sector/policy area;
- Thematic objective “Promoting social inclusion, combating poverty and any discrimination” was split into two sectors/policy areas: “Social inclusion” and “Health”. In some cases investments in health are planned under the same IPs as those for social inclusion, therefore the selection was carried out at the level of specific objectives.

The list of selected sectors/policy areas is provided in Table 1.

Table 1. Selection of sectors/policy areas

Number	Name of sector/policy area
1	RTDI
2	ICT
3	SMEs
4	Energy
5	Adaptation to climate change
6	Environment and resource efficiency
7	Transport
8	Employment
9	Social inclusion
10	Health
11	Education, skills and lifelong learning
12	Institutional capacity of public authorities and administration

Source: Project team, 2016.

2.2. Linking financial allocations to output and result indicators

The aim of this exercise was to identify and denote the indicative financial allocation envisaged for the output and result indicators under each sector/policy area. The starting point for linking indicators with financial allocations was the analysis of the OPs:

- The OP provides information on the amount of funds allocated to each priority axis;
- The OP provides a list of investment priorities within each priority axis with output indicators attributed to each investment priority;
- The OP provides a list of specific objectives within each investment priority with result indicators attributed to each specific objective (depending on the State, the OP may also indicate which output indicators are to be attributed to each specific objective).

The financial allocation envisaged for each specific output or result indicator is not provided in the OP. Distributing funding allocated to particular priority axes in equal proportions to all relevant output and result indicators would be unacceptably inaccurate. Thus, additional information sources must be applied. Information sources common to all three Baltic States (and in principle which should also be available in the case of other Member States, such that the methodology proposed here could be applied more broadly) were identified. The main sources (including a judgement on their suitability and limitations) are indicated in Annex 2.

Notwithstanding the differences in the suitability of the information sources among the Baltic States, some common mechanism has to be developed for the allocation of funding to output and result indicators. Taking into account the availability of desirable information in the identified data sources, an allocation exercise was conducted encompassing the following steps:

- Tables prepared by Managing Authorities / Intermediate Bodies were taken as a starting point as they contain most of the information in one piece. Such tables may already contain financial values of OI's (in the case of Estonia). Cross tabulation with the indicators sequence used in the Indicators Database (developed using SFC file and OP information) was applied.
- Where the financial value is attributed to two or more OIs, this value had to be distributed between these OIs. For example, in Lithuania, the energy efficiency promotion measure contributes to two OIs: "Decrease of annual primary energy consumption of public buildings" and "GHG reduction: Estimated annual decrease of GHG". The most suitable method for such a distribution was selected taking into account the available information:
    - Firstly, a check was made as to whether useful information is provided in the indicator's passports or justifications prepared on the performance framework indicators. Where these documents indicate a specific amount attributed to each, or at least to some of the OIs, then these indicated financial amounts were used. For example, in Latvia indicator passports provide financial values for most of the OIs. Thus, in the Latvian case financial distribution is largely based on allocations indicated in the indicator passports.
    - However, in cases where (a measure or a group of measures contributes to two or more OIs) no relevant information could be found in the indicator passports or justifications prepared on the performance framework indicators, the distribution was done by the experts of the core team. The following methods were employed:
        - 100%/100% distribution, where the outputs are delivered simultaneously. For example this applies in respect of the energy efficiency promotion measure (Lithuania) which contributes to the output indicators "Decrease of annual primary energy consumption of public buildings" and "GHG reduction: Estimated annual decrease of GHG". Decrease of energy consumption is a direct output of supported activities, thus 100% of financing is attributed to this OI. However, reducing energy consumption will simultaneously lead to GHG reduction, thus it can be argued that 100% of financing is also directed at reducing GHG emissions. Therefore, in the summary of the assessment of financial allocation, the full financial amount of the support measure will be reflected under each of the two OI's (see Table 2). As a result, the sum of percentage shares of financial allocations to the OI's within the (Energy) sector/policy area will be above 100%. As there are many such situations in respect of simultaneous contribution, the sum of the shares (% of financial allocation) in most sectors/policy areas is well above 100%.

Table 2. Example of summary assessment of financial allocations to output indicators

Type of indicators	Name of indicator	Share of financial allocation
Output indicators	**GHG reduction: Estimated annual decrease of GHG**	**35.4% (simultaneous contribution)**
	Renewables: Additional capacity of renewable energy production	26.0%
	Energy efficiency: Number of households with improved energy consumption classification	25.6%
	Decrease of annual primary energy consumption of public buildings	**14.8% (simultaneous contribution)**
	Towns with reduced street lighting maintenance and energy costs	7.6%
	Other output indicators	...

Source: Project team, 2016.

- Mathematical calculations, especially in cases when one indicator is a composite part of another indicator. For example, a measure supporting SMEs contributes to “Number of enterprises receiving financial support other than grants” (with a target value of 756) and to “Number of new enterprises supported” (with a target value of 50). As financing is particularly focused on supporting enterprises, the first indicator will receive the full financial amount of the measure. As 50 enterprises of the aforementioned 756 are planned to be new enterprises, the second indicator (“Number of new enterprises supported”) will receive 6.6% of the financial allocation (50 new enterprises divided by 756 enterprises equals to 6.6%).
- Expert opinion. For example, a measure contributes to two OI’s: "Proportion of foreign researchers in the total number of researchers and engineers in Estonia" and “Proportion of foreign students in Master’s and doctoral studies”. Due to the lack of information here the financial allocation could be distributed as 50%/50% (also taking into account that the number of students is likely to be higher, but researchers are more expensive).

- Having linked financial allocations to output indicators, a further step was then taken to link financial allocations to result indicators. Linkages between output and result indicators (deliverable of the study) should be considered for this step in order to maintain a consistent approach between outputs, results and financial allocations. The procedure can be outlined as follows:
  - Each output indicator already has a financial allocation attributed, and these financial allocations have to be transmitted to the corresponding result indicators (i.e. to the result indicators to which these output indicators are contributing). Corresponding result indicators are identified using previously established linkages between the result and output indicators;
  - Where an output indicator contributes to a single result indicator, the entire financial amount allocated to this output indicator is attributed to the result indicator;
  - Where an output indicator contributes to more than one result indicator, the financial allocation is distributed among such result indicators following the same logic as in the case of the division of the financial amount among output indicators (e.g. 100%/100% distribution, mathematical calculations, expert opinion).

Detailed results on the attribution of financial allocations to output and result indicators were provided in the 1st interim report. In the final report the main financial priorities in each sector/policy area are described in the subsections on financial allocations and the results of the detailed analysis of financial allocations are applied for judgemental impact assessments provided in the study.

2.3. Identification of the main policy objectives, trends and factors external to the OPs

Discussion of the expected CP impacts needs to be placed into the broader context of national and EU level policy objectives in each sector/policy area. In addition to the policy objectives, the main trends should also be considered in order to better appreciate the context within which the CP functions.

National and sectoral experts reviewed the main national and EU level strategic documents respectively and from the wide variety of objectives identified several main policy objectives in each sector/policy area. National and sectoral experts also suggested 1-2 statistical indicators best capturing each of the policy objectives selected and provided values for the indicators for the time period 2007- present (the results were provided with the second interim report). These outcomes were later used to describe the main national and EU level policy objectives in each sector/policy area, to select context indicators and place OPs investments in context.

Additionally, national and sectoral experts provided their opinion on the relevant external factors affecting the attainment of OPs objectives or influencing the development of suggested indicators. The insights provided

were later used in describing the CP impacts on the development of the indicators reflecting the main trends in each sector/policy area.

2.4. Selection of context indicators

The indicators which captured the main policy objectives and trends per sector/policy area in the best way were selected. They were termed "context indicators". These context indicators were used as the main indicators for the in-depth analysis of the main trends and the CP impact in the Baltic States.

Table 3. Context indicators, selected for the main trends and the CP impact analysis

Sector/policy area	Number	Context indicator
RTDI	1	Gross domestic expenditure on R&D (GERD), % of GDP
	2	Business enterprise R&D expenditure (BERD), **%** of GDP
ICT	3	Individuals using the internet for interacting with public authorities
SMEs	4	Real labour productivity per hour worked
	5	Exports of goods and services (as % of GDP)
Energy	6	Total final energy intensity
	7	Share of energy from renewable sources
	8	GHG emissions intensity of energy consumption
Adaptation to climate change		- [3]
Environment and resource efficiency	9	Recycling rate of municipal waste
	10	Sufficiency index (terrestrial sites) of habitats directive
Transport	11	Greenhouse gas emissions from transport
	12	Passenger cars (%) in total inland passenger-km
Employment	13	Total employment rate
	14	Young people neither in employment nor in education and training (15-24 years) - % of the total population in the same age group
Social inclusion	15	Persons at-risk-of-poverty or social exclusion
Health	16	Standardised rate of mortality - All causes of death
	17	Healthy life years
Education, skills and lifelong learning	18	Level of lifelong learning
	19	At least upper secondary educational attainment, age group 20–24
	20	Employment rate (15-64 years of at least upper secondary education)
Institutional capacity of public authorities and administration	21	- [4]

Source: Selected by project team, 2016

In order to determine which indicators could be used as context indicators for a particular sector/policy area the following conditions were taken into account:

- The indicator is not used in the OP[5];
- Availability of longitudinal data for the indicator;

[3] No appropriate indicator was available. The policy area is closely associated with the volume of emitted greenhouse gas. This indicator is used in the Energy and Transport sectors/policy areas. In addition, OPs in the "Adaptation to climate change" sector/policy area are focused on prevention to avoid floods and other natural disasters, but not on activities reducing greenhouse gas emissions.

[4] No appropriate indicator was available. Position in doing business ranking was initially selected as a plausible context indicator. However, after having reconsidered the OPs investments in Institutional capacity of public authorities and administration sector/policy area it became clear that the investments are able to affect only a small share of variables composing doing business index and therefore it would not be appropriate to evaluate the impact of CP investments on this indicator.

[5] The project team searched for context indicators that were not used in the OPs, in some cases however indicators used in the OPs (or very close approximations) were considered as appropriate, particularly where they reflected the expected impact of the CP better than other indicators found in the official statistics.

- Relevance of the indicator as regards the main sector/policy area goals and trends;
- Suitability of the indicator for revealing the expected impact of the OPs investments;
- Existence of a causal relationship between the indicator and result/output indicators;
- Relative independence of external factors affecting its achievement).

The need to compare trends among the Baltic States and between the Baltic States and the EU resulted in the decision that the same indicator (not only the same name, but calculated under the same methodology) should be selected for all three Baltic States and the EU. In practice, this means that they were collected from EUROSTAT.

2.5. Estimation of national budgetary allocations in each sector/policy area

Information on budgetary allocations (from all sources, including EU funding) is available from a variety of sources, namely, information announced by national Ministries of Finance, National statistical offices data, and Eurostat data. As a single methodology should be used to identify national budgetary allocations, Eurostat data were selected as the most suitable information source. This ensured that the same format of initial raw data would be used for all three Baltic States, namely, general government expenditure by function[6].

Eurostat data provided expenditure breakdown by 10 government functions and 69 sub-functions according to the Classification of the Functions of Government (COFOG). A group of Project team experts reviewed each sub-function and made a decision as to whether this sub-function could be matched with some of the sectors/policy areas analysed. Some sub-functions were matched with more than one sector, thus distributing the financial amount of the sub-function between different sectors / policy areas. This was done either in equal shares or based on professional judgement. Some sub-functions were not matched to analysed sectors / policy areas as being not relevant. The government expenditure attribution to the various sectors/policy areas is provided in Annex 3.

Forecasts of national allocations for the programming period 2014-2020 are based on average amount invested annually during previous 2007-2013 programming period, adjusted by growth coefficient[7].

National budgetary allocations per sector/policy area are provided in the sub-section on “Financial allocations” in this report and in Annex 4.

2.6. CP impact assessment

The core of the CP impact assessment exercise was the impact estimations using context indicators. In addition to context indicators other policy indicators viewed as being most relevant to particular sectors/policy areas and overall macroeconomic and production branch indicators are also employed to discuss the main trends in the sectors/policy areas and the expected impacts of the CP.

The major share of the context indicators are modelled via satellite equations[8] of new HERMIN macro-models. The CP impact assessment using macroeconomic modelling is presented in greater detail in the remainder of this section and in the annexes.

Those context indicators deemed not appropriate for macroeconomic modelling are analysed applying mathematical calculations and expert judgement. E.g. in some cases OP’s indicators and selected context

[6] Variable code: [gov_10a_exp].
[7] Growth coefficient reflects expected increase of national budgetary allocations in 2014-2020, in comparison to 2007-2013.
[8] The satellite equations were developed by applying regression analysis.

indicators are highly interrelated, thus achievement of a particular result indicator indicates how the value of the related context indicator may change[9].

The analysis of the linkages between output and result indicators was also applied to discuss the expected impacts of the CP.

Additionally, the role and impacts of the CP in the Baltic States were illustrated by means of 6 case studies – 2 cases per each Baltic State. Three of the case studies were prepared on the basis of the evaluations conducted which delivered robust and reliable results, especially where they employed strong evidence based methods. A further three case studies were based on new research (including interviews) carried out by the project team.

2.6.1. Macroeconomic modelling

In order to carry out the CP impact analysis, three new 16-sector models of the three Baltic States' economies were designed, implemented and adapted to carry out the policy impact analysis: HLT16 for Lithuania; HEE16 for Estonia; and HLV16 for Latvia. These models derived from and were extensions of the system of models previously used by DG-REGIO, namely the Cohesion System of HERMIN Models (CSHM)[10]. The modelling also drew on experience of previous Lithuanian disaggregated modelling exercises[11]. Dr. John Bradley, the main developer of the HERMIN modelling system, was involved with the core team members and performed the main modelling activities.

The earlier DG-REGIO CSHM models of the Baltic States treated production in terms of five disaggregated production sectors or branches: namely, manufacturing (T), market services (M), building & construction (B); agriculture (A); and non-market services (G). The new models - HLT16, HEE16 and HLV16 - contain a more detailed 16-branch level of production disaggregation, treating manufacturing in terms of six sub-branches; market services in terms of four sub-branches; building & construction; mining & quarrying; energy-related activities; agriculture; non-market services; and including a residual category for all other activities.

An economic analysis of the CP normally requires a special classification of expenditure data into appropriate economic categories. When the expenditure of such funds is planned and monitored, the classification is usually set out along what might be termed 'administrative' lines. However, funding that was allocated to different public and private sector organisations for distribution, implementation and monitoring purposes nearly always involves the implementation of investments that have some common economic categorisation. Thus, expenditure on roads, rail, communications and all other types of infrastructure would normally be analysed under the single heading of "physical infrastructure". The separate identification of the commissioning or implementation agency involved with the investment programme may be important from an accounting and monitoring point of view. The actual economic impacts are however the results of the investment expenditure flows during the implementation phase, and of the spillover benefits of (for example) improved physical infrastructure on output and productivity during, as well as after, programme implementation.

Thus, in the model-based analysis total CP investments are classified into three broad economic investment categories: physical infrastructure (PI), human resources/capital (HR), and direct supports given to the enterprise sector (APS). The latter category, APS, is further sub-divided into expenditures related to research and development activities (R&D) and a residual enterprise support category. The main reason for carrying out analysis in terms of these three economic categories is that it allows drawing on a body of academic research findings that assist in understanding how the enhanced 'stocks' of physical infrastructure, human capital and R&D have the potential to generate economic benefits in terms of output and productivity both

[9] E.g. having OP's target an increase in the number of urban transport users it is possible to calculate a likely change in passenger car use (share of passenger cars in total inland passenger-km).

[10] John Bradley and Gerhard Untiedt (2013): "The Extended Cohesion System of HERMIN country and regional models (CSHM-E): Description and Operating manual, Version 5", Contract Number 2011.CE.16.BAT.014, DG-Regional Policy, Brussels, October.

[11] The evaluation of the conditions and changes of the economy sectors in competence of the Ministry of Economy and funded by the EU structural and national funds (commissioned by the Ministry of Economy of the Republic of Lithuania), BGI Consulting in cooperation with John Bradley, 2011.

during programme implementation and long after the CP programme of investment expenditures has terminated (i.e., after any Keynesian or demand-side benefits cease).

In general, the internal structure of HERMIN type models is composed of three main blocks: a supply block, an absorption block and an income distribution block (see the box below). The model functions as an integrated system of equations, with interrelationships between all their sub-components.

The HERMIN Modelling Scheme

Supply aspects

Manufacturing Branches (mainly tradable goods)

Output = f_1(World Demand, Domestic Demand, Competitiveness, t)
Employment = f_2(Output, Relative Factor Price Ratio, t)
Investment = f_3(Output, Relative Factor Price Ratio, t)
Capital Stock = Investment + (1-δ) Capital Stock$_{t-1}$
*Output Price = f_4(World Price * Exchange Rate, Unit Labour Costs)*
Wage Rate = f_5(Output Price, Tax Wedge, Unemployment, Productivity)
Competitiveness = National/World Output Prices

Building and Construction, Mining & Quarrying and Energy branches (mainly non-tradable)

Output = f_6(Total Investment in Construction)
Employment = f_7(Output, Relative Factor Price Ratio, t)
Investment = f_8(Output, Relative Factor Price Ratio, t)
Capital Stock = Investment + (1-δ)Capital Stock$_{t-1}$
Output Price = Mark-Up On Unit Labour Costs
Wage Inflation = Manufacturing Sector Wage Inflation

Market Service Branches (mainly non-tradable)

Output = f_6(Domestic Demand, World Demand)
Employment = f_7(Output, Relative Factor Price Ratio, t)
Investment = f_8(Output, Relative Factor Price Ratio, t)
Capital Stock = Investment + (1-δ)Capital Stock$_{t-1}$
Output Price = Mark-Up On Unit Labour Costs
Wage Inflation = Manufacturing Sector Wage Inflation

Agriculture and Non-Market Services: mainly exogenous and/or instrumental

Demographics and Labour Supply

Population Growth = f_9(Natural Growth, Migration)
Labour Force = f_{10}(Population, Labour Force Participation Rate)
Unemployment = Labour Force – Total Employment
Migration = f_{11}(Relative expected wage)

Demand (absorption) aspects

Consumption = f_{12}(Personal Disposable Income)
Domestic Demand = Private and Public Consumption + Investment + Stock changes
Net Trade Surplus = Total Output - Domestic Demand

Income distribution aspects

Expenditure prices = f_{13}(Output prices, Import prices, Indirect tax rates))
Income = Total Output
Personal Disposable Income = Income + Transfers - Direct Taxes
Current Account = Net Trade Surplus + Net Factor Income From Abroad
*Public Sector Borrowing = Public Expenditure - Tax Rate * Tax Base*
Public Sector Debt = (1 + Interest Rate) Debt$_{t-1}$ + Public Sector Borrowing

Key Exogenous Variables

External: World output and prices; exchange rates; interest rates

Domestic: Public expenditure; tax rates.

Source: Project team, 2016.

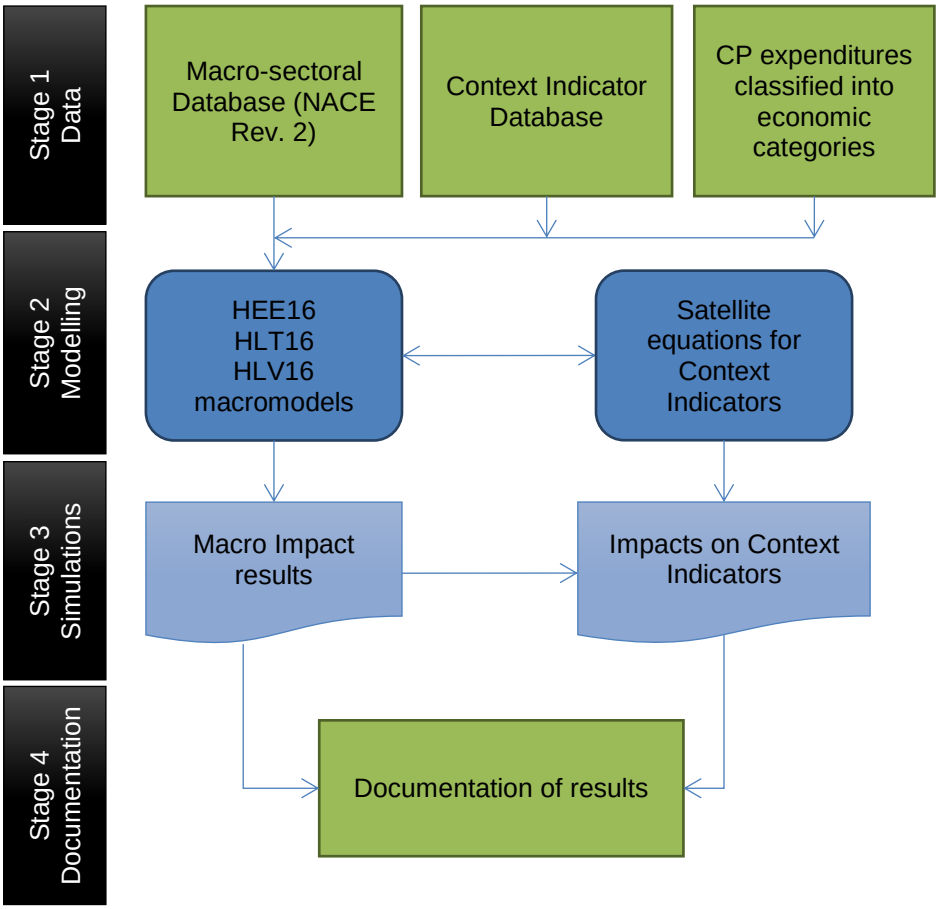
An outline of the CP impact analysis system

The four stages of the impact evaluation system are as follows:

- database construction;
- model construction and testing;
- model simulations; and
- results documentation.

These stages are illustrated schematically (Figure 2).

Figure 2. CP impact analysis – Schematic Overview



Source: Project team, 2016.

Stage 1: Databases

Stage 1 requires the construction of three separate databases for each of the three economies. The most complex is the database of the macro-sectoral variables that are then incorporated into the formal structures of the HLT16, HEE16 and HLV16 models. For the three new Baltic State models the latest NACE Rev. 2 data were used[12]. In order to construct this database, data was drawn from the most up to date AMECO database of DG-ECFIN; the national accounting data published by EUROSTAT (mainly for the production branch disaggregation); and national CSO sources where data were not available from EC sources. It should

[12] The earlier Lithuanian HERLIT16 model used the older NACE Rev. 1.1 data classification.

be noted that the NACE Rev 2 data are only available from the year 2000, so the historical sample of annual data used in our modelling exercise covers the period 2000-2014, i.e., fifteen annual observations.

The constructed database includes all the necessary data reflecting supply aspects (productive branches data), demographics and labour supply data, demand (absorption) aspects, income distribution aspects, key exogenous variables (e.g. world output and prices).

It was not possible (nor, indeed, would it be desirable) to model at the full level of available NACE Rev. 2 data disaggregation since the number of enterprises in each branch would tend to be too small to generate stable and predictable outcomes. In addition, not all fully disaggregated NACE Rev. 2 branch data are available for each state. As a compromise, the data were aggregated into sixteen production branches (Annex 5).

The second database for each model consists of data for a selection of context indicators collected for the historical period 2000-2014. In all, 21 context indicators were analysed, however, some proved impossible to model in terms of their underlying macroeconomic drivers. Full details are set out in Annex 6.

The third database for each model consists of the planned CP investment expenditures, disaggregated into three main economic categories:

- Physical infrastructure
- Human resources/capital, and
- Direct support of enterprise sectors (with R&D support separately identified).

The CP expenditures in these three categories are distributed over the years 2014-2023, using the published CP planning data. The CP expenditures encompass EU funding and do not include national public or private financing.

Stage 2: Modelling

In order to carry out the CP impact evaluation, three new models were constructed (HLT16 for Lithuania; HEE16 for Estonia; and HLV16 for Latvia), and equations developed for each that linked the context indicators to the relevant macroeconomic performance indicator. There is no theoretical difference between the manner of modelling the output, expenditure and income sides of the three models and the manner in which the context indicators were modelled. The strict economic theory upon which the three models are based relates to output-expenditure-income modelling, where it was drawn on standard economic theory to guide in structuring the model. The specific modelling presumptions (e. g., the values of spillovers or externalities which arise from investments and serve to stimulate growth) are the same for all three Baltic States. There are no compelling reasons to make such assumptions different. Consequently, the impacts modelled only differ between the three Baltic States for the following reasons: 1) different values in respect of the CP expenditures (and particularly, different percentages of such expenditure in GDP), and 2) different parameters and elasticities among economic variables, as revealed by the econometric analysis of the national accounts data.

Baseline projection (the "no-CP" scenario) derived using the new models is described in Annex 7.

The macroeconomic model of each Baltic State was supplemented with satellite equations allowing for the modelling of the impact of CP interventions on most of the context indicators. The approach taken to incorporate the context indicators is more empirical. With respect to incorporating the context indicators into the modelling framework, each indicator was linked to the most appropriate variables contained in the basic 'economic' structure of the model. For example, GERD (gross domestic expenditure on R&D) is linked to aggregate GDP per capita to capture how growth induced by the CP programmes is likely to incentivise firms to invest in R&D. Such linkages permit an examination of the following counterfactual: how would the context

indicators perform in the presence of the CP programmes, compared to the case where the CP programmes were absent?

Full details of the modelling of CP impacts on the context indicators are set out in Annex 6.

Stage 3: Policy simulations

In order to be able to examine the CP impacts on the branch structure used in the three models, as well as on the expenditure and income side of the models, one has to incorporate mechanisms into the model structure that relate the CP investment expenditures to their impacts on the economy. These mechanisms have two main components:

- The impact of the CP investment expenditures during the implementation of the CP programmes. These 'demand-side' impacts include the impacts on public finances (due to receipt of the EC contribution) as well as the Keynesian multiplier impacts due to increases in public expenditure. These 'transitional' or 'implementational' impacts fall off quickly when the CP programme terminates at the end of 2015.
- The supply-side impacts of the CP investment expenditures due to the output and productivity spillovers associated with improvements in the stock of physical infrastructure, human capital and R&D.

The models can be used to construct policy counter-factual scenarios, i.e., by simulating the "no-CP" scenario[13], followed by a "with-CP" scenario. Comparing these two scenarios permits us to estimate the likely impact on the economy of the CP investments. Thus, the CP impact is presented as a change due to OPs investments over the baseline level.

Annex 8 explains the approach to modelling the CP impact in greater detail.

Stage 4: Documentation of results

In the final stage of the analysis, the simulation output from the models is documented and interpreted. Great care is required in placing these impacts in their proper context. For example, the aim is to examine the impacts of the 2014-2020 budget programme period in isolation from earlier programmes for the Baltic States (i.e., those operating during the years 2004-2006 and 2007-2013). In addition, there is a need to terminate the CP expenditures at the end of the year 2023 with no subsequent or continuing CP programme assumed to be in place. Both of these assumptions are somewhat artificial, so care is required in order to understand the exact external constraints imposed on the impact evaluation.

Modelling results are discussed in the relevant sections of the report and summarised in Annex 9.

2.6.2. Linkage assessment between output and result indicators

The linkages between each output and its related result indicator in each specific objective were assessed according to a three-value scale. Depending on the type of linkage between output and result indicators, compliance was assessed as either absent, partial or full:

- **Absent linkage** between the output indicator and the result indicator means that the envisaged outputs are not expected to impact the attainment of the results either directly or indirectly.
- **Partial linkage** between the output indicator and the result indicator means that the envisaged outputs may impact the attainment of the results albeit indirectly.

[13] The "no-CP" simulation and the "with-CP" simulation covered 2002-2030 period.

- **Full linkage** of the output indicator to the result indicator means that the envisaged outputs may directly impact the attainment of the results.

To determine the type of linkage, sector/policy area experts used information in the relevant documents (OPs, indicator passports, ex-ante evaluations, etc.,) as well as other necessary instruments (advice from various Ministries and historical analysis of indicator development etc.). Sectoral experts provided justifications for every assessment on the particular type of linkage. Where the linkage was assessed as 'absent', sector/policy area experts additionally indicated whether this was due to a technical or a planning issue. A technical issue was deemed a plausible conclusion where several output indicators, which according to the OP could contribute to several result indicators, contributed instead to only one result indicator and was not connected with the others. A planning issue was deemed plausible where the output indicator, which according to the OP could be linked with several result indicators, was not connected with any of the result indicators.

However, it is important to note that the planning issue does not mean that the planning of the financial investments was poor. Output indicators are meant to reflect the investments contributing to the intended changes expressed as a specific objective under a given investment priority. To represent and measure the progress towards the attainment of the intended results or specific objectives result indicators are chosen. Nevertheless, result indicators are only variables that provide information on some specific aspects of results that lend themselves to be measured. Therefore, as long as the output indicator does contribute to the overall specific objective it does not need to be linked to particular result indicators as it could be contributing to an immeasurable part of the intended results.

Attention must be paid also to the fact that the compatibility between output indicators and specific objectives was not evaluated carrying out a linkage assessment exercise. Therefore, an absence of the linkage due to planning reasons only means that the output indicator is not contributing to any of the result indicators in the OP. However, the outcomes of the linkage assessment exercise do not provide any information on the quality of the planning of financial investments.

After having identified the linkage, the next step was to assess the extent to which the output indicators' values achieved would contribute to the attainment of the target values of result indicators. The extent to which this occurred was assessed using a three-value scale. Compliance was assessed as either low, medium, high or as having no contribution (where no linkage between output and result indicator could be determined).

The contribution was assessed as **high** where the target value of the output indicator fully or partially contributed to the result indicator. Where this is achieved it will contribute to the attainment of the target value of the result indicator by 50–100 percent.

The contribution was assessed as **medium** where the target value of the output indicator fully or partially contributed to the result indicator. Where this is achieved it will contribute to the attainment of the target value of the result indicator by 25–50 percent.

The contribution was assessed as low where the target value of the output indicator fully or partially contributed to the result indicator. Where this is achieved it will contribute to the attainment of the target value of the result indicator by 0–25 percent.

Sector/policy area experts commented on their decisions with regard to the extent of the contribution.

Several quality control measures were applied to ensure the quality of the assessments. The assessment of the type of linkage and the extent of the contribution recorded by the sector/policy area experts was reviewed by the national experts in a national context. In order to check the validity of the assessments national experts employed national documents such as ex-ante assessments of the OPs, indicator passport data (provided by DG REGIO) etc., as well as other information sources such as communications with the responsible Ministries. National experts paid particular attention to cases which sector/policy area experts had indicated that they were not entirely sure about the type of linkage or the extent of the contribution between output and result indicators or where they required additional information, available only in the

national language(s) (e.g. documents in national languages, call to Ministries etc.). The comments made by the national experts were then taken into consideration by the sector/policy area experts in providing the final assessments.

The project team produced an overall review of the databases and summarised the results under each sector/policy area assigning an overall value to each group of SPOs according to a five-value scale (low, low-medium, medium, medium-high, high). The summary tables, descriptions and the databases of the linkages were provided in the first interim report. In this report the results of the analysis under each sector/policy area are provided in the sub-sections “The CP impact on other OP objectives”.

In order to have a full picture and to be able to compare the different sectors/policy areas in each of the three Baltic States in terms of the extent of CP contribution, a final grouping of sectors/policy areas according to the above-mentioned five-value scale was made. This was done by calculating the average assessment for the sector/policy area of the values assigned to each group of SPOs. The results of this exercise and the groupings of different sectors/policy areas are provided in section 3.13.1 of this report, “CP contribution to attaining the targeted results of the OP”.

3. RESULTS OF THE ANALYSIS

3.1. RTDI sector/policy area

3.1.1. EU and national policy objectives and CP interventions

In the research, technology, development and innovation (RTDI) sector/policy area the Europe 2020 strategy pursuing a priority to ensure 'smart growth' sets a headline target proposing that 3 percent of the EU's GDP (public and private combined) is invested in R&D/innovation. Its flagship initiative "Innovation Union" also aims to: improve the framework conditions and access to finance for research and innovation so as to strengthen the innovation chain and boost levels of investment throughout the EU, strengthen the knowledge base and reduce fragmentation, promote excellence in education and skills development, deliver the European Research Area, focus EU funding instruments on Innovation Union priorities, create a single innovation market as well as promote openness and capitalise on Europe's creative potentials.

In line with the EU objectives, all three Baltic States had set out national goals under the Europe 2020 framework. The **Estonian** national target in the RTDI sector/policy area reflects that set on an EU-wide basis and aims to increase the level of investments in R&D to 3 percent of GDP. However, Lithuanian and Latvian national targets are more modest. **Lithuania** aims to increase its level of investment in R&D to 1.9 percent of GDP while the **Latvian** national target is to increase investment in R&D to 1.5 percent of GDP.

Additional national objectives in the RTDI sector/policy area are set in all three Baltic States. **Estonia** aims to ensure that its research is of a high level and is diverse, that R&D functions in the interests of its society and economy as well as making the structure of the economy more knowledge-intensive, and that Estonia is both active and visible in international RDI cooperation[14]. The main objectives set in the **Lithuanian** strategic documents aim to develop a high value-added, integral economy by promoting networks of value creation that are globally-oriented and designed to promote the sustainable development of individuals and society in order to amplify competitiveness, enable innovation, develop studies and implement R&D[15]. These objectives are envisioned as being attained by promoting business productivity and developing innovative business as well as developing new knowledge while creating the conditions for the integration of science, business and culture. **Latvian** national objectives cover the need to ensure the international competitiveness of colleges and universities by employing internationally recognised and qualified academic staff, increasing the number of people employed in science and research, developing a framework for efficient cooperation between scientists and entrepreneurs, and concentrating Latvian science in research institutes that are competitive globally[16].

CSR 2016 for each of the Baltic States emphasise some aspects of RTDI sector/policy area as well. All three **Baltic States** are expected to encourage private investments in RTDI by strengthening cooperation between academia and businesses as well as by developing alternative means of financing. **Latvia** is additionally expected to pursue the consolidation of research institutions while it is recommended that **Lithuania** take measures in order to strengthen productivity and improve the adoption and absorption of new technology across the economy as well as to improve the coordination of innovation policies.

The CP investments are targeting analogous objectives in the RTDI sector/policy area. The main objectives of the OPs of all three Baltic States are grouped according to their thematic similarity (

Table **4**).

[14] For example in The Estonian Research, Development and Innovation Strategy 2014-2020 "Knowledge-based Estonia" and other

[15] For example in National Progress Programme 2014-2020, National Smart Specialisation Strategy, National programme of studies, scientific research and Experimental (social, cultural) development 2013-2020 and other

[16] For example in The National Development Plan of Latvia for 2014-2020, the National Reform Programme of Latvia for the Implementation of the "Europe 2020" Strategy, Guidelines for Science, Technology Development and Innovation 2014-2020 and other

Table 4. Specific objectives of RTDI sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Research and innovation capacity	R&D is of a high level, and Estonia is active and visible in international RDI cooperation	Promoting more active use of the existing and new research, development and innovation infrastructure	Improve research and innovation capacity and the ability of Latvian research institutions to attract external funding, by investing in human capital and infrastructure
RTDI activities in the private sector	The RD&I makes the structure of the economy more knowledge-intensive and addresses societal challenges	Increasing the intensiveness of research, development and innovation activities in the private sector	To increase investments of private sector in R&D
	Innovative solutions increase resource productivity of enterprises	Increasing the extent of knowledge commercialisation and technology transfer	
	Estonian enterprises offer innovative products and services with high value-added		

Source: OPs information and aggregation by project team, 2016

Investments of **all thee OPs** are mainly focused on increasing research and innovation capacity and encouraging the development of RTDI activities in the private sector. **Lithuania** and **Latvia** are expecting to increase their research and innovation capacity by investments in infrastructure and human capital while **Estonia** is focused mainly on increasing its activity and visibility in international RDI cooperation. In order to promote RTDI activities in the private sector all three **Baltic States** aim to increase private sector investment in R&D. **Lithuania** and **Estonia** are additionally concerned with increasing knowledge commercialisation and resource productivity.

Furthermore, it is important to note that the development of RTDI and attainment of the objectives in this sector/policy area will be also fuelled by the activities carried out under SMEs sector/policy area. The activities financed under SMEs sector/policy area targeted at increasing SMEs' productivity and export. Development of eco-innovations will encompass strengthening of SMEs' innovation capacity, thus, contributing to the development of RTDI and RTDI activities in the private sector.

Financial allocations

In financial terms, the **Baltic States** prioritise the RTDI sector/policy area. The largest share of financial allocations among all sectors/policy areas is dedicated to it in **Estonia**, the fourth largest in **Lithuania** and **Latvia**. However, **Estonia** considers the RTDI sector/policy area to be a much greater financial priority than other two Baltic States. The EU funding per capita in the RTDI sector/policy area is twice as high in **Estonia** as it is in Lithuania and Latvia. In terms of CP funding in comparison to total national investments the ratio is highest in **Latvia** revealing that in comparison to the other Baltic States it is more reliant on CP funding than on national investments in promoting the development of the RTDI sector/policy area.

Table 5. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the RTDI sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	642.3	1762.5	489	1342	36%
Lithuania	638.1	1973.1	218	663	33%
Latvia	467.5	621.4	235	313	75%

Source: Project team calculations based on sources indicated in methodology section, 2016

The distribution of financial allocations to attainment of the various objectives within the sector/policy area does not differ significantly among the **Baltic States**. The largest share of investments in **Estonia** (65 %) and **Lithuania** (43 %) is dedicated to increasing private sector investment in R&D. Investments aiming to increase the private sector contribution to R&D development will be mainly distributed as grants to enterprises in both countries. In **Latvia** the largest share (34.5%) of all investments is dedicated to increasing the scientific productivity of research personnel, a significant share (29.7%) of investments is also attributed to increasing the level of private investment in R&D. A large share of investments in **Estonia** is also dedicated to increasing the innovativeness of enterprises and making the structure of the economy more knowledge-intensive, while in **Lithuania** a large share of financial allocations is invested in upgrading the open-access RDI infrastructure and promoting its use.

3.1.2. Main trends and expected impacts of the CP

Two indicators reflecting the main EU and national goals, as well as a large share of CP investments in all three Baltic States, were selected as context indicators. One reflects **total intramural R&D expenditure (GERD) as a percentage of GDP** while the other reflects **business enterprise R&D expenditure (BERD) as a percentage of GDP**. These indicators are also an integral part of the Innovation Union Scoreboard indicators, representing the overall public and private compound effort in the RTDI sector in a monetised form. The **innovation index** published by the Innovation Union Scoreboard was selected as an additional indicator to supplement the analysis.

This **innovation index** takes into account developments in various RTDI-related fields, represents the inputs and outputs of the innovation system and, therefore, is a good reflection of the sector as a whole. The index value on its own however does not effectively show the success of the Baltic States relative to the EU countries. As such, it is more valuable to analyse the change in the position of the Baltic States in the Innovation Union Scoreboard among the EU countries. However, despite it being a suitable indicator in terms of reflecting the main trends in the RTDI sector/policy area the innovation index was not selected as a context indicator. Even though it can provide valuable insights into the relative success of the country in the innovation field, due to its complexity CP investments can only affect a relatively small (and mainly only the input) part of the index components and therefore the analysis of the impact of CP investments on the aforementioned indicator would not be accurate.

In terms of the innovation index **Estonia** was the highest rated among the Baltic States during the period 2007-2014 (Table 6). While **Lithuania** and **Latvia** occupy the lowest positions among the EU countries, **Estonia** stands somewhere in the middle. Despite their differing positions among the EU countries in 2014 both **Lithuania** and **Estonia** were nevertheless in the moderate innovators group while **Latvia**, according to the Innovation Union Scoreboard report, was placed in the modest innovators group.

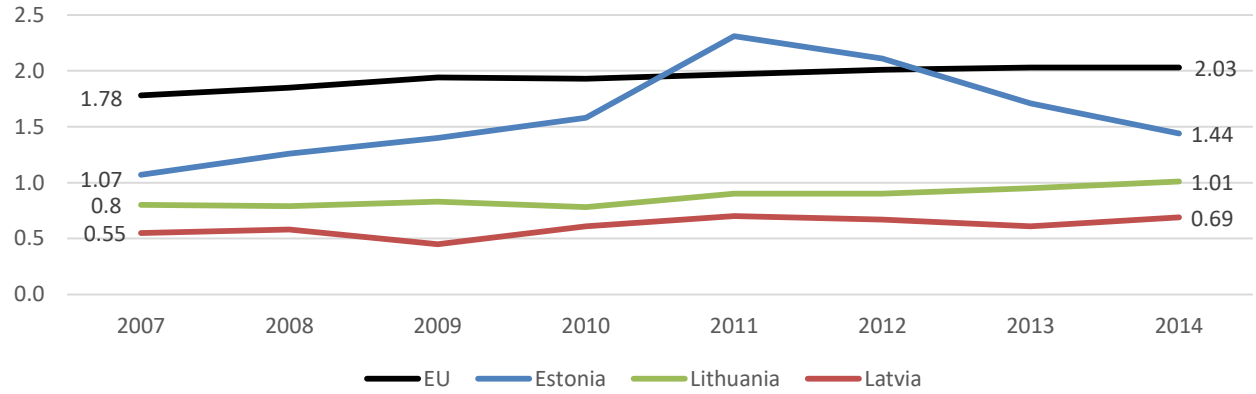
Table 6. Position of the Baltic States in the EU Innovation Union Scoreboard (among the EU countries)

Baltic State	2007	2008	2009	2010	2011	2012	2013	2014
Estonia	14	14	14	14	14	14	13	13
Lithuania	25	26	26	26	26	25	25	25
Latvia	27	27	27	28	28	26	27	26

Source: Innovation Union Scoreboard data, 2015

Estonia's relative success in terms of the Innovation Union Scoreboard is due, in part, to its investments in R&D measured as a percentage of GDP. **Total intramural R&D expenditure as percentage of GDP** was highest among the Baltic States grouping in **Estonia** (Figure 3). Despite the non-uniform GERD development and constant decrease in 2011-2014, the overall value of it has increased by 0.37 percentage points since 2007 in Estonia. In **Lithuania** and **Latvia** overall increases in GERD were significantly smaller equating to 0.21 and 0.14 percentage point increases respectively. However, despite a smaller overall increase of GERD, it saw a constant upward trajectory in both Lithuania and Latvia during the whole period analysed.

Figure 3. Total intramural R&D expenditure (GERD), percentage of GDP in Baltic States and EU



Source: Eurostat, 2016

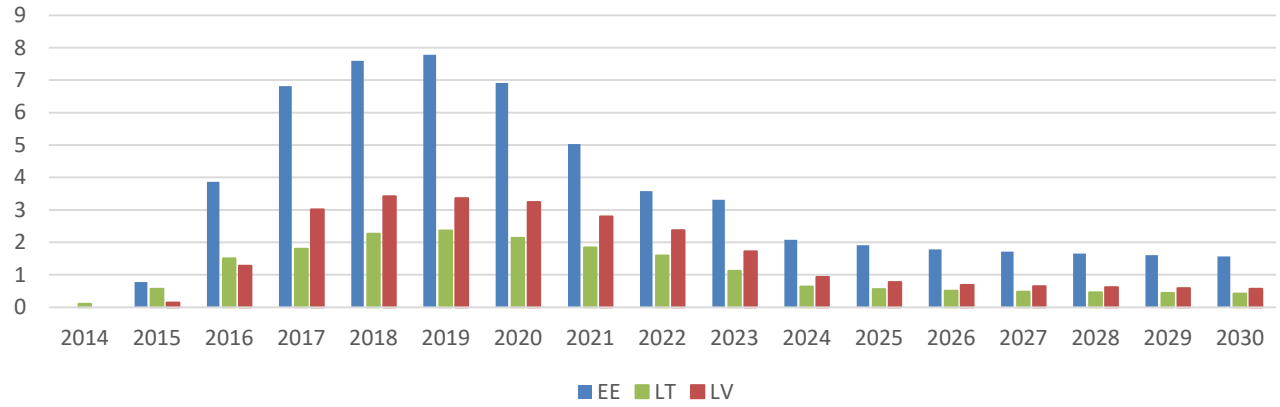
The level of GERD is affected by a large set of variables that include but is not limited to CP investments. Other RTDI system variables embody a legal framework, a set of public institutions, science and research institutions, business entities, sophisticated policy schemes and various interconnections enabling its performance. Summing the expected CP impact and other trends (using satellite equations of macroeconomic modelling) it is estimated that GERD in 2023 should be highest in **Estonia** and equal to around 2.4 percent, lowest in **Latvia** and equal to around 0.8 percentage of GDP. **Lithuania** should stand somewhere in the middle with GERD equal to 1.2 percentage of GDP.

Taking into account these estimations it seems likely that none of the three Baltic States will have attained their Europe 2020 national targets in 2023. This apparent 'failure' should however be viewed in relation to the ambitiousness of the national targets set. The overall increase in GERD in 2014-2023 should be equal to around 1 percentage point in **Estonia** and 0.2 percentage points in **Latvia** surpassing the increase seen in 2007-2014 while in **Lithuania** the overall increase in GERD will remain similar to the 2007-2014 period. At the end of the 2014-2023 period **Estonia** will most likely be closest to the EU wide Europe 2020 target while the **Latvian** share of GDP invested in RTDI activities will be the lowest among the Baltic States. The largest contribution, in terms of CP investments, to the development of GERD will also be felt in **Estonia**. Should the overall increase in average EU indicator value in 2014-2023 be similar to that seen during the period 2007-

2014 which equalled to 0.25 percentage points, the **Estonian** indicator value in 2023 would be close to or even surpass the EU average.

Macroeconomic modelling shows that CP investments should have a significant impact on the development of GERD in all three Baltic States. The CP impact on GERD (Figure 4) is expected to be highest in **Estonia** and should peak in 2019, when GERD as a percentage of GDP will be higher[17] by 7.79 percent due to OP investments. In **Lithuania** and **Latvia** the GERD peaks at 2.37 percent in 2019, and 3.42 percent in 2018 respectively. During the period 2014-2023, when the OPs will be implemented, the annual impact of the investments is expected to average out to 4.57 percent in **Estonia**, 1.53 percent in **Lithuania** and 2.14 percent in **Latvia**. The average annual impacts after the OPs completion in 2023 up to 2030 are also highest in **Estonia** (1.76 percent), while in **Lithuania** and **Latvia** the GERD as a percentage of GDP will be increased by 0.5 percent and 0.7 percent respectively.

Figure 4. CP impact on total intramural R&D expenditure (GERD) as a percentage of GDP, percent

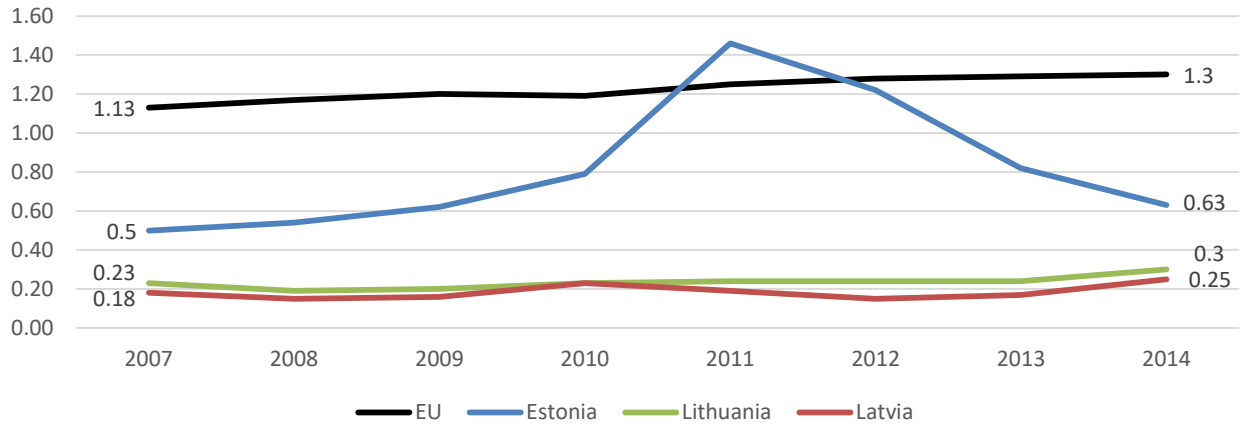


Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The GERD is largely affected by the share of **business enterprise R&D expenditure**. The increase in private sector R&D expenditure is therefore set as one of the main objectives of all three Baltic States OPs. The development of the indicator measuring BERD (Figure 5) is similar to that measuring GERD. Business enterprise investments in R&D where higher in **Estonia** than in its Baltic neighbours during the whole period analysed. However, as in the case of GERD, the level of BERD in Estonia fluctuated significantly. Nevertheless, the overall value of the indicator has increased by 0.13 percentage points since 2007. **Lithuania** and **Latvia** on the other hand saw an increase over the whole 2007-2014 period. The overall increase in BERD was smaller in Lithuania and Latvia than in Estonia and equalled to 0.07 percentage points in both countries.

[17] In comparison to the same year in the baseline scenario without OP interventions

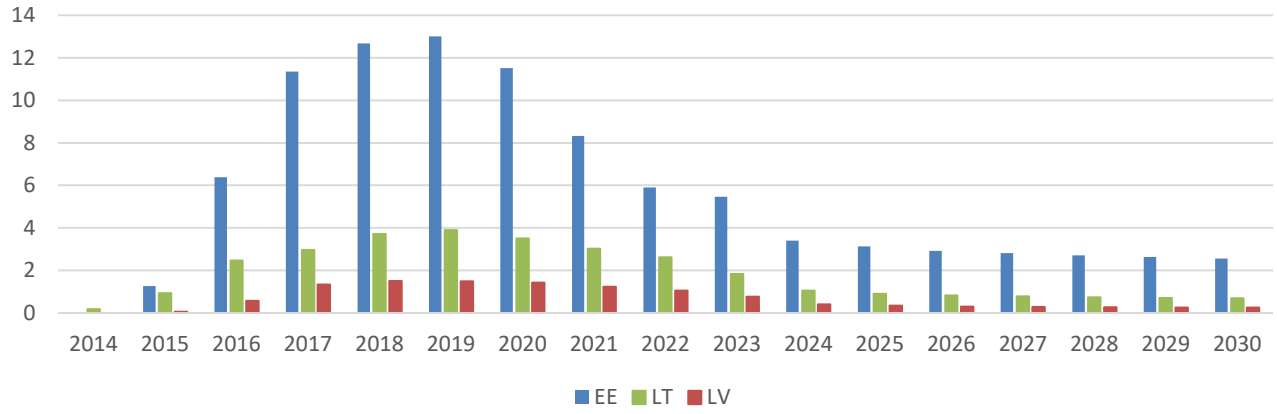
Figure 5. Business enterprise R&D expenditure (BERD), percentage of GDP in Baltic States and EU



Source: Eurostat, 2016

Macroeconomic modelling has shown the significant impact of CP investments on the development of BERD. The impact of CP investments on BERD is highest in **Estonia** and peaks at 13 percent in 2019, while in **Lithuania** and **Latvia** CP impact on BERD peaks at 3.9 percent in 2019, and 1.51 percent in 2018 respectively. During the OP implementation, the CP annual impact averages out to 7.59 percent in **Estonia**, 2.52 percent in **Lithuania** and 0.95 percent in **Latvia**. The impacts after OP termination become lower: in the period 2023-2030 the average impact of the OP investments is expected to be around 2.9 percent in **Estonia**, 0.8 percent in **Lithuania** and 0.3 percent in **Latvia** annually.

Figure 6. CP impact on business enterprise R&D expenditure (BERD) as a percentage of GDP, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Summing the expected CP impact and other trends (using satellite equations of macroeconomic modelling) it is also estimated that BERD in 2023 should be equal to around 1.5 percent in **Estonia**, 0.4 percent in **Lithuania** and 0.3 percent in **Latvia**.

The analysis of the impact of CP investments on BERD as well as the estimations of indicator value in 2023 has shown that the CP impact, as well as the level of BERD in 2023, will be significantly higher in **Estonia** than in the other Baltic States. The overall increase in BERD (0.87 percentage points) in 2014-2023 in Estonia should also be significantly higher than in 2007-2014 (0.13 percentage points). **Lithuania** will also see a higher increase equal to 0.1 percentage points in overall indicator value in 2014-2023 than in 2007-

2014. However, the CP impact on the development of BERD as well as its overall increase in 2014-2023 compared to 2007-2014 will be lowest in **Latvia**.

In order to understand the underlying causes of the relative **Estonian** success in the RTDI field, two case studies providing a detailed explanation of the likely CP impact on BERD in **Estonia** and **Lithuania** in the period 2014-2020 were carried out. The case studies provided below reveal the differences in the expected CP impact in Estonia and Lithuania as well as the main reasons for the differing impact of CP investments.

CP investments in the RTDI sector/policy area in Estonia

The RTDI-targeted investments in Estonia in the 2014-2020 programming period take up more than 624 million EUR of CP support. A total of 157.7 million EUR are allocated to the specific objective of making the structure of the Estonian economy more knowledge-intensive and addressing broad societal challenges. Additionally, 85 million EUR are dedicated to the SPO aiming to ensure that Estonian enterprises offer innovative products and services with high value-added. The case study focuses on the abovementioned two specific objectives. The policy aims at encouraging the private sector to invest in R&D, cooperate on innovation with universities and R&D institutions and address the challenges faced by society.

Three result indicators were chosen to monitor the progress towards these goals:

a. Proportion of private sector R&D expenditure (% of GDP) (baseline 1.26% in 2012, target 2% in 2023);
b. Share of surveyed enterprises having cooperation on innovation with universities or other higher education institutions (baseline 4.2% in 2012, target 6.8% in 2023);
c. Sales revenue from new or significantly changed products or services (baseline 9.8% in 2010, target 20% in 2023).

The first result indicator was also selected as a context indicator for the study, since all three Baltic States OPs made a large effort to support the level of BERD. And the BERD is a part of EU 2020 target indicator covering all types of investments in R&D/innovation and another context indicator – GERD. The second result indicator represents one of the desirable conditions in generating the BERD – cooperation between businesses and universities or higher education institutions. This cooperation should be transmitted into an increased level of BERD at least in the longer term. The third result indicator represents the outcome of BERD and innovation activity. An increased level of BERD is expected to be transmitted into sales revenue growth from new or significantly changed products or services. The scope of the changes targeted by the result indicators is largest for sales revenue, which points to the R&D potential to increase the level of sales at a higher rate than the R&D expenditure increases. The OP targeted the value of BERD as a percentage of GDP is likely to be too optimistic and the forecasts developed via macroeconomic modelling and the satellite equations suggest that 1.5 percent is a more probable level of attainment up to 2023. Although the development of BERD and related OP result indicators is highly dependent on private initiative and other external factors outside the control of the OP, the CP will nevertheless play a significant role in supporting the transition to a higher level of innovations.

In order to describe the likely impact of these investments, two interviews were carried out with the Ministry of Economic Affairs and Communication (MEAC) and Enterprise Estonia (an agency disbursing grants). The interviews focused on the expected results and a wider economic impact of the relevant RDTI policy measures in the 2014-2020 period. Both interviewees underlined that the measures supported by CP investments are oriented towards a long-term perspective in order to create sustainable results. Therefore, the actual results of the measures implemented today will only become evident in some years from now. For example, in the product development, the average product life cycle from the idea to launching the product is 4-6 years depending on the sector and field of activity.

Considering the attainment of goals set for 2023, it should be noted that according to the Mid-term evaluation of the growth strategy by the MEAC (2015), progress regarding private sector R&D expenditure (% of GDP) and sales revenue from new or significantly changed products or services has been modest (2014 targets 11.63% and 11.4% respectively, actual attainment 0.83% and 7.8%). According to the ministry, it is expected that the progress will be accelerated by implementing the measures aimed at increasing the share of enterprises involved in RTDI activities - the innovation voucher scheme, development voucher scheme, enterprise development programme, clusters programme, and technology competence centres programme. This is based on experience from the previous, 2007-2013 programming period, where similar investments succeeded in establishing links and cooperation between R&D institutions and enterprises (the number of cooperation projects increased from 194 in 2010 to 398 in 2013).

While in the 2007-2013 programming period the main focus of RTDI investments was on modernising the research

environment and enhancing the quality of research, in the 2014-2020 programming period it is on improving cooperation between knowledge institutions and the business sector, applying the results of joint initiatives and making the economy more knowledge intensive. A good example of measures developed to achieve this objective is the innovation voucher scheme. Implemented in 2009, the scheme succeeded in significantly increasing the number of contracts of research providers – 111 service providers were involved in more than 1300 projects in total. An analysis of the innovation scheme in 2007-2013 found that 50 percent of the surveyed enterprises continued cooperation with the research provider after the end of the programme. According to the Mid-term evaluation of the Estonian Business and Innovation Policy in 2014[18], the enterprises that had received R&D support found that the support helped to create jobs (100% of respondents), including higher-than-average-value added jobs (60%); introduce new or significantly changed products or services to the market (75%), and commercialise products (71%). Growth has also been aided by the fact that cooperation between enterprises and universities has become functional and universities are now more successful in selling their knowledge.

According to an expert at the MEAC, responsible for the analysis of the innovation voucher scheme, the scheme was successful due to good planning and implementation. The key success factor, however, is the design of the measure that allows for a wide range of knowledge institutions to apply for funding. Alongside universities, higher education and research institutions, the list of service providers includes patent agencies, engineering companies, technology development centres, test laboratories and certifying centres. The analysis of the scheme confirmed that enterprises both need and use the services of other innovation service providers. Another potentially successful idea to recommend is that of thematic innovation vouchers, though they are perhaps more suited to the needs of the larger EU member states than to those of Estonia.

The results of the analysis of the innovation voucher scheme were used to improve the design of the scheme for the 2014-2020 period. The improvements included the requirement of 20 percent own contribution and introducing a follow-up programme to provide for continued cooperation on innovative solutions and product development. As a result, in addition to the improved innovation voucher programme, a development voucher programme was introduced in the 2014-2020 programming period. The share of self-financing in both programmes also contributes to higher private sector R&D expenditure.

Enterprise Estonia notes that RDTI policy measures and programmes in 2014-2020 draw on previous experience and have been designed to have a long-term and stronger combined effect. This is well illustrated by a new comprehensive Enterprise Development Programme, which is aimed at growth via strategic planning and product development activities. The programme includes different types of support for the different development stages of the enterprise to strengthen research, technological development and innovation in accordance with development needs and endogenous growth potential.

In conclusion, as the share of supported enterprises is relatively small in comparison with the overall economy, it is difficult to estimate the wider impact of the policy measures on the Estonian economy. However, an increased focus on areas where cooperation between businesses and knowledge institutions has the greatest potential to create added value and on enterprises that have the greatest impact on growth is expected to lead to the growth of the Estonian economy and to the attainment of the policy objectives. In addition, enhanced coordination of activities and cooperation between the responsible authorities is recommended in order to create sustainable results.

Source: the case study was developed by the project team based on desk research and interviews[19], 2016

CP investments in RTDI sector/policy area in Lithuania

The amount of CP investments targeted at the RTDI sector/policy area in Lithuania equates to around 638 million EUR. Around 277 million EUR or 43.4 percent of the RTDI investments allocated to the attainment of the SPO aiming to increase the intensiveness of research, development and innovation activities in the private sector. The policy aims to encourage the private sector to invest in R&D and to provide incentives for innovative enterprises to cooperate with partners.

Two result indicators were chosen to monitor the progress towards these goals:

[18] Mid-term evaluations of Estonian business and innovation policy 2014, Ministry of Economic Affairs and Communications
[19] Interview partners:
Karel Lember, analyst, Economic Development Department, Ministry of Economy and Communications;
Tea Danilov, director, Entrepreneurship and Export Centre, Enterprise Estonia;
Kaie Nurmik, expert, Economic Development Department, Ministry of Economy and Communications

a. R&D expenditure per capita in the business sector (baseline 24.1 EUR, target 60.7 EUR in 2023);
b. Share of innovative enterprises cooperating with partners in the total number of innovation-related enterprises (baseline 9.79%, target 12.79% in 2023).

The OP result indicator R&D expenditure per capita in business sector is another way of measuring BERD as compared to the context indicator BERD as percentage of GDP. However the result indicator defined as per capita is highly dependent on a constant decrease in the Lithuanian population. Presuming the same nominal R&D expenditure as in the baseline year and the same pace of population shrinkage as that over the last five years, up to 2023 the BERD per capita increases by 16.9 percent to around 28 EUR. Despite the demographic impact the target value is clearly too optimistic. The second result indicator reflects the aim of strengthening cooperation in terms of innovative enterprises which is one of the ways to facilitate innovation networking and the growth of BERD. Lithuania aims to increase the value of the result indicator by reasonable 0.25 percentage point each year, reaching the 12.79 value by 2022 or 2023.

Both of these targets (expressed as result indicators) contribute to a wider goal – the national Lithuanian objective of achieving 1.9 per cent of gross R&D expenditure by the year 2020, where business share should also constitute a substantial fraction. However, according to a study carried out in Lithuania in 2011[20] the development of the indicator and the policy impetus may not be sufficient in itself to attain the target goal. Calculations have shown that gross R&D expenditure in Lithuania could, at best, reach 1.35 per cent of GDP by 2020, with that figure being based on the assumption that the RTDI programmes funded by the structural funds will be effective both in the private and public sectors. The calculations carried out in the current study has also shown that total intramural R&D expenditure should only be around 1.2 percent and that business enterprise expenditure should equate to only around 0.4 percent in 2023.

In order to better understand the reasons behind this relatively poor Lithuanian performance in terms of increasing R&D expenditure, two interviews were carried out. The interviewees – a representative of the Ministry of Economy of Lithuania and a representative of the Lithuanian Aerospace Association, who has also been involved in innovative business for two decades – noted that the OPs investments in the Lithuanian RTDI sector do not differ significantly from those of other countries and are generally well planned. There are however a number of other specific reasons that do not allow the CP investments in Lithuania to have a significant impact on the development of the abovementioned indicators.

According to the representative from the Ministry of Economy of Lithuania, the poor level of Lithuanian performance is generally caused by the fragmentation of its overall innovation policy and issues related to the effectiveness of the innovation system. More particularly, one of the key obstacles to improving the performance of the R&D and innovation system and, business R&D performance in particular, is the legal regulation of the innovation system, which could be characterised as having an imposed dichotomy between public and business R&D and innovation systems and funding schemes, leading to the underperformance of the later. In addition, the legalistic approach to R&D and the innovation system and its inertia has failed to keep pace with the development of the RTDI policy framework and with the needs of business entities. This can be illustrated by reference to the institutionalisation of academic perception in terms of the key notions of RTDI policy, which do not always fit broader business needs or even restrain enterprises from RTDI expenditure. On the other hand, the aforementioned national regulation has led to the situation where the development component of the RTDI policy is generally overlooked and underfinanced. The general improvement of Lithuania's RTDI system performance (incl. business R&D expenditure) could be attained if not only the volume of funds is increased but, simultaneously, a reform of the legal framework of the system is carried out and an inclusive (business friendly) innovation culture is built.

According to the interviewee representing the Lithuanian Aerospace Association, the primary reason that Lithuanian businesses are reluctant to invest in R&D and innovation is the specific mainstream culture of strategic business planning leading to a short-term business cycle where research, development and innovation activities, because of their duration in terms of return of investment, cannot play a meaningful part. The relatively low level of business enterprise expenditure on R&D in Lithuania is also determined by the country's traditional economic structure and its predominantly small sized businesses, which do not generally tend to opt for R&D as a primary way of boosting competitiveness. Typically, companies introduce commercially available technologies or aim to fit into the value chain of bigger international manufacturers. Moreover, the business & innovation support system, mainly funded by the structural funds, is not sufficiently adapted to the needs of local businesses as there are still innovation-cycle gaps in the funding schemes. In order to fit the cohesion policy for the increase in business innovativeness there should be

[20] BGI Consulting, Ltd., *Evaluation of Lithuanian effective participation in European Research Area: the study of potential of private sector investments in RTDI and its promotion measures*, commissioned by Lithuanian Ministry of Foreign Affairs

several strategic directions adopted and decisions made. The tolerance of risk and likely failure of supported innovative business should be developed, a more holistic approach to the innovation cycle should also be introduced by placing greater emphasis on, and investing funds in, the territorially concentrated innovation eco-systems which should incorporate the start-up enterprise community, risk capital, R&D centres and public funding. Finally, measures that are directed towards raising the overall level of entrepreneurship, risk acceptance and the de-bureaucratisation of innovation schemes could be a good start in terms of changing Lithuania's approach to the area of RTDI and, subsequently, increasing business R&D expenditure.

To sum up, several recommendations could be brought up regarding the RTDI policy in Lithuania. Firstly, the current innovation system must be substantially reformed, including the rethinking of the artificial R&D delineation between public research institutions and businesses, and the de-academisation of R&D legal regulation and its perception in the minds of the general public, thus empowering enterprises to incorporate R&D into their daily routines. Secondly, the private sector itself has to adopt long-term strategic thinking and, in the long run, progress toward innovation-based competitiveness. The latter provisions may also be supported by the schemes promoting entrepreneurship, R&D, internationalisation and the overall innovation culture in Lithuania.

Source: the case study was developed by the project team based on desk research and interviews[21], 2016

The CP impact on other OP objectives

In addition to charting the impact of CP investments on GERD as well as BERD, an assessment of the extent of the contribution made by CP investments to the attainment of other Baltic States objectives in the RTDI sector/policy area was also carried out.

The additional objective set in the **Estonian** OP aims to ensure that R&D is of a high level and that Estonia is active and visible in international RDI cooperation by increasing the proportion of public sector R&D expenditure financed by the private sector and ensuring Estonia's success in Horizon 2020. However, the extent of the contribution of CP investments to the attainment of this objective will be only low to medium. That is because most of the activities financed will strengthen the supply side of the R&D sector (e.g. investments supporting researchers working in the improved research infrastructure facilities, support for foreign researchers working in Estonia) which is only one of the preconditions, in terms of increasing the proportion of public sector R&D expenditure financed by the private sector. Attaining this target also however requires the promotion of the demand side[22] and even though some of the activities financed by the CP will be directed towards strengthening it, the number of outputs created will not be enough to have a significant effect on the increase in the proportion of public sector R&D expenditure financed by the private sector. Similarly, while most of the activities related to promotion of Estonia's success in the Horizon 2020 will increase the capacity of research institutions to participate in the Horizon 2020 Framework Programme by increasing the overall number of researchers these investments are not targeted at increasing the capacity and willingness of those researchers to participate in the abovementioned Framework Programme. It is also worth noting here that the capacity of other countries to participate in this Framework is, given the ongoing CP investments as well as other reasons, constantly increasing. As such, Estonia's success depends not only on its own efforts but also on its relative capacity, in comparison with other countries.

Lithuania additionally aims to promote more active use of the existing and new research, development and innovation infrastructure as well as to increase the extent of knowledge commercialisation and technology

[21] Interview partners involved representatives from the Ministry of Economy of the Republic of Lithuania and Lithuanian Aerospace Association

[22] The RTDI demand side is all the subjects that have an intention to use RTDI products. Mostly they are business entities but could also be public institutions. The demand side could be promoted by direct and indirect policy measures. The former include targeted subsidising of R&D to be undertaken at company level (that may involve different R&D phases). Additionally, policy makers may also opt for governmental R&D orders to facilitate the needs of the public and/or defence sectors. The indirect measures involve the overall creation of an innovation culture, innovation ecosystems and the promotion of entrepreneurship. This could also encompass improvement of the legal framework for R&D and innovation, attracting FDI with a high R&D potential, instituting innovative procurement options. It is also important to ensure that these measures are in line with the current development stage of the national economy and should facilitate the ongoing needs of the enterprises involved.

transfer. The extent of the contribution made by the CP investments to the promotion of the more active use of the existing and new research, development and innovation infrastructure is however expected to be low. The actions envisioned for support, namely a certain number of researchers and researchers from the private sector supported in their use of the improved RDI infrastructure, is a necessary but not a sufficient condition in terms of attaining the abovementioned target. Support for researchers to use the improved RDI infrastructure can be seen as one of the necessary preconditions to strengthen the RDI supply side, as well as science and business collaboration. However, these activities alone will only partially and then only to a low extent contribute to the more active use of the existing and new RDI infrastructure by external users from the private sector. Support for researchers from the private sector, however, will directly affect the attainment of the aforementioned target. Nevertheless, the number of researchers supported will not be sufficient to have a significant impact on increasing the use of the existing and new research, development and innovation infrastructure.

Progress towards attaining the goal of increasing the extent of knowledge commercialisation and technology transfer will be measured by the share of higher education R&D expenditure funded by economic entities as a share of total expenditure. The attainment of this target will be directly affected by the investments supporting a certain number of enterprises to cooperate with research institutions. However, the number of enterprises supported for this purpose will only be sufficient to affect the attainment of the abovementioned target to a medium extent. Nevertheless, general support for enterprises and for higher education institutions for the submission of patent applications will also partially contribute to increasing share of higher education R&D expenditure funded by economic entities as a share of total expenditure. General support for enterprises is expected to boost their innovation capacity and to eventually result in the funding of higher education R&D expenditure, while the patent applications of higher education institutions submitted are expected to result in business expenditure for licensing the patented R&D results.

The **Latvian** objective, specific only to the Latvian OP is to improve its research and innovation capacity and the ability of Latvian research institutions to attract external funding by investing in human capital and infrastructure. This objective is expected to be attained by increasing the amount of external funding attracted by the state and higher education sector for research work. The extent of the contribution made by CP investments to the attainment of this target is however assessed to be low. This is mainly due to two reasons. The outputs that are aimed at increasing the external funding of state and higher education research work by private enterprises focuses too much on the strengthening of the supply side of the RTDI sector (e.g. increasing the number of researchers). Not enough activities are funded to promote the demand side of the RTDI system and when such activities are carried out the number of outputs is not sufficient to have a significant impact on the attainment of the abovementioned target. Similarly, activities aiming to increase the external funding of state and higher education research work from other sources (e.g. Framework Programme Horizon 2020, CP investments) do not create enough outputs to promote significant change in respect of the aforementioned target.

A substantial share of the activities financed by the CP will also affect the attainment of the target reflecting the abovementioned objective and measuring the average number of scientific publications per one full time equivalent of research personnel (per year). However, the number of outputs created by these activities will not be sufficient to create a higher than medium extent value for the contribution of the CP investments to the attainment of the abovementioned target.

3.1.3. Conclusions

The level of attainment in the RTDI sector/policy area differs among the Baltic States. **Estonia** significantly outperforms its Baltic neighbours. While **Lithuania** and **Latvia** occupy the lowest positions among the EU countries in the Innovation Union Scoreboard ranking, **Estonia** stands somewhere in the middle. Despite this, however, the main goals of all three Baltic States in the RTDI sector/policy area are rather similar. All three **Baltic States** aim to ensure that their research is of a high level and competitive globally, that R&D functions in the interests of their society and economy making the later more knowledge-intensive and thus amplifying their competitiveness, enabling innovation and ensuring the sustainable development of society.

In order to attain these goals and in line with the EU 2020 priority to ensure 'smart growth' by investing 3 percent of the EU's GDP in R&D/innovation all three Baltic States have set national targets aiming to increase investments in R&D to 3 percent, 1.9 percent and 1.5 percent of GDP in **Estonia**, **Lithuania** and **Latvia** respectively.

In the period 2007-2014 all three Baltic States were progressing towards their national goals. The GERD as a percentage of GDP was highest as well as growing fastest in **Estonia** increasing by 0.37 percentage points during the period while in **Lithuania** and **Latvia** the increase was significantly smaller and equated to 0.21 and 0.14 percentage points respectively. Similar patterns of development were also observed in respect of BERD.

To further support progress during the 2014-2020 programing period all three Baltic States set aside a sizeable share of overall CP funds for the development of the RTDI sector/policy area. **Estonia** dedicated more than 642 million EUR of EU funding to this area (the largest share of financial allocations among all sectors/policy areas) while **Lithuania** plans to invest more than 638 million EUR and **Latvia** more than 467 million EUR of CP funding. In **Lithuania** and **Latvia** the RTDI sector/policy area receives the fourth largest share of financial allocations among all sectors/policy areas. Investments of all thee OPs in 2014-2020 are mainly focused on increasing research and innovation capacity and encouraging the development of RTDI activities in the private sector. **Estonia** has not only dedicated the highest total amount of CP investments to the sector/policy area but its funding per capita is also twice as high as in **Lithuania** and **Latvia** revealing that **Estonia** considers the RTDI sector to be a much greater financial priority than do the other two Baltic States. The share of CP funding in comparison to total national investments is equal to around 40 percent in **Estonia** and 30 percent in **Lithuania** while in **Latvia** it is almost 70 percent revealing that in comparison to the other Baltic States Latvia relies more on CP funding than on national investments in the promotion of the development of the RTDI sector/policy area.

Despite the differing financial allocations to the sector/policy area the impact of CP investments on GERD is expected to be significant and contribute to reducing the gaps between all three Baltic States and the other EU countries. The impact of CP investments is expected to be the highest in **Estonia** - due to the investments planned the GERD level will, on average, be higher by 4.57 percent annually during the OP implementation period. The annual CP impact during the implementation period in **Lithuania** and **Latvia** equates to 1.53 percent and 2.14 percent respectively. Summing the expected CP impact and other trends it is also estimated that the GERD, as a percentage of GDP in 2023, should be highest in **Estonia** and equal to around 2.4 percent, lowest in **Latvia** and equal to around 0.8 percent. **Lithuania** is forecast to stand somewhere in the middle with R&D expenditure equal to around 1.2 percent. Taking into account these estimations it seems likely that none of the **three Baltic States** will have attained their Europe 2020 national targets in 2023. This apparent 'failure' should however be viewed in relation to the ambitiousness of the national targets set. The overall increase in GERD should be higher in **Estonia** and **Latvia** in 2014-2020 than in 2007-2014 while in **Lithuania** it is forecast to remain somewhat similar. At the end of the 2014-2023 period **Estonia** will most likely be closest to the EU wide Europe 2020 target and EU average while the **Latvian** share of GDP invested in RTDI activities will likely be the lowest among the Baltic States.

The impact of the CP investments on BERD is expected to follow a similar pattern. During the OP implementation period the highest impact of CP investments is expected to be felt in **Estonia** and will be equal to 7.59 percent annually while in **Lithuania** and **Latvia** the annual CP impact will be equal to 2.52 percent and 0.95 percent further influencing the differences in RTDI sector/policy area development among the Baltic States.

The CP impact on other OP objectives is expected to be medium in **Lithuania** and **Latvia** and low-medium in **Estonia**. The relatively low impact of CP investments on other OP objectives can primarily be explained by the ambitious planning of the target values of the result indicators and the concentration of investments on increasing the supply side while the expected result is mostly to strengthen the demand side of the RTDI system.

3.2. ICT sector/policy area

3.2.1. EU and national policy objectives and CP interventions

The Europe 2020 flagship initiative "A digital agenda for Europe" sets out the main goal in the ICT sector/policy area – to speed up the roll-out of high-speed internet and reap the benefits of a digital single market for households and firms. This is envisioned to be attained by: achieving the digital single market, enhancing interoperability and standards, strengthening online trust and security, promoting fast and ultra-fast internet access for all, investing in research and innovation, promoting digital literacy, skills and inclusion as well as delivering ICT-enabled benefits for EU society.

Similar policy objectives aiming to create a well-functioning environment and modern ICT infrastructure meeting today's requirements for the widespread use and development of smart ICT solutions, resulting in increased economic competitiveness, the well-being of the populace and the efficiency of public administration can be found in national strategic documents of all three **Baltic States**[23]. Other objectives set in the various national strategic documents cover the improvement of the ICT capabilities and skills of residents to promote better life quality and more jobs with higher added value, the development of online content and the promotion of its usage, the assurance of broad access to high-speed internet, the promotion of electronic democracy and of ICT sector innovation and competitiveness and the creation of a sufficient number of well trained professionals for the ICT sector.

CSR 2016 does not provide any recommendations specific to the ICT sector/policy area to any of the Baltic States. Nevertheless, in Country Report **Latvia** 2016 it is noted that Latvia falls into the cluster of low-performing countries in terms of the digitisation of the economy and as regards the Integration of Digital Technology by business dimension Latvia is the worst performing country in the EU. The slow digitalisation of the economy is reflected in the relatively slow growth of ICT jobs – the number of ICT specialists has increased at a slower pace than the EU on average and Latvia has a lower share of ICT specialists than the EU average. The usage of *e*-government is also below the EU average in Latvia. Therefore, Latvia is expected to now tackle these issues in the ICT sector/policy area. Country Report **Lithuania** 2016 points out certain shortcomings in the Lithuanian ICT sector/policy area as well. It is noted that the coverage and availability of high-speed broadband connections are good in Lithuania, but the take-up is poor. Moreover, *e*-commerce trading activities are underdeveloped and Lithuania therefore needs to make better use of past investments in ICT hardware.

Table 7. Specific objectives of ICT sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Accessibility to broadband and high-speed internet	Whole population of Estonia has access to high-speed Internet	Increasing the availability and use of broadband electronic communication networks in areas where the market is not able to ensure the development of next generation access infrastructure and the provision of services	To improve accessibility of the electronic communication infrastructure in rural areas
Development of electronic public administration services and reuse of public sector information	The basic service infrastructure supports the take up of e-services in Estonia and cross-border	Increasing the efficiency of the protection of state information infrastructure and resources	To ensure increase in the re-use of public data and efficient interaction of the public administration and the private sector
		Increasing the reuse of public sector information for business and public needs	
		Increasing the demand for ICT among the population	
		Increasing the accessibility and quality of public and administrative services	

Source: OPs information and aggregation by project team, 2016

[23] For example in Estonian Digital Agenda 2020 (Estonia), the National Progress Programme 2014-2020 (Lithuania), Lithuania's information society development programme for 2011-2019 (Lithuania), the National Development Plan of Latvia for 2014-2020 (Latvia), Information Society Development Guidelines 2014-2020 (Latvia), the Economic Development of Latvia (Latvia) and other

CP investments target analogous objectives in the ICT sector/policy area. The main OP objectives in all three Baltic States are grouped according to their thematic similarity (Table 7).

Investments in **all three OPs** are mainly focused on increasing accessibility to broadband and high-speed internet, especially in rural areas and in respect of developing electronic public administration services as well as promoting the reuse of public sector information. While **Lithuania** and **Latvia** however place great emphasis on increasing the accessibility of broadband internet, **Estonia** is mainly concerned with ensuring that it is provided via a high speed connection. Similarly, while all three **Baltic States** aim to develop electronic public administrative services and encourage their use. **Lithuania** and **Latvia** place more emphasis on increasing the reuse of public sector information. **Lithuania** additionally aims to increase the efficiency of the protection of the state information infrastructure and resources while neither Estonia nor Latvia sets it as an objective for CP investments.

Financial allocations

In terms of CP financial allocations the ICT sector/policy belongs to the group attracting the least in terms of financing – 11th in **Estonia** and 9th in both **Lithuania** and **Latvia** out of 12 sectors/policy areas in total. Even though the highest total amount of CP investments is dedicated to the ICT sector/policy area in **Lithuania**, EU funding per capita is highest in **Latvia**. **Latvia** also has the highest ratio of CP funding in comparison to total national investments indicating the importance of CP financial allocations for the development of the ICT sector/policy area.

Table 8. Indicative CP financial allocations from the 2014-2020 OP and national investments (forecast for 2014-2020) in the ICT sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	84.6	375.2	64	286	23%
Lithuania	229.4	725.2	79	248	32%
Latvia	172.8	207.5	87	104	83%

Source: Project team calculations based on sources indicated in methodology section, 2016

The distribution[24] of financial allocations to the attainment of various objectives within the sector/policy area does not differ significantly among the Baltic States. In **Estonia**, the largest share (almost 93%) of investments is related to the improvement of the basic service infrastructure supporting the take up of e-services countrywide and cross-border. A significantly smaller share (around 51%) is dedicated to increasing the share of connections at speeds of 100 Mbp/s or more from all permanent internet connections[25]. In **Lithuania** and **Latvia** the largest share of investments is dedicated to increasing the quality and accessibility of public and administrative services. Almost 50 percent of all investments are devoted to increasing the share of the population using electronic public and administrative services in **Lithuania**. In **Latvia** more than 74 percent are dedicated to ensuring the increase in the re-use of public data and the efficient interaction of the public administration and the private sector.

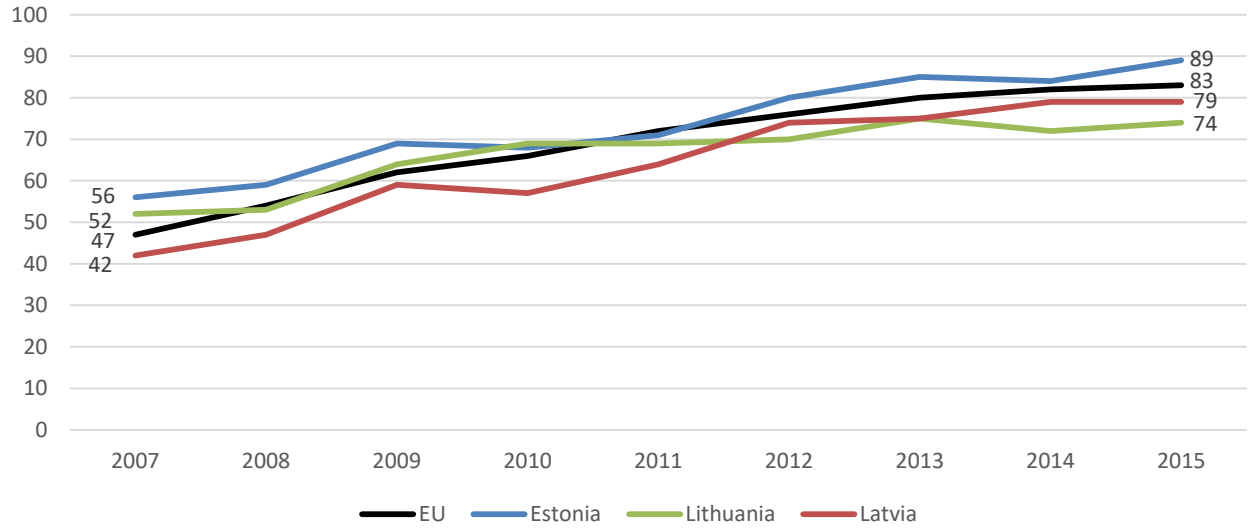
[24] Numbers exceeding 100 percent indicate that there are cases when the same financial allocations are expected to simultaneously contribute to several policy objectives.

3.2.2. Main trends and expected impacts of the CP

An indicator reflecting CP investments as well as national and EU strategic policy objectives - **the share of individuals using the internet to interact with the public authorities** - due to its importance for all three Baltic States was selected as a context indicator for the sector/policy area. Additionally, **the share of households with a broadband internet connection type** and particularly in sparsely populated areas is considered.

The **share of households having access to a broadband internet connection** (Figure 7) was increasing in all three **Baltic States** as well as on average in EU during the period of 2007-2015. The largest increase was seen in **Latvia** and amounted to 37 percentage points while in **Lithuania** it was the smallest as the share of those having access to broadband internet has increased by 22 percentage points. **Estonia** kept its leading position and within less than a decade access to a broadband internet connection from 56 percent grew to 89 percent – a level that continues to exceed the EU average.

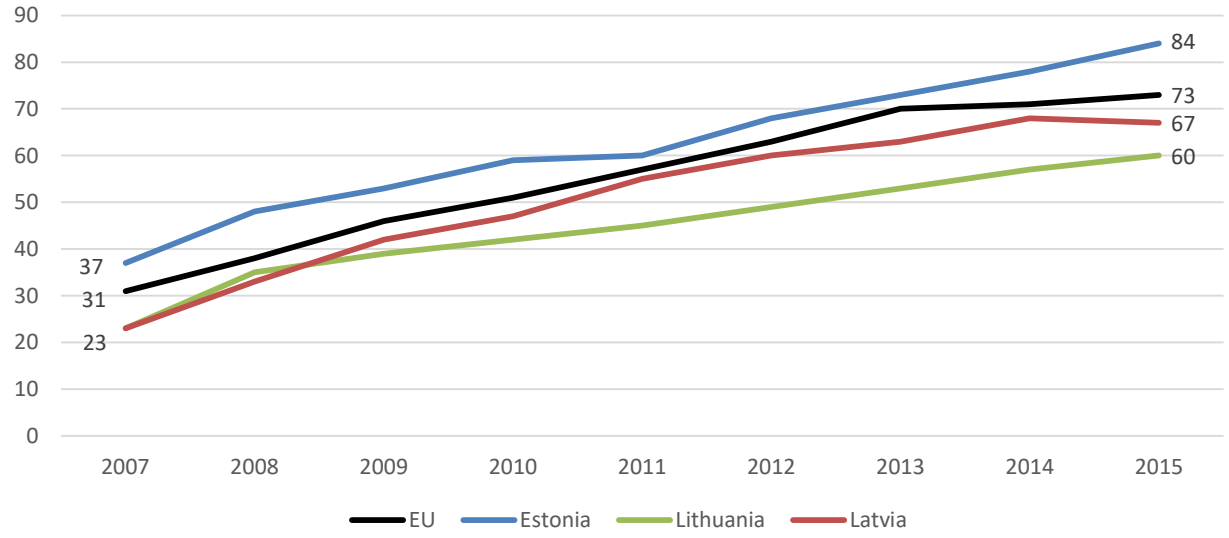
Figure 7. Share of households with broadband internet connection type in Baltic States and EU



Source: Eurostat, 2016

The **share of households with a broadband internet connection type particularly in sparsely populated areas** is a good reflection of one of the main trends in the ICT sector/policy area. The dynamics of the availability of the broadband internet connection type in these areas followed a similar pattern as that of overall accessibility, but the scope of change within less than a decade was even more sizeable revealing the results of policy focus on the areas of concern. **Estonia** experienced the largest increase equating to 47 percentage points. The increase in the share of households with a broadband internet connection type in sparsely populated areas in **Lithuania** and **Latvia** was around 37 percentage points and 44 percentage points respectively. The highest level of access to broadband internet in sparsely populated areas is attained in **Estonia** surpassing the EU average by more than 10 percentage points.

Figure 8. Share of households with a broadband internet connection type (sparsely populated areas) in Baltic States and EU



Source: Eurostat, 2016

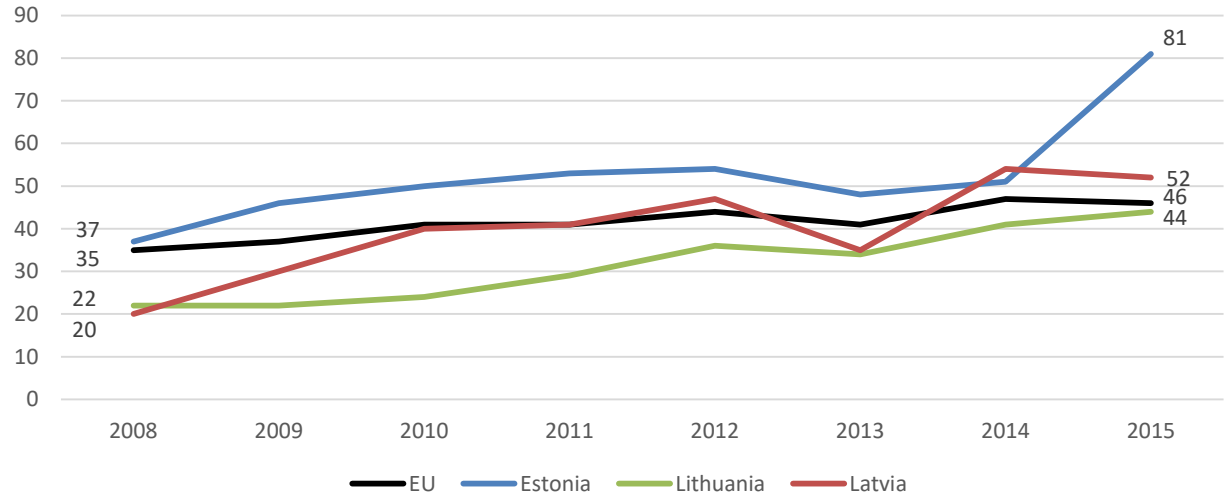
Due to the differing availability of broadband internet access only **Lithuania** and **Latvia** regard the increase in coverage of broadband internet as a priority for CP investments while **Estonia** aims to ensure its high speed.

CP investments in **Lithuania** and **Latvia** are targeted at increasing the share of households with access to broadband internet of at least 30 Mbp/s rate. The CP contribution to the attainment of this objective is expected to be high in both countries. Furthermore, if the implementation of the projects funded by the CP is successful there should be 206 000 households in rural areas with access to broadband internet in **Latvia** out of 228 500 households in these areas in total**,** while 100 percent of households should have access to broadband internet in **Lithuania** by the end of the 2014-2020 programming period.

As the coverage of broadband internet is no longer an issue in **Estonia**, its OP focuses more on increasing the data transfer speed. If the use of OP investments is successful, there should be 3500 km of next generation broadband network (allowing it to reach the internet speed of 100 Mbp/s) constructed in Estonia by the end of the 2014-2020 programming period.

In terms of the **share of individuals using the internet to interact with the public authorities** the trend was not uniform among the **Baltic States**. While in **Lithuania** the share of persons using the internet for this purpose has been constantly growing, in **Latvia** the trend fluctuated to a far greater extent. Nevertheless, the overall increase in the indicator value during 2008-2015 was equal to 22 percentage points in **Lithuania** and 32 percentage points in **Latvia**. The greatest improvement with a jump in 2015 was attained in **Estonia** and equated to 44 percentage points. However the change in the value of 2015 was related to the changes in the questionnaire of the survey applied to assess the indicator.

Figure 9. Share of individuals using the internet to interact with the public authorities in the Baltic States and the EU



Source: Eurostat, 2016

Usage of the internet to interact with the public authorities is expected to be increased by using CP investments in **Lithuania** and **Latvia**. In **Lithuania**, internet usage for this purpose is expected to be promoted by increasing the overall demand for ICT among the population and increasing the accessibility and quality of public and administrative services. The actions envisioned for support cover the involvement of local communities in the network of activities promoting the more effective, safer and responsible use of the internet, the creation of electronic services, implementation of solutions for optimisation, interoperability and the safety of the public sector's information and communications technology infrastructure of common use. However, despite provisioned actions the expected contribution of CP investments to the attainment of the abovementioned objective will only be assessed at a low to medium. The outputs created by the CP investments will contribute to the attainment of the abovementioned objective. However, they will not be sufficient to have a significant impact. In **Latvia** the usage of the internet to interact with the public authorities is expected to be promoted by increasing the share of people using *e*-services, increasing the share of entrepreneurs using *e*-services and increasing the value of the average index of re-use of public sector information. The actions envisioned for support cover the improvement of operational processes and the implementation of centralised open platforms of information systems. Nevertheless, the extent of the contribution made by CP interventions to the attainment of the abovementioned objective is expected to be rather modest. While the CP interventions will directly and to a high extent contribute to the increase in the re-use of public sector information, such interventions will have a direct but only limited effect on the expected increase in the share of people in general, and entrepreneurs in particular, using public administration *e*-services. This is because the CP investments are mostly directed towards strengthening the supply side in terms of public administration *e*-services. Even though supply side strengthening is a necessary precondition for the general population and entrepreneurs to use it, these activities will not directly result in increased demand for such services and, therefore, in an increased share of people using them.

In **Estonia**, internet usage for this purpose is expected to be further promoted by increasing the number of secure electronic identity (ID card, mobile ID, etc.) users and increasing the number of *e*-services that the Estonian administration has released using the XRoad infrastructure. The actions envisioned for support cover the implementation of innovative development projects and the introduction of new cross border services based on the creation of a basic infrastructure for services. The extent of the contribution made by CP investments to the attainment of the abovementioned objective will likely be twofold. CP interventions are expected directly - and significantly - affect the increase in the *e*-services that the Estonian administration has released using the XRoad infrastructure. CP investments are however expected to directly - but only to a medium extent - affect the increase in the number of secure electronic identity users. Even though the

activities financed by the CP, namely innovative development projects and new cross border public services based on the creation of a basic infrastructure for services, will directly affect the number of such users, the number of outputs created will not be sufficient to impact this number to anything greater than a medium extent.

The CP impact on other OP objectives

In addition, **Lithuania** also has an objective to increase the efficiency of the protection of state information infrastructure and resources as well as to promote the reuse of public sector information for business and public needs. The CP investments' contribution to the attainment of this objective is expected to be low. Even though the measures envisaged are likely to influence their attainment, they will not be enough to have a significant effect on the attainment of the target value.

3.2.3. Conclusions

In this ICT sector/policy area **Estonia** has a clear lead among the Baltic States. Broadband internet coverage was significantly higher and the share of individuals using the internet to interact with public authorities was also better in Estonia than in either Lithuania or Latvia. However, despite their differing level of attainment the national strategic documents of all three **Baltic States** encompass rather similar goals. All three are concerned with developing a modern ICT infrastructure and increasing the availability of high-speed internet as well as promoting usage of ICT in public administration in order to increase its efficiency, foster economic competitiveness and the well-being of the populace.

In 2007-2015 all three **Baltic States** were progressing towards their goals. The share of households with a broadband internet connection type in the Baltic States has grown by 22-37 percentage points and the availability of broadband internet in sparsely populated areas meanwhile increased even more sizeably – by 37-47 percentage points. Constant increase in the share of individuals using the internet to interact with the public authorities was also observed in all three countries during the whole period analysed.

To support further progress in the 2014-2020 programming period **Lithuania** has planned to invest more than 229 million EUR, while **Latvia** and **Estonia** have attributed to this area almost 173 million EUR and 87 million EUR respectively. In terms of CP financial allocations per capita and the ratio of CP funding in comparison to total national financial allocations, these two indicators are highest in Latvia revealing that major progress in the ICT sector/policy area in Latvia is associated with CP investments.

The main objectives to be attained under the OPs do not differ significantly among the Baltic States. **All three countries** are mainly concerned with increasing accessibility to broadband and high-speed internet as well as developing the electronic public administration services and encouraging the reuse of public sector information. **Latvia** and **Lithuania** place more emphasis on increasing the availability of broadband internet especially in rural areas while **Estonia** is mainly concerned with the speed of the internet, since broadband internet coverage is already very high. Considering the **Baltic States'** efforts to develop electronic public services and encourage their use, **Lithuania** and **Latvia** place more emphasis on the reuse of public sector information. **Lithuania** in addition aims to increase the security of state information infrastructure and resources.

The impact of CP investments on increasing accessibility to broadband internet in **Lithuania** and **Latvia** is expected to be high. Furthermore, in **Latvia,** CP interventions should increase the share of households in rural areas having access to broadband internet to more than 90 percent; while in **Lithuania** 100 percent of households are envisaged to have access to broadband internet by the end of the 2014-2020 programming period. Similarly, CP investments are expected to significantly affect the increase in the data transfer speed in **Estonia** - 3500 km of next generation broadband network (allowing it to reach the internet speed of 100 Mbp/s) are expected to be constructed in Estonia.

However, the impact of CP investments on increasing the share of people using the internet to interact with the public authorities is expected to be only low to medium in **Lithuania** and medium in **Latvia**. The number of measures planned to be implemented in **Lithuania** were assessed as not sufficient to have a full-scale impact in terms of the value of the result indicator. In **Latvia** the CP interventions are expected to have a direct and high contribution to the increase in the re-use of public sector information. Nevertheless, the CP investments were assessed as having a limited effect on the expected increase in the share of people in general, and entrepreneurs in particular, using public administration *e*-services mainly due to concentration on the supply side in terms of the *e*-services and to the high dependence on the demand side behaviour.

In the case of the **Estonian** OP, interventions are expected to significantly affect an increase in *e*-services that the Estonian administration has released using the XRoad infrastructure. However the impact of the CP investments on the number of secure electronic identity users is expected to be medium, since the outputs foreseen are not expected be sufficient to impact the target to anything greater than a medium extent.

3.3. SMEs sector/policy area

3.3.1. EU and national policy objectives and CP interventions

EU policy for the SMEs sector/policy area evolved from the EU 2020 strategy, the Small Business Act for Europe and The Entrepreneurship 2020 Action Plan as well as from the national level policies[26] of the **Baltic States** are seeking to promote a better business environment, increased entrepreneurship and higher labour productivity, particularly through innovation, the internationalisation of SMEs and their participation in the global market. In addition, better access to finance is also highlighted as a key policy objective. The SMEs role is central in the enterprise policy of the EU and to that of each of the Baltic States.

While the EU 2020 strategy does not directly set quantitative targets for the SMEs policy area, the policy is closely related to EU 2020 targets for employment, R&D, energy sustainability and fighting poverty. In addition, Country Reports[27] emphasise some of the SMEs policy aspects. E.g. Country Report **Estonia** 2016 highlights the need for investment in technological development in order to strengthen productivity growth and foster higher value added exports of goods. Among other issues Country Report **Lithuania** 2016 emphasises the need to improve labour productivity. The report for **Latvia** indicates the government's strategy for 2014-2020 in terms of stimulating the creation of start-ups and the development of new products or technologies, as well as its support for export-oriented companies.

The CP in the Baltic States properly targets the EU and national policy objectives[28]. The main objectives of the OPs of all three Baltic States are grouped according to their thematic similarity (Table 9).

Despite the fact that the definitions of the objectives display some clear differences SMEs productivity and export potential are the key intervention issues for the OPs in all three **Baltic States**. Another intervention area typical of all three Baltic neighbours is support for entrepreneurship and economic growth in the regions. In addition to these interventions, **Lithuania** also envisaged facilitating eco-innovations in respect of its SMEs.

[26] Indicated in the Estonian Entrepreneurship Growth Strategy 2014-2020, Guidelines for National Industrial Policy for 2014-2020 (Latvia), the National Development Programme (Lithuania) and other national strategic documents.
[27] Commission staff working documents
[28] Improvement of the business environment is attributed to the Institutional capacity of public authorities and administration in the sector/policy area.

Table 9. Specific objectives of SMEs sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
SMEs productivity and export	SMEs are growth and export oriented	Increasing the internationalisation of SMEs	To increase export proportion of high value added products and services
		Increasing the productivity of SMEs	Facilitate formation and development of SME's in particular in manufacturing and RIS3 priority industries
			To increase number of high growth enterprises
Entrepreneurship and regional growth[29]		Increasing the level of entrepreneurship	To increase the amount of private investment in the regions, by making investment for entrepreneurship development according to the economic specialization of territories set in the municipal development programs, as well as based on the local entrepreneurs' needs
Eco-innovations		Increasing investments of SMEs in eco-innovation and other resource-efficient technologies	

Source: OPs information and aggregation by project team, 2016

The growth of SMEs will also be supported by OPs interventions in other sectors/policy areas. In all three **Baltic States** the SMEs will receive support via interventions in the RTDI and Employment sectors/policy areas. In the Institutional capacity of public authorities and administration sector/policy in **Lithuania** and **Latvia** there are SPOs envisaging improvements in the business environment. ITI-type and other combined specific objectives (relevant in Social inclusion sector/policy area in Estonia, Employment sector/policy area in Lithuania and Environment and resource efficiency sector/policy area in Latvia) will contribute to the development of SMEs, as well.

Financial allocations

Analysis of the CP financial allocations in the SMEs sector/policy area is complicated by the fact investments related to the SMEs were each located differently in the various OPs. Simplifying the situation on the attribution of investments as they are treated in the OP, **Estonia** has the largest CP financial allocations per capita among the Baltic States. While the CP contribution per capita in **Lithuania** is lower, the share of the CP funding in comparison to total national public investments is much higher than in its Baltic neighbours and makes up more than half of the total investments in the SMEs sector/policy area. The case of **Latvia** is rather different due to the very high amount of total national public investment in the sector/policy area resulting in a significantly lower share of CP financial allocations than in Estonia and Latvia.

[29] Estonia and Lithuania have regionally targeted SPOs aimed at the economic growth of the regions. The SPOs are placed in Employment and Social inclusion sectors/policy areas according to the OP structure. In Latvia, investments in the support for the rehabilitation of urban areas, public and commercial buildings and various infrastructure objects are also envisaged in the Environment and resource efficiency sector/policy area.

Table 10. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the SMEs sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	301.3	997.7	229	760	30%
Lithuania	499.7	945.3	171	324	53%
Latvia	296.5	2 282.9	149	1 149	13%

Source: Project team calculations based on sources indicated in methodology section, 2016

In all three **Baltic States** around 40 percent of total financial allocations to the SMEs sector/policy area are attributed to the SMEs productivity indicator. In financial terms the latter is a priority in **Lithuania** and **Latvia**. In **Estonia** priority is given to the export indicator (61%). In **Latvia** the export indicator will receive about 20 percent and in **Lithuania** about 12 percent of total financial allocations. These are still significant amounts taking into account the fact that SMEs will mostly receive support in the form of consultations, fairs and business missions.

In Lithuania, high shares of total resources in respect of the sector/policy area are also envisaged for entrepreneurship support (27%) and eco-innovations (17%). In **Latvia** almost equal shares (around 20%) are designated to SMEs productivity by supporting high growth enterprises and private investments in the regions.

3.3.2. Main trends and expected impacts of the CP

Real labour productivity per hour worked and **total export as a share of GDP** were selected as context indicators for the in-depth analysis of the trends and the CP impact in the sector/policy area. In addition, other indicators are also discussed, namely the **number of enterprises having up to 249 employees**[30] and **access to financial resources**. All these indicators represent targets of the OPs and are highly relevant to both the national and the EU policy objectives.

Real[31] labour productivity reveals the aggregated outcome of various factors related to enterprises. During the period 2007-2013 labour productivity growth rate in the **Baltic States** sizeably surpassed the average EU rate. Higher growth rates in the Baltic States are even more evident from the previous 11 years (2002-2013). Despite the faster growth of real labour productivity in the Baltic States they continue to lag behind the EU in absolute values of the productivity. **Estonian** labour productivity per hour worked[32] makes around 43 percent, **Lithuanian** – 39 percent and **Latvian** – 32 percent of EU-28 average.

Table 11. Historical growth rates of real labour productivity

Baltic State	2007-2013	2002-2013
EU (28 countries)	2.6%	11.1%
Estonia	10.7%	48.1%
Lithuania	21.8%	63.1%
Latvia	6.3%	78.7%

Source: Project team calculations based on EUROSTAT data, 2016

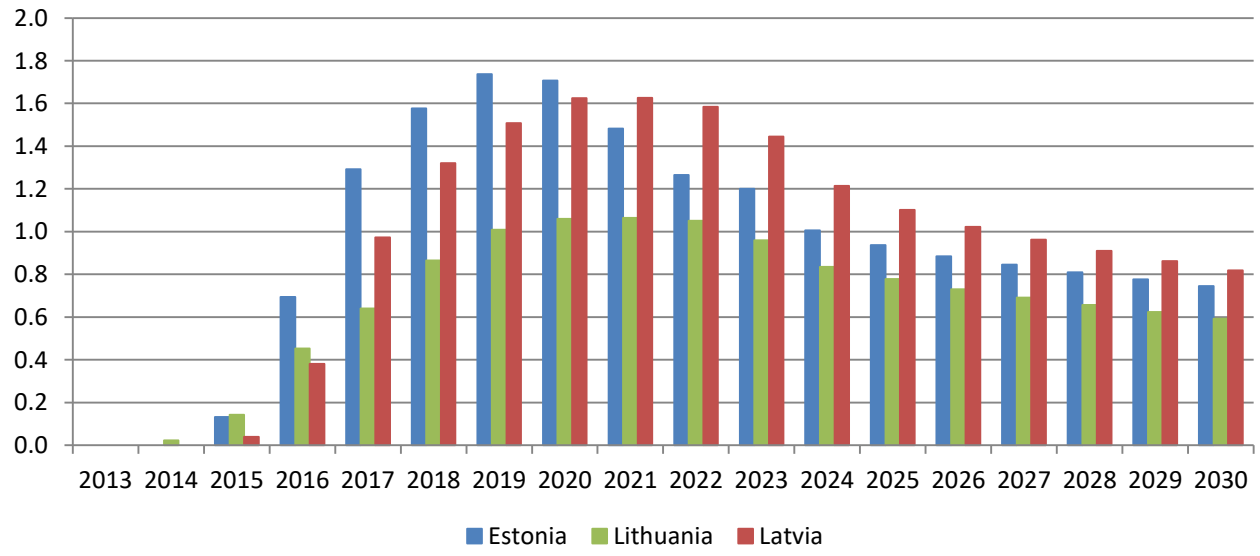
[30] Since information on these enterprises' turnover or balance sheet is not available, they cannot be named as SMEs by definition (headcount, turnover and balance sheet total are used to define SMEs), this indicator provides indicative number of SMEs
[31] Excludes the impact of changes in price level
[32] In comparative prices of 2010

Rather ambitious targets are established in the OPs to monitor changes in the productivity or value-added of SMEs in all three Baltic States. The highest increase up to 2023 is envisaged in **Estonia** - around 70 percent while **Lithuania** and **Latvia** targeted for increases of 43 and 37 percent respectively. If these targets are achieved the real labour productivity per hour worked[33] in 2023 would be[34] around 24.5 EUR in **Estonia**, 18.5 EUR in **Lithuania** and 15 EUR in **Latvia**, meaning that productivity levels would be 65 percent of the EU-28 average in **Estonia**, 49 percent in **Lithuania** and 40 percent in **Latvia**. The targeted growth rates are rather realistic for **Lithuania** and **Latvia**; however the forecasts for labour productivity in the Baltic States and the additional forecast[35] for EU-28 productivity suggest that the **Estonian** scenario is too optimistic (a 55 percent achievement of EU-28 average is more probable).

Value-added or productivity levels are affected by many external factors limiting the CP role in terms of indicator trends. The level of private investment, technological progress, and the regulation of the business environment are only a few of the main external factors to the OPs which significantly affect value-added and productivity. Furthermore, the total number of enterprises and the share of supported ones (the best ratio is envisaged in the Estonian OP: 5 780 supported in comparison to 58 408[36] in 2012) indicates that the OP contribution in respect of attaining the results' target value is expected to be low.

Macroeconomic modelling suggests that the impact of the OPs investments (all sectors/policy areas) on labour productivity per hour worked in **Estonia** peaks in 2019 and in **Lithuania** and **Latvia** in 2021. During the OPs implementation period the labour productivity will, on average, be higher by 1.1 percent in **Estonia**, 0.7 in **Lithuania** and 1.1 in **Latvia**. The impacts of the CP after the OPs completion in 2023 up to 2030 are driven by long term supply side effects and average up to 0.9 percent in **Estonia**, 0.7 percent in **Lithuania** and 1.0 percent in **Latvia** annually.

Figure 10. CP impact on labour productivity per hour worked, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The case study in Estonia provides evidence on the positive CP impact on those enterprises receiving support and discusses the role played by external factors in attaining macro- level changes in the SMEs sector/policy area.

[33] Target growth rates of SMEs are applied to all enterprises. According to EUROSTAT, in the Baltic States SMEs create around 70 percent of gross value added.
[34] In comparative prices of 2010
[35] The growth rate of 11.1 percent in the period of 2002-2013 is applied for the period 2012-2023.
[36] Source: Eurostat

Support for SMEs in Estonia

A total of about 300 million EUR of the EU support for the Operational Programme (OP) for Cohesion Policy is allocated to the specific objective of SME growth and exports in Estonia. In terms of funding, this makes the sector/policy area the 5th largest sector of the 12 sectors/policy areas covered by the OP. The OP objective is linked to the ambitious objectives of "Estonia 2020" to improve productivity (80% of the EU average by 2020) and increase Estonian exports in terms of world trade (0.11% by 2020). To achieve these objectives, the following support is provided:

a. Start-up grants aimed at enterprises with a lot of development potential; export grants for creative industries aimed at increasing the export capacity of SMEs;
b. Fostering ambitious business ideas (in particular in the growth areas of smart specialisation) and the development of ambitious business models (including creative industries);
c. Counselling services to both new and existing enterprises, and an export advice support system to facilitate export activities.

The attainment of these objectives in the SMEs sector/policy area is monitored by two programme-specific result indicators:

a. Value-added in production costs, created by SMEs, per employee (baseline 18 516 in 2012; target 31 500 in 2023) and
b. Number of exporting enterprises (baseline 11 281 in 2012; target 15 700 in 2023).

Both result indicators define similar matters in terms of the SMEs sector/policy area as the context indicators: labour productivity and the scope of exports. As for the output indicators, the OP mainly counts the number of supported enterprises and these numbers indicate that support under the OP will be provided to less than one fifth of the total SMEs population. That is higher in comparison to their Baltic neighbours, but is still very unlikely to expect that the OP could be the major driver in attaining macro level changes monitored by the result indicators. In addition the indicators reflect changes impacted by numerous external factors which remain out of the control of the OP while the targeted value-added is too ambitious in our estimation.

The monitoring report for 2015 does not yet report any data regarding the progress of the two abovementioned result indicators. However, both the mid-term evaluation of the growth strategy by the MEAC (2015), and the AIR of the OP for the Development of Economic Environment (2014) note that the number of exporting enterprises in Estonia had reached 14 458 by 2014 and is thus already exceeding the respective target by 13.4 percent.

Findings about similar EU supported measures in Estonia in the programming period 2007-2013 (support for start-up and development, development of knowledge and skills, export, RDTI) show a positive effect on the targeted enterprises. However, attaining the changes expressed by macro-level result indicators is limited by the small share of supported enterprises in comparison to the total number in the market and various external factors. Among the external factors significantly influencing the value-added and exports, the country report for Estonia[37] highlights the level of demand in the neighbouring countries of Finland and Russia, the level of private investments, and continued deleveraging. The existence of a favourable business environment is also a key factor in the development and growth of Estonian SMEs.

Although the broad variety of external factors explains the limits of the CP investments in attaining the ambitious targets at the macro level, the investments have sizeable effects on the dynamics of supported SMEs in Estonia. Several evaluations in the programming period 2007-2013 report positive effects on the performance of the targeted enterprises, especially in terms of added value, return on sales, number of employees, business revenues and added value per employee.[38] The survey of the Mid-term evaluation of Estonian business and innovation policy in 2014, which included 2 709 companies with 30 as the average number of employees, indicates that six out of seven supported enterprises showed better economic results than those that did not receive support. For example, return on sales increased 58 percent on average, export sales revenue 100 percent, and added value per employee 19.4 percent during the study period 2012-2014.[39] In terms of exports, the number of exporting companies in Estonia increased from 8 597 in 2007 to 14 438 in 2014 as shown in the progress report of indicators in the AIR of the OP for the Development of Economic

[37] Country Report Estonia 2016 (Commission staff working document)
[38] Estonian Enterprise Policy 2007-2013 Final Report, Ministry of Economic Affairs and Communications, 2014; Mid-term evaluations of Estonian business and innovation policy 2012 and 2014, Ministry of Economic Affairs and Communications
[39] Mid-term evaluation of Estonian business and innovation policy 2014, Ministry of Economic Affairs and Communications in co operation with Enterprise Estonia

Environment, 2014.[40] Productivity per company increased most in the category of industrial entrepreneur technology investment, where the additional value increased by more than 1.7 million EUR.[41]

Evidence was found that receiving at least one grant of any type has a strong effect, both statistically and economically, on the number of employees, sales revenue, and total labour costs. The estimate for gross profits was significant at 11 percent. The evidence suggests that the support provided is contributing to company growth, and most likely to profitability.

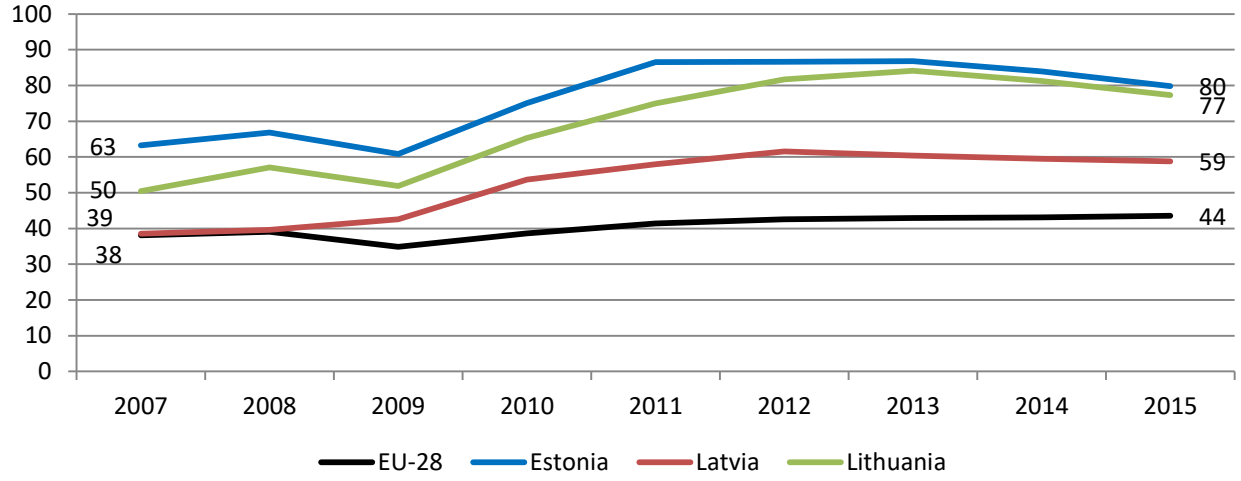
The positive impact of the measures targeted at SME development (export and innovation support) on creating jobs and opportunities for attracting additional private investment is also mentioned in the Analysis of the effect of the 2007-2013 Structural Funds on the regional development,[42] presented as feedback from the regional seminars in Estonia.

It can therefore be concluded that the CP investments aimed at the development of SMEs have sizeable effects on the dynamics of the supported SMEs in terms of growth and added value. However, the contribution to macro-level targets established in the OP and "Estonia 2020" is highly influenced by external factors and other policies (ICT, RTDI, employment and others). To attain the objectives of the SMEs sector/policy area, a balanced economic policy that takes into account external factors relating to the OP (business and regulatory environment, neighbouring markets etc.,) and other policy areas in relation to SMEs policy, is recommended.

Source: the case study was developed by the project team based on desk research, 2016

Another target of all three OPs forcefully emphasised at the national policy level is the further development of the export activities of SMEs. An export indicator covering only SMEs is not available in Eurostat, thus the **total export as a share GDP** is presented below. A high share of exports in terms of total GDP represents the importance of export activities for the small and open economies of the **Baltic States**. While during the 2007-2015 period the average export share in GDP terms of the EU-28 grew by only 14 percent, the pace of export growth in the Baltic States was much higher, being highest in **Lithuania** (53 percent) and **Latvia** (52 percent).

Figure 11. Total export as a share of GDP (%) in Baltic States and EU



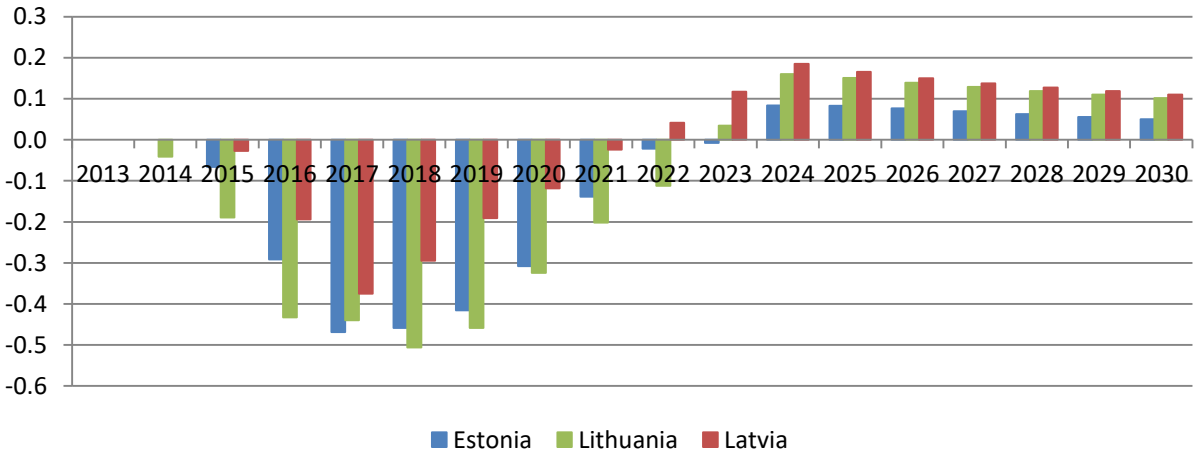
Source: EUROSTAT data, 2016

Economic modelling shows that during the implementation period the non-tradable building & construction and mining & quarrying sectors are impacted most, with market services close behind. Manufacturing is not so heavily affected until the spillovers build up. As it is non-tradable branches that are primarily affected,

[40] Tax and Customs Board of Estonia, AIR of the OP for the Development of Economic Environment, 2014
[41] Mid-term evaluation of Estonian business and innovation policy 2014, Ministry of Economic Affairs and Communications in co operation with Enterprise Estonia
[42] Effect of European structural funds on regional development in 2007–2013, Praxis, 2015

during the implementation period export share in GDP falls (the impact is negative). However, the fall in this share does not mean that actual exports will fall. After the OPs completion in 2023 the share of non-tradable branches declines, the manufacturing and market services spillovers build up and the impact on the export share in GDP becomes positive. Summing the expected CP impact and other trends, it is expected to increase the export share in GDP to 87.2 percent by 2023 in **Estonia**, to 84.9 in **Lithuania** and **61.4** in Latvia.

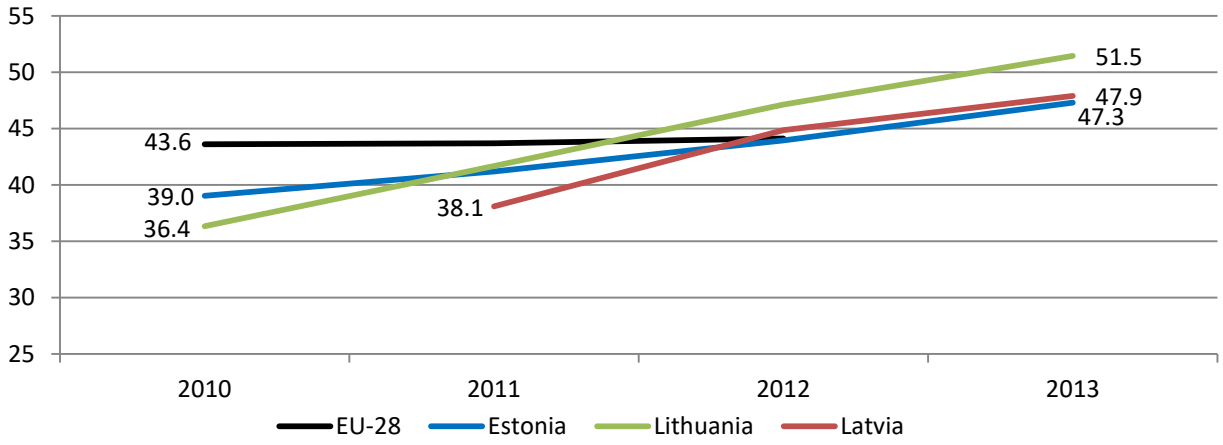
Figure 12. CP impact on total export as a share of GDP, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The OPs will also affect the level of entrepreneurship. In statistical terms this can be expressed as an increasing **number of enterprises**[43] **having up to 249 employees**. Although very short time series are available from EUROSTAT, this data reveals a critical change in the level of entrepreneurship after the period of the economic crisis. In 2010 and 2011 the entrepreneurship level in the Baltic States was a little lower than the EU-28 average while in 2012 and 2013 it exceeded the EU average. It was highest in **Lithuania** – 51.5 enterprises per 1000 population (152 934 enterprises in total) partly due to the existence of a new regulation providing more favourable conditions for establishing business entities. In **Latvia** the number grew to 47.9 (96 928 enterprises in total) while in **Estonia** it grew to 47.3 enterprises (62 449 enterprises in total) in 2013.

Figure 13. Number of enterprises having up to 249 employees per 1000 population



Source: project team calculations based on EUROSTAT data, 2016

[43] The approach to use the gross number of enterprises per 1000 residents for monitoring the level of entrepreneurship is also applied in the Lithuanian OP.

The OPs of the three **Baltic States** envisaged support not only for operating enterprises but for new enterprises as well. The most ambitious target is set in the **Estonian** OP – 470 new enterprises supported; the **Latvian** OP plans to provide support for 368 new enterprises while the **Lithuanian** OP has plans for 228 newcomers. New success stories repeating (or even better) the ones described in the case of Latvia might emerge out of these start-ups. In addition to the number of new enterprises supported directly, the CP will facilitate the establishment of new enterprises through the demand for products and services created by additional funds infused into the economies of the **Baltic States** and via the improved performance of the operating enterprises.

The CP also supports better **access for SMEs to financial resources**. Available statistics from EUROSTAT indicate the existence of clearly negative trends during the financial and economic downturn, e.g. in **Lithuania** the success rate in obtaining loan finance from banks declined from 89.2 in 2007 to 58.4 in 2010. An evaluation[44] performed for the 2007-2013 programming period in Lithuania concludes that financial instruments were employed in a timely manner in reaction to the changing economic situation and the changing needs of the SME entities. At the same time, it was viewed as an adequate reaction to the ongoing changes in banking policy.

The support using financial instruments (loans, guarantees, equity) is continued in the period 2014-2020. Analysis of the OP financial resources to output indicators reveals that in **Estonia** around 175 million EUR of the financial allocations to the SMEs sector/policy area will be distributed as financial instruments, in **Lithuania** and **Latvia** – around 156 million EUR and 126 million EUR respectively. Considering the revolving nature of the instruments the actual amounts provided to SMEs will be even higher than indicated above.

The case study on SME support in Latvia considers the impacts and benefits of grants and financial instruments for delivering the CP and maximising its effect.

Support for SMEs in Latvia

EU funding under the OP for the SMEs sector/policy area amounts to around EUR 296.5 million in the 2014-2020 programming period. These investments are assigned to encourage the development of enterprises; to increasing productivity, cooperation and competitiveness in international markets; and to provide indirect support by contributing to the development of infrastructure to promote economic activity and a more favourable business environment. According to the OP indicators, EU funding is expected to increase SME productivity per employee (first result indicator) as well as the export volume of SME goods and services (second RI). An increase in SME competitiveness and the acceleration of export growth will be particularly facilitated by promoting the formation of new high growth enterprises and by the expansion of existing enterprises (number of high growth enterprises – third RI). The OP will also support private investments (fourth FI) and the growth in employee numbers (fifth FI) outside Riga.

The first two result indicators reflect matters similar to those of the context indicators of the study. The third indicator – number of high growth enterprises by increase of turnover represents a small group of enterprises that have the fastest growth. To ensure the demand for such growth high productivity and in many cases export markets are necessary. Increasing the number of high growth enterprises transmits into an improvement in the values of the context indicators: labour productivity and scope of export. The fourth and the fifth result indicators are not so closely related to the context indicators. The growth of private investments in the regions and the number of jobs created may not necessarily mean higher productivity or the necessity for export activity. Rather, it seems more related to the issues of job creation and employment in regions.

The economic performance of Latvia as a small open economy is highly dependent upon exports. After the economic and financial crisis Latvia's foreign trade recovered rapidly. As compared to 2009, exports of goods at current prices in 2012 had almost doubled, while imports of goods increased around 80 percent. From 2011 to 2013 the growth of the Latvian economy on average reached 4.4 percent annually, which was among the best growth indicators in the EU. In 2015 GDP grew by 2.7 percent, which is regarded as a very good result, given the slower than expected growth in the EU countries and weakening of the economic situation in the Russian Federation, which had a notable effect on Latvian

[44] Evaluation of the impact of the European Union structural assistance on the small and medium sized business entities, Ministry of Economy of the Republic of Lithuania, BGI Consulting, 2014

exports.[45] At the same time, the analysis indicates that CP funds invested during 2007-2013 have contributed almost half or 1.3 percent points to GDP growth.[46]

Forecasts by the Ministry of Economics of Latvia[47] indicate that the expected average annual growth of exports from 2017 to 2021 will be around 3.0 percent to 4.5 percent, which is similar to the expected GDP growth during the same period (3.0%-4.7%). The scenario of more rapid growth envisages that it should be based on the increased competitiveness of the Latvian economy, primarily based on technological factors, the improvement of production efficiency and innovation rather than cheap labour and the low cost of resources. In this respect the financial support of the CP will be important in enhancing SMEs access to financing, supporting innovation and higher technological development which in turn are expected to increase export volumes.

Comparing the Baltic States with the EU as a whole, funding per capita for the SMEs sector/policy area is the lowest in Latvia (149 EUR). In Lithuania the sum amounts to 171 EUR and in Estonia to 229 EUR per capita. The smaller level of financial resources allocated might be one of the reasons to consider the benefits of financial instruments (FI) against those of grants, taking into account that the use of FI helps to facilitate and attract additional private financing, as well as additional expertise and know-how from the private sector. FIs also help to increase the efficiency and effectiveness of public resource allocation, to aid in the re-use of capital resources for further investments, to promote conditionality in relation to the existence of market failure and non-distortion in respect of competition. In addition, previous evaluations suggest that FIs successfully deal with market failures and that the demand for FIs in the market was high. For example, until December 31, 2014 almost 2 000 SMEs were supported under the priorities “Access to finance” and “Promotion of Employment and Health at Work”. Among these SMEs 52 new innovative and knowledge-intensive start-ups were created.[48]

During 2007-2013 programming period FIs were focused on improving the business environment by facilitating the development of a thorough system of support in the form of FIs such as guarantees, loans and venture capital financing. Several new national level venture capital funds were established during the 2007-2013 programming period: *BaltCap Latvia Venture Capital Fund*; *Imprimatur Capital Seed Fund* (including pre-seed fund); *Imprimatur Capital Start-up Fund*; *Expansion Capital; ZGI-3*; and *FlyCap*. In addition, a new and innovative investment initiative dedicated to boosting equity investments made into Baltic enterprises – *Baltic Innovation Fund*, was launched by the EIF in cooperation with the governments of Lithuania, Latvia and Estonia. These funds will continue operating in the 2014-2020 programming period and several new funding facilities, such as the Accelerator funds are currently being set up. In addition, long term export guarantees will be expanded, especially taking into account the need for medium and long term insurance.[49]

During the 2007-2013 programming period 147.5 million EUR of EU financing were allocated through FIs. During 2014-2020 126 million EUR will be provided through FIs from the Latvian OP. In addition, the EUR 23 million gained from FIs capital resources paid back, from revolving fund and interest revenue generated during 2007-2013 will be reinvested in the FIs for SMEs support. Total funding through FIs for the programming period 2014-2020 is planned to be EUR 149 million and this can be further increased by additional financing which will be gained through FIs as was the case during the previous period.[50]

A full spectrum of state aid programmes and financial instruments - loans, venture capital, guarantees - will be provided by a single financial institution *AS Development Finance Institution Altum* (ALTUM). Overall, during the 2007-2013 programming period progress has been observed in the implementation of FIs, however, the quality and efficiency of financial products and the difficulties faced by companies in terms of having optimal access to funding were assessed and improved in the new strategy. This is planned such that in the 2014-2020 programming period, support through FIs will also be given to the formation of new and the development of existing SMEs, including improvements to the availability of financial guarantees, loans, transaction structuring, consultations and training. In comparison to the previous period, this investment strategy is rather more focused on indirect instruments, support for enterprises in the earliest development stages and on expanding various ‘soft’ measures to strengthen the impact of the financial instruments.

[45] The National Economy of Latvia Macroeconomic Review, 2016-1
[46] Ministry of Finance of Latvia, Informative Report on the Investment Progress of European Union’s Structural Funds and Cohesion Fund, European Economic Zone Financial Instrument, Norwegian Financial Instrument and Latvian – Swiss Cooperation Programme until 31 December 2015.
[47] Ministry of Economics of the Republic of Latvia, Economic Development of Latvia, Report, Riga, December 2015
[48] Access to Finance Ex-Ante Assessment Latvia, Ministry of Economics of the Republic of Latvia, Deloitte Latvia, 2015
[49] Based on interviews with Ms. Agita Nicmane, Senior Expert of SMEs Support Division of the Department for Competitiveness of Enterprises, Ministry of Economics of Latvia
[50] Based on the interview with Mr. Gatis Silovs, Deputy Director of the Innovation Department, Ministry of Economics of Latvia

Examples of business cases with venture capital investment:[51] [52] 1) In 2015 Latvian business incubator enterprise Helico Aerospace Industries received around EUR 577 000 in a venture capital investment to start production of a drone called AirDog developed to follow sportsmen and film them with a "GoPro" sports camera. In the same year the AirDog was awarded 2nd place in "Best of CES Awards 2015" as the best robot. 2) Another example is a start-up enterprise called Naco Technologies[53] which received around EUR 800 000 of venture capital to develop marketable products based on their innovative nano-coating technology. At the end of 2015, Naco Technologies were taken over by the Schaeffler Group from Germany, which is the market leader in functional surface technology in several market segments. Nevertheless, the enterprise remains based in Latvia and its Latvian team continues working in country.

The application of grants also has a clear position in the promotion of SMEs. Taking into account the fact that grants were widely used to finance innovation projects in the 2007 – 2013 programming period it was decided that a grant scheme supporting the process of getting new products into production will be continued in the 2014 – 2020 programming period in order to provide funding for innovative equipment for those enterprises, which face several obstacles in the availability of resources, as well as to stimulate acquisition of the most innovative and advanced production machinery. The need for grants is justified by the requirements of commercial banks for own co-financing for the project, since commercial banks in their assessment system count grants as co-financing for the project. It is expected that the use of grants during the 2014-2020 programming period will facilitate the further specialisation of innovative and knowledge-intensive companies and ensure conformity to RIS3. In addition, a grant scheme will complement the range of FIs for the implementation of innovative and knowledge-intensive projects.

A large proportion of financial resources are devoted to those SMEs providing high value-added products and services and to high growth enterprises, combined however such firms constitute only a very small fraction of all SMEs. According to the Eurostat classification, high technology sectors in Latvia are sectors producing high value-added products where high-tech exports from Latvia were only 6.4 percent in 2012 (Eurostat, April 2016) and turnover from innovation (as a percentage of total turnover) was only 5 percent. Furthermore, around 20 percent of allocated CP funding for SMEs is designated to high growth enterprises (which is a similar amount to that allocated to the promotion of private investments in the regions), while according to the Latvian Statistical Bureau there were in total only 1 344 high-growth enterprises, by turnover, in Latvia in 2013 (July 2016).

To sum up, taking into account the use of FI facilitates the attraction of private financing, as well as additional expertise and know-how from the private sector, all of which helps to increase the efficiency and effectiveness of public resource allocation, including the re-use of capital resources as well as other benefits, further gradual transition away from grant funding schemes towards the wider use of FIs is recommended. At the same time, FIs must be combined with different services, support and training, as well as with a developed policy framework to ensure the effectiveness and sustainability of FI application.

Wider use of CP financing and, especially, FIs for promoting competitiveness, export capacity, internationalisation and the growth of enterprises could provide clear advantages helping the enterprises to overcome geopolitical obstacles, as well as the slowdown in the EU economy or domestic demand. In order to have a greater CP impact, specific objectives of the Latvian OP should be more focused on strengthening the overall export capacity of its enterprises not on narrowing support to only a few high value-added products/services and high growth enterprises which make up only a tiny fraction of the total population of SMEs.

Source: the case study was developed by the project team based on desk research and interviews[54], 2016

The CP impact on other OP objectives

In addition to the impacts, outlined above, that are relevant to all three Baltic States, the **Lithuanian** and **Latvian** OPs envisaged additional result indicators to monitor the changes in the sector/policy area. The CP contribution to attaining the target values of these indicators was also assessed.

[51] http://www.baltictimes.com/latvia__s_airdog__man__s_best_drone_friend/). In addition, the enterprise managed to attract around USD 2 million of additional investment for the market launch of AirDog

[52] Based on interviews with Ms. Agita Nicmane, Senior Expert of SMEs Support Division of the Department for Competitiveness of Enterprises, Ministry of Economics of Latvia and Ms. Dace Berzina, Head of Financial Intermediaries at the Latvian Development Finance Institution Altum.

[53] http://www.nacotechnologies.com

[54] Interview partners:
Ms. Agita Nicmane, Senior Expert of SMEs Support Division of the Department for Competitiveness of Enterprises, Ministry of Economics of Latvia
Mr. Gatis Silovs, Deputy Director of the Innovation Department, Ministry of Economics of Latvia
Ms. Dace Berzina, Head of Financial Intermediaries at the Latvian Development Finance Institution Altum.

In **Lithuania**, a medium level CP contribution was assigned to the attainment of an increased level of eco-innovations. External factors such as technological development, the demand for eco products, etc., play an important role, and it is for this reason that the contribution of output indicators is limited to a medium level.

The expected contribution of the Lithuanian OP to the attainment of the target level in respect of entrepreneurship is low. This can be justified by the fact that the total population of enterprises[55] at baseline year (2010) was 114 511 (Eurostat). The majority of these were SMEs. Therefore around 1 000 enterprises supported by the OP cannot significantly change the average level of entrepreneurship. In addition, the actual value of the entrepreneurship level in 2013 reveals that the target value had already been achieved. This indicates that factors other than the OP for 2014-2020 intervention are more significant for the result indicator.

The **Latvian** OP aims to increase the number of high growth enterprises by 55 (from 570 to 625). If 100 operating enterprises and 60 new ones are specifically targeted, the support (financial instruments, etc.,) should deliver some high growth enterprises, therefore a medium level of contribution in respect of the OP was assigned.

A wide variety of factors other than the OP interventions and low numbers of output indicators were the main reasons for assigning a low OP contribution to the result indicators representing the increase in private investments in the areas beyond Riga. This specific objective is selected to be implemented within ITI.

3.3.3. Conclusions

To facilitate further convergence between the **Baltic States** and the EU as a whole in terms of SME performance, all three Baltic neighbours envisaged that sizeable amounts of their OP would be invested in the sector/policy area: **Estonia** invests more than 300 million EUR of EU funds, **Lithuania** – almost 500 million EUR and **Latvia** – nearly 300 million EUR. The CP interventions in all three **Baltic States** will contribute to the main EU and national policy objectives, namely, higher labour productivity, the growth of exports, increased entrepreneurship and better access to finance, etc.

Although the changes in the sector/policy area are highly dependent on private initiative the CP will positively add to the development of the economies. Due to the CP investments average annual labour productivity during the OPs implementation period is expected to be higher by 1.1 percent in **Estonia**, 0.7 in **Lithuania** and 1.1 in **Latvia**. The impacts after the OPs completion in 2023 up to 2030 will be a bit lower and average out to 0.9 percent in **Estonia**, 0.7 percent in **Lithuania** and 1.0 percent in **Latvia** annually.

If the targets of the OPs relating to value-added and labour productivity were achieved the real labour productivity per hour worked[56] in 2023 would be about 65 percent of the EU-28 average in **Estonia**, 49 percent in **Lithuania** and 40 percent in **Latvia**. The targeted growth rates are quite realistic for **Lithuania** and **Latvia**; however they suggest that the **Estonian** scenario is too optimistic (a 55 percent attainment of the EU-28 average is a more realistic target). So despite the significant improvements expected over the next decade (8-12 percent points from the baseline in 2013) in the productivity of the SMEs in the **Baltic States**, they will nevertheless continue to lag significantly behind average EU productivity levels.

The macroeconomic modelling undertaken indicates the rather miscellaneous impact on the export share in GDP. It differs between the OP implementation and post-implementation periods. As it is the non-tradable branches (e.g. building and construction) that are mostly affected during OP implementation due to the increased demand, and to the fact that manufacturing is not affected as much until the long term spillovers build up, the export share in GDP terms falls. However, the negative impact on the share does not mean that actual export volumes will fall, since the export may simply grow at a smaller pace than GDP. After the OPs completion in 2023 the CP impact on export share in GDP terms is expected to become positive. Summing the expected CP impact with other trends, it is forecast that progress will be greatest in Estonia and that the export share in GDP terms will grow to 87.2 percent by 2023 in **Estonia**, to 84.9 percent in **Lithuania** and to

[55] Source: Eurostat
[56] In comparative prices of 2010

61.4 percent in **Latvia**. The export share in GDP in all three **Baltic States** will remain sizeably higher than the EU-28 average.

The level of entrepreneurship, measured by the number of enterprises, will be increased by the CP interventions at least by the addition of the 470 new enterprises in **Estonia**, 228 in **Lithuania** and 368 in **Latvia** envisaged in the OPs. While these are small numbers in terms of overall populations, the CP will facilitate the level of entrepreneurship by more than that through *inter alia* promoting better access to financing using the financial instruments, soft measures (e.g. counselling services), increased demand for SMEs product and services. **Estonia** envisaged using 175 million EUR for financial instruments, **Lithuania** and **Latvia** allocated 156 million EUR and 126 million EUR respectively.

In addition to the abovementioned impacts, **Lithuania** and **Latvia** each selected some additional result indicators to monitor the changes promoted by CP intervention. In **Lithuania**, the CP is expected to have a medium impact on the level of eco-innovations. In **Latvia**, high growth enterprises and the level of private investments beyond Riga will be affected to a medium and low extent respectively. The scope of interventions and external factors outside the OPs were the main reasons limiting the extent of the CP contribution.

3.4. Energy sector/policy area

3.4.1. EU and national policy objectives and CP interventions

Europe 2020 promotes a reduction in greenhouse gas emissions by 20 percent (compared to 1990). The strategy also includes highly related goals to improve energy efficiency and to increase the share of renewable energy. The goal of completing the internal energy market and building the missing sector infrastructure (thus ending Europe's energy islands) is also emphasised in EU level strategic documents. The latter goal is very important for the **Baltic States**, as reducing energy dependence on Russia (via integration into the pan-European energy market), including a reduction in energy prices, played a central role in all three Baltic States.

The abovementioned objectives are also indicated in the national strategic documents[57] of the Baltic States.

Some of the energy policy aspects are also emphasised in the Country Reports[58]. Attention is paid to **Estonia**'s low energy efficiency and opportunities to improve the energy efficiency of local public buildings and residential and industrial buildings. High levels of energy intensity are also emphasised in the case of **Lithuania**, in particular in housing, transport and industry. In the cases of **Lithuania** and **Latvia**, attention is also paid to dependence on energy imports.

Many of these objectives are targeted by the CP investments. The main objectives of the OPs of all three Baltic States are grouped according to their thematic similarity (Table 12).

[57] For example, in Estonian National Development Plan of the Energy Sector 2020, the National Energy Independence Strategy (Lithuania), the Energy Development Guidelines for 2014-2020 (Latvia)

[58] Commission staff working documents: Country Report Estonia 2016, Country Report Lithuania 2016 and Country Report Latvia 2016

Table 12. Specific objectives of Energy sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Energy consumption and renewable energy	Energy-efficient housing sector and street lighting[59]	Reduce energy consumption in public infrastructures and multi-apartment houses	To promote the increase of energy efficiency in public and residential buildings
		Enhance energy efficiency in the heat supply sector and households	According to the integrated development programme of the municipality, to facilitate the increase of energy efficiency in municipal buildings
		Reduce intensity of energy consumption in industrial enterprises	To promote effective use of energy resources, reduction of energy consumption and transfer to RES in manufacturing industry
		Increase the use of renewable energy	To promote energy efficiency and use of local RES in district heat supply
Quality of energy supply		Test the prospects of introducing smart grid technologies	
Integration into the EU internal energy market		Strengthen integration into the European Union's internal energy market	

Source: OPs information and aggregation by project team, 2016

The investments of **all three OPs** are mainly focused on reduction in energy consumption and energy losses, largely via increasing the energy efficiency of buildings. In **Lithuania** and **Latvia** notable investments are also directed to increasing the share of renewable energy. **Lithuania** is additionally investing in the physical infrastructure needed to strengthen its integration into the European Union's internal energy market.

Financial allocations

In financial terms, **Lithuania** prioritises the Energy sector/policy area. Consequently, in Lithuania EU funding per capita in this area is twice as high as in Estonia and Latvia revealing that **Lithuania** considers the Energy sector to be a much greater financial priority in the CP than do the other two Baltic States. From the point of view of all three Baltic States, this sector/policy area received 12 percent of the total EU funding allocated to the Baltic States, thus falling under the three largest sectors-recipients.

Table 13. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Energy sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	247.1	390.7	188	298	63%
Lithuania	1 047.2	1 221.4	358	418	86%
Latvia	368.6	621.3	186	313	59%

Source: Project team calculations based on sources indicated in methodology section, 2016

[59] The SPO in Estonian OP also encompasses some renewable energy related actions and GHG emissions reduction targets.

In all three **Baltic States** the CP contribution accounts for a large share of general government spending within the sector/policy area – around 60 percent in **Estonia** and **Latvia** and up to 86 percent[60] in **Lithuania**. Therefore changes in the Energy sector/policy area (at least on the public side) will be largely driven by CP investments.

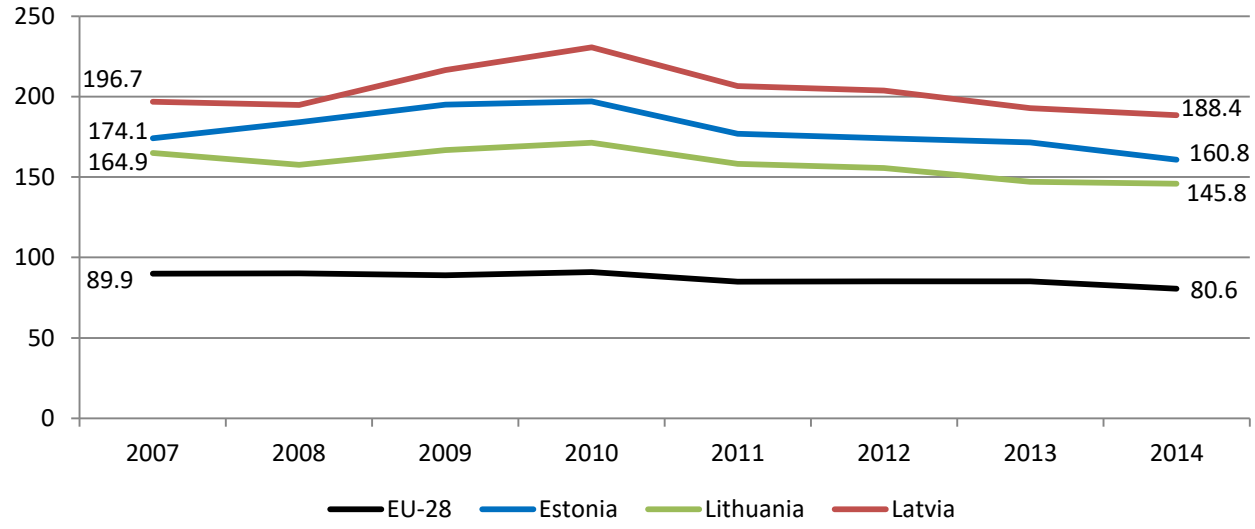
The highest share of total financial allocations for the Energy sector/policy area in all three **Baltic States** is attributed to a reduction in energy consumption and energy losses: 77.5 percent in **Estonia**, 47.0 percent in **Lithuania**, and 85.4 percent in **Latvia**. In **Lithuania** and **Latvia** a large share of investments (24.8% and 14.9% respectively) is also dedicated to increasing the share of renewable energy.

In **Lithuania**, a notable financial amount (13% of total financial allocations) is also attributed to strengthening integration into the European Union's internal energy market.

3.4.2. Main trends and expected impacts of the CP

One of the key context indicators in the Energy sector is **total final energy intensity** which serves as a good representation of how efficiently energy is used and is one of the main national and EU policy objectives. It reveals what amount of energy (in kgoe[61]) is consumed to produce a unit (EUR 1000) of gross domestic product (GDP)[62]. The more advanced the economy, the higher the amount of GDP will be created with the same quantity of energy. Historical changes in total final energy intensity reveal that all three **Baltic States** have already entered the stage at which energy intensity is decreasing with each additional unit of GDP created (Figure 14). Within the period 2007-2014 the Baltic States reduced their energy intensity, however, they still consume much more energy to produce a unit of GDP than the EU average.

Figure 14. Total final energy intensity (kgoe/EUR 1000 of GDP) in Baltic States and EU



Source: EUROSTAT data, 2016

Ambitiousness in respect of the targets established in the OPs to monitor changes in energy consumption (or intensity) differs among the Baltic States. **Estonia** plans to achieve average energy savings of 45 percent in reconstructed apartment buildings (in comparison to a 40 percent baseline value). Taking into account the number of households to be effected (7 percent of total households in Estonia); attainment of the OPs target

[60] Due to specifics of Energy sector significant investments are made by public enterprises, thus these investments are not included into general government spending. As a result, share of CP investments in total national investments may be lower than share of CP investments in general government spending.
[61] Kilogrammes of oil equivalent (kgoe).
[62] At constant prices.

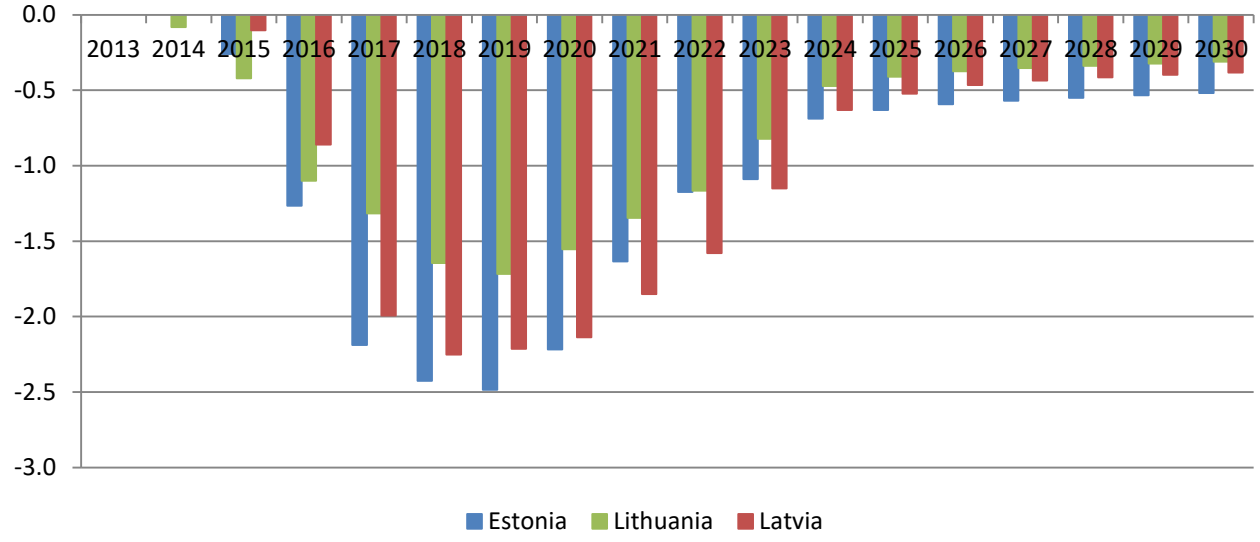
value of this indicator could lead to a reduction of final energy consumption of around 0.5 per cent. While this is not a significant change, macroeconomic modelling includes indirect CP effects and reveals a higher level of CP impact on final energy consumption / intensity (Figure 15). Summing up the CP impact and other trends, it is estimated (using macroeconomic modelling) that final energy intensity decreases to 136 kgoe/ EUR 1000 by 2023, which is a 15 percent change and exceeds the reduction observed during the previous programming period.

Lithuania plans to reduce energy intensity in industrial enterprises by 31 percent and also to reduce final energy consumption in the service and household sectors by 20 percent, something that would lead to a substantial reduction in final energy consumption. Although CP investments are capable of producing only a much smaller change, the trends within the sector will supplement this impact and will likely reduce final energy intensity to 129 kgoe/ EUR 1000 by 2023, or by 12 percent, which is close to the change experienced within the 2007-2014 period.

Latvia is seeking to reduce energy intensity in manufacturing industry by 20 percent and to reduce average heat consumption for heating also by 20 percent; this would lead to quite a significant reduction in final energy consumption. CP investments will likely however only produce a much smaller change. The trends within the sector will however supplement this impact and will likely decrease final energy intensity to 165 kgoe/ EUR 1000 by 2023, which is a 12 percent change and exceeds by almost three times the reduction observed during the 2007-2014 period.

The energy consumption (intensity) is affected by many external variables that include not only the CP investments, but also such factors as interest in undertaking renovations on the part of the owners of apartment buildings, energy prices or technical feasibility. Furthermore, outputs foreseen to be created as an outcome of investments indicate that the OP contribution in respect of attaining the results' target value is expected to be low[63] thus the trends within the sector will be the main factor ultimately allowing for the attainment of this target.

Figure 15. CP impact on total final energy intensity, percent



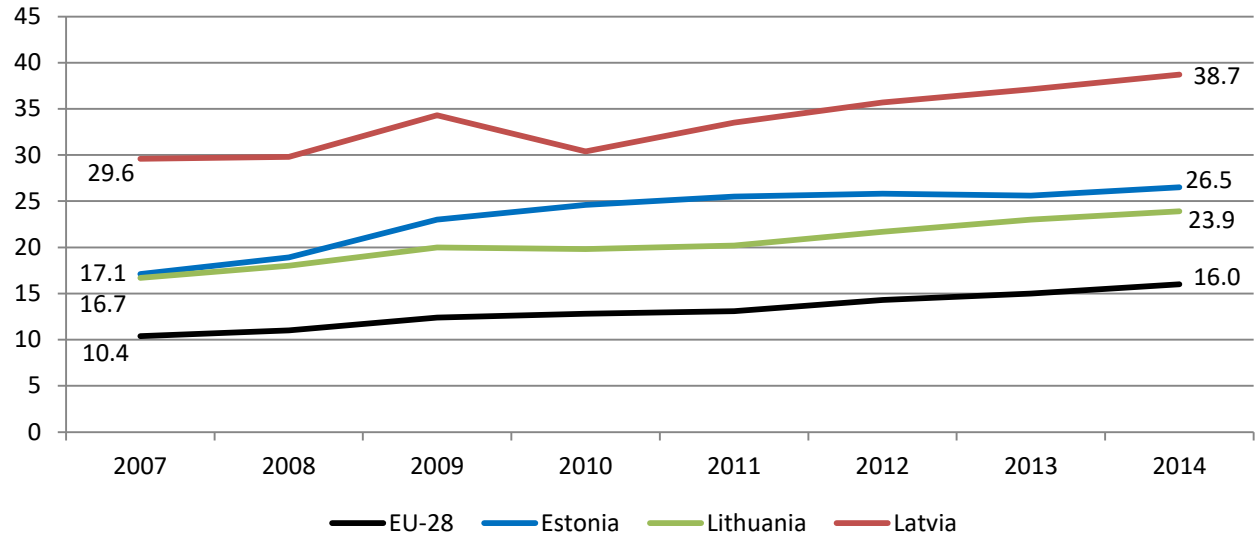
Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

[63] For example, in Lithuania the number of supported enterprises constitutes 3 percent of the total number of industrial enterprises, thus the OP contribution is clearly insufficient to reach the targeted reduction of energy intensity in the whole sector of industrial enterprises by 31 percent.

Macroeconomic modelling allows isolating the impact of the OPs investments[64] from other factors. Simulation results show (Figure 15) that the CP impact on total final energy intensity in the Baltic States is at its highest in 2018-2019. During the implementation period[65] the investments will, on average, reduce the level of energy intensity by 1.5 percent in **Estonia**, 1.1 in **Lithuania** and 1.4 in **Latvia**. The impacts after the OPs completion in 2023 up to 2030 will, on average, be around 0.6 percent in **Estonia**, 0.4 percent in **Lithuania** and 0.5 percent in **Latvia** annually. These impacts are important, but remain quite modest, taking into account the simulated overall change (i.e. also driven by other factors) of final energy intensity by 2023 (15% change in Estonia and 12% in both Lithuania and Latvia).

Increasing the **share of renewable energy** is another important context indicator (this is also a Europe 2020 indicator). All three **Baltic States** are on a path towards the increasing use of renewable energy and are consuming more renewable energy than the EU average (Figure 16). The data shows that **Estonia** and **Lithuania** have already achieved their renewable energy related Europe 2020 targets, while **Latvia** is very close to achieving its target[66] (an ambitious target was set for Latvia which already had a historically high share of renewable energy).

Figure 16. Share of renewable energy in gross final energy consumption (%) in Baltic States and EU



Source: EUROSTAT data, 2016

Estonia has no result indicators in the OP related to the share of renewable energy, however it is envisaged that the OP investments will contribute to the wider use of renewable energy. Summing the CP impact with other expected trends will increase this share to 30 percent by 2023.

The Lithuanian and Latvian OPs have established quite modest targets for monitoring changes in the share of renewable energy. **Lithuania** planned to increase the share of renewable energy in the final energy balance by 1.3 percentage points (from 21.7 percent to 23 percent), with this target already being attained in 2013. Estimations[67] indicate that the share could increase to 26 percent by 2023. **Latvia** plans to increase the share of renewable energy produced in central heating systems by 1.9 percentage points[68], and to increase the RES proportion in the energy consumption of manufacturing industry by 2 percentage points[69].

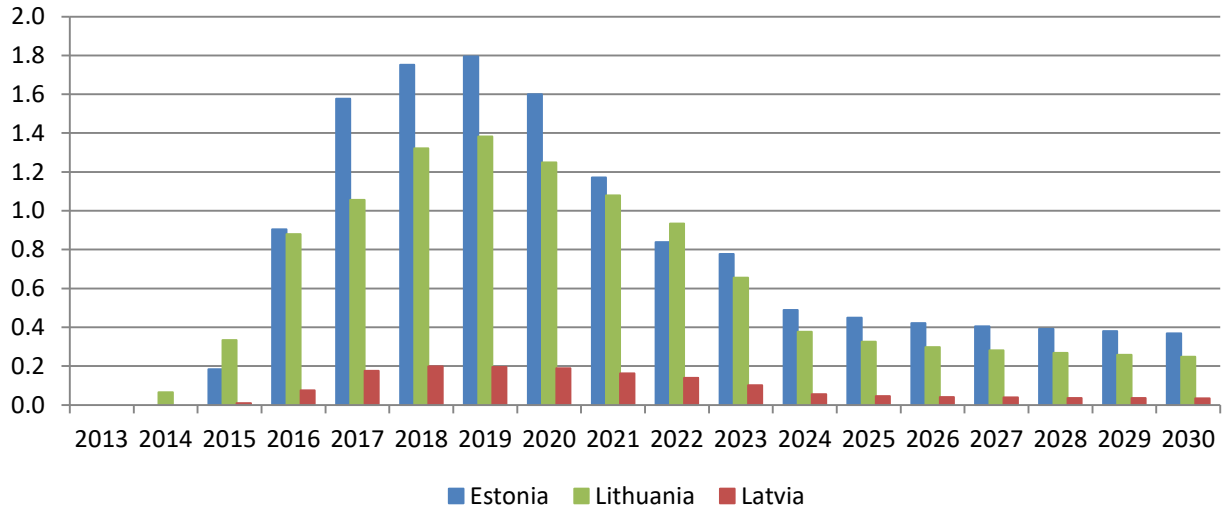
[64] The impact of OP investments within all sectors/policy areas.
[65] I.e. 2014-2023
[66] The target is 25 percent share of renewable energy for Estonia, 23 percent for Lithuania and 40 percent for Latvia.
[67] Obtained using satellite equations of macroeconomic modelling
[68] From 18.8 to 20.7 percent
[69] From 38 to 40 percent

This would lead to a reduction in the share of renewable energy in gross final energy consumption by around 0.5-0.7 percent. CP investments will likely only produce a much smaller change; however, the trends within the sector will supplement this impact and the share of renewable energy will likely increase to 39 percent by 2023.

The pace at which the share of renewable energy is increasing is however slowing as all three **Baltic States** have already achieved very good results. The estimated share of renewable energy in energy consumption totals may however be potentially altered by unforeseen changes in external factors such as the price of renewable energy or technical opportunities to produce or to supply renewable energy.

Macroeconomic modelling isolates the impact of OPs investments[70] from other factors. Simulation results show (Figure 17) that the reaction of the share of renewable energy is highest in **Estonia** and **Lithuania** where it peaks at 1.8 percent and 1.4 percent respectively in 2019 (i.e. the share of renewable energy is 1.8 / 1.4 percent higher due to OP investments). In **Latvia** it peaks at only 0.2 percent in 2018-2019. The much smaller reaction in Latvia can be explained by the presence of a much higher existing initial share of renewable energy than in Estonia and Lithuania meaning that every additional percentage point in the share of renewable energy requires a much greater effort to achieve. During the period 2014-2023 the share of renewable energy will be higher by 1.1 percent in **Estonia**, 0.9 in **Lithuania** and 0.1 in **Latvia** due to CP investments. The impacts, after the OPs completion in 2023 up to 2030 average out to 0.4 percent in **Estonia**, 0.3 percent in **Lithuania** and 0.04 percent in **Latvia** annually. The impacts of the CP are important, but quite modest, taking into account the forecasted overall change of the share of renewable energy by 2023 (13% change in Estonia, 10% in Lithuania and 0.1% Latvia).

Figure 17. CP impact on share of renewable energy, percent

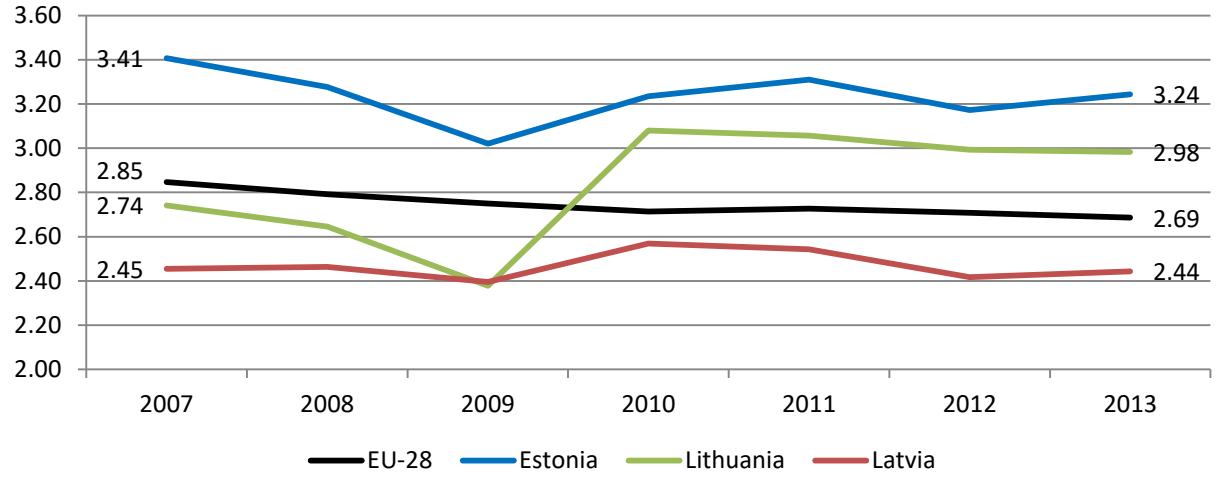


Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

A further context indicator selected to describe the Energy sector/policy area is the **GHG emissions intensity of energy consumption**[71]. Within the period 2007-2014 the EU's GHG emissions intensity of energy consumption decreased by 5.6 percent, while in the **Baltic States** this indicator also tended to decrease (**Lithuania** saw a jump in emissions intensity after stopping its nuclear power plant at the end of 2009, however, in the subsequent years, emission intensity has tended to decrease).

[70] The impact of OP investments within all sectors/policy areas.
[71] This reflects a ratio between energy-related greenhouse gas emissions (carbon dioxide, methane and nitrous oxide) and gross inland energy consumption.

Figure 18. GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[72]) in Baltic States and EU



Source: EUROSTAT data, 2016

All three OPs have output indicators related to decreasing GHG emissions. The historical change in GHG emissions in absolute terms is important here as an additional trend (Table 14). Within the period 2007-2013 the EU's GHG emissions decreased by 13 percent. Similar tendencies were present in **Lithuania** and **Latvia**, while, in **Estonia**, these emissions have slightly increased. With regard to the Europe 2020 target to reduce greenhouse gas emissions by 20 percent compared to 1990 levels, in all three **Baltic States** this target has already been surpassed (this is because in 1990 all three Baltic States were still using an energy inefficient infrastructure of Soviet design). Attaining the OPs target indicators related to GHG emissions would allow for further reductions in annual GHG emissions by 0.2 percent in **Estonia**, 3.4 percent in **Lithuania** and 0.6 percent in **Latvia**. This contribution will help to achieve the Europe 2020 emissions related targets[73].

Table 14. Historical change in Greenhouse Gas Emissions (CO2 equivalent, thousand tonnes)

Country	2007	2013	Change in 2007-2013	Change in 1990-2013	GHG change targeted in OPs[74], compared to 2013 value
European Union	5 153 652	4 476 776	-13%	-21%	-
Estonia	20 937	21 741	4%	-46%	-0.2%
Lithuania	25 506	19 946	-22%	-58%	-3.4%
Latvia	11 992	10 914	-9%	-58%	-0.6%

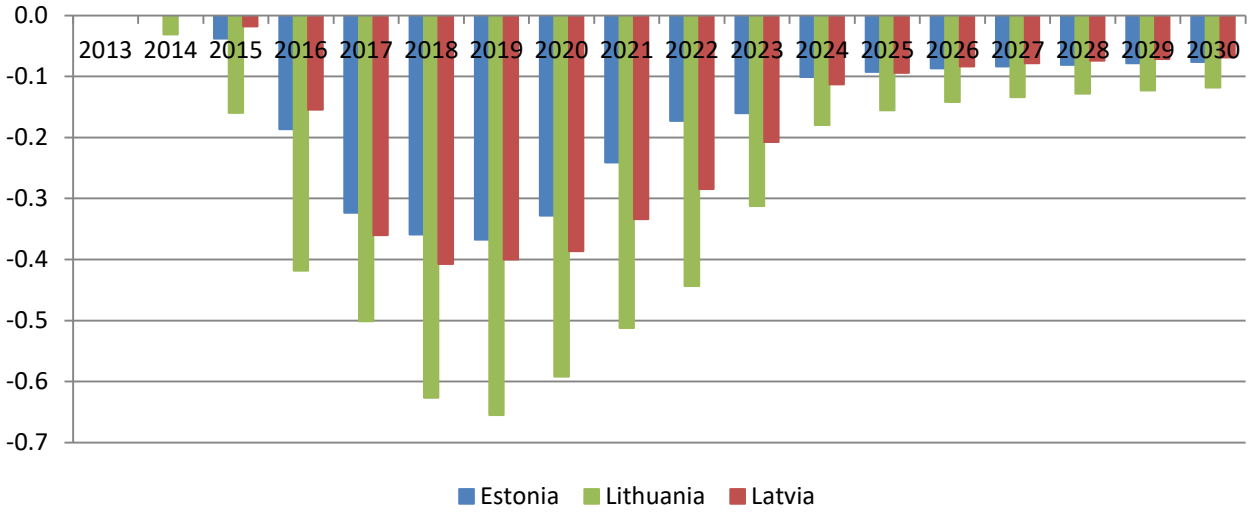
Source: Project team calculations based on EUROSTAT data, 2016

Reduction of nominal GHG emissions will also contribute to reducing GHG emission intensity. Simulation results show (Figure 19) that the CP impact on GHG emissions intensity is the highest in **Lithuania** where emissions in 2019 will be reduced by 0.7 percent. Meanwhile, in **Estonia** and **Latvia** the highest impact on the reduction of emissions (0.4%) is expected to be attained in 2019 and 2018 respectively. On average the emissions in 2014-2023 will be reduced by 0.2 percent in **Estonia**, 0.4 in **Lithuania** and 0.3 in **Latvia** due to

[72] Tonnes of oil equivalent (TOE).
[73] The target is to limit emissions growth to 11 percent for Estonia, 15 percent for Lithuania and 17 percent for Latvia, compared to 2005 levels.
[74] Based on the CP output indicator values

CP investments. The impacts after the OPs completion in 2023 up to 2030 average out to around 0.1 percent in all three **Baltic States**. These impacts are rather modest, taking into account the simulated overall change to the final energy intensity level by 2023: a reduction in GHG emissions intensity to 3.2 tonnes / TOE[75] by 2023 in **Estonia**, to 2.9 in **Lithuania** and 2.4 in **Latvia** is expected, which is around a 2.5 percent change in each **Baltic State**.

Figure 19. CP impact on GHG emissions intensity of energy consumption, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The CP impact on other OP objectives

In addition to the OP objectives which are relevant to all three Baltic States, the **Lithuanian** OP envisaged additional objectives. Firstly, CP investments will make a significant impact in terms of strengthening integration into the EU internal energy market. The attainment of targets in respect of electricity imports was assigned a high contribution level. Investments in power transmission lines and transformer substations or distribution stations will contribute to the two-way transmission of electricity via intersystem links. Support will also be provided for domestic gas transmission networks to ensure the integration of the Klaipėda LNG terminal into the market and the integration of Lithuania's gas systems into the European internal market. Three medium linkages representing different actions produce an overall high contribution to the attainment of targets related to the natural gas market.

Another additional objective relates to an increase in the quality of the energy (namely, electricity) supply. A medium level contribution of the Lithuanian OP was assigned taking into consideration the rather low target value of the relevant output indicator and the value of the relevant financial allocations.

3.4.3. Conclusions

All three **Baltic States** have already surpassed their Europe 2020 targets to reduce greenhouse gas emissions by 20 percent compared to 1990. However, this is because in 1990 all three Baltic States were still using an energy-inefficient infrastructure of Soviet design, thus they were able to reduce emissions by 46-58 percent during the period 1990-2013. In the period 2007-2013 the Baltic States demonstrated the existence of different paths in terms of reducing emissions. **Lithuania** was able to reduce emissions by 22 percent, **Latvia** - by 9 percent, while emissions in **Estonia** actually grew by 4 percent.

[75] Tonnes of oil equivalent (TOE).

Despite the good achievement in respect of greenhouse gas emissions related to the Europe 2020 target, all three **Baltic States** are still consuming much more energy to produce a unit of GDP than the EU average. **Latvia** is however in a somewhat more favourable position, as it has very high share of renewable energy in its gross final energy consumption mix (38.7% compared to 26.5% in Estonia, 23.9% in Lithuania and only 16.0% in EU), thus its higher energy consumption is outweighed by lower emissions per unit of energy consumed.

During the period 2007-2014 all three **Baltic States** were able to reduce their energy intensity levels. This reduction was largest in **Lithuania** where energy intensity was reduced by 11.6 percent during the period, while **Estonia** was able to reduce its energy intensity by 7.6 percent and **Latvia** by 4.2 percent.

To further support progress towards the goals during the programming period 2014-2020 all three Baltic States set aside a sizeable share of overall CP funds for the development of the Energy sector/policy area. The largest amount was dedicated to this sector by **Lithuania** – almost 1 050 million EUR (the largest share of financial allocations among all sectors/policy areas in Lithuania) while **Estonia** plans to invest almost 250 million EUR and **Latvia** around 370 million EUR of CP funding. Investments from all three OPs in the 2014-2020 programming period are focused primarily on reducing energy consumption and energy losses. **Lithuania** has not only dedicated the highest total amount of CP investments to the Energy sector but its funding per capita is also twice as high as in **Estonia** and **Latvia** revealing that **Lithuania** considers the Energy sector to be a much greater financial priority for the CP than do the other two Baltic States. The CP contribution, compared to general government spending within the Energy sector, amounts to around 60 percent in **Estonia** and **Latvia** and up to 86 percent[76] in **Lithuania** indicating that the changes in the sector/policy area (at least on the public side) will be largely driven by these CP investments.

The planned interventions in all three **Baltic States** are expected to make important contributions to reducing energy consumption (intensity), a larger share of renewable energy, lower GHG emissions (and a lower emissions intensity). As renewable energy and GHG emissions-related targets in the Baltic States are in principle already, or almost, achieved, the most important expectation is that the CP investments will facilitate the recalibration of the Baltic States' energy intensity levels towards the EU average. In 2014-2023 the impact of CP investments is expected to be higher in **Estonia** and **Latvia** - due to the investments made, the level of total final energy intensity will on average be reduced by around 1.5 percent, while the annual CP impact in **Lithuania** is expected to be lower - it is likely that the reduction will be around 1.1 percent. Summing the expected CP impact and other trends, it is estimated that final energy intensity in 2023 should be lowest in **Lithuania** and equal to129 kgoe/ EUR 1000, highest in **Latvia** and equal to 165 kgoe/ EUR 1000. Meanwhile, **Estonia** is forecast to stand somewhere in the middle with a final energy intensity equal to 136 kgoe/ EUR 1000. This means that energy intensity levels will still remain high compared to the EU average level of 80.6 kgoe/ EUR 1000 in 2014.

Nevertheless, the overall reduction in energy intensity in **Estonia** and **Latvia** in the period 2014-2020 should be higher than in 2007-2014, while in **Lithuania** it is forecast to remain somewhat similar. The slowdown in the intensity of the reduction in **Lithuania** can be explained by currently achieved lower intensity levels comparing to the other two Baltic States, meaning that every additional unit of reduction requires a much greater effort to achieve. At the end of the 2014-2023 period **Lithuania** will most likely be closest to the EU average while **Latvian** energy intensity will likely be the highest among the Baltic States.

In addition to the abovementioned impacts, the Lithuanian OP is also expected to impact integration into the EU internal energy market and the quality of energy supply. CP impact on integration into the EU internal energy market is expected to be medium to high, taking into account investments foreseen. CP impact on the quality of energy supply is expected to be low to medium taking into consideration the rather low target value of the relevant output indicator and the value of the relevant financial allocations.

[76] Due to specifics of Energy sector significant investments are made by public enterprises, thus these investments are not included into general government spending. As a result, share of CP investments in total national investments may be lower than share of CP investments in general government spending.

3.5. Adaptation to climate change sector/policy area

3.5.1. EU and national policy objectives and CP interventions

EU policies on climate change are primarily captured by the so-called 20-20-20 goals. These goals, put forward in the EU 2020 energy and climate package,[77] imply a 20 percent reduction of greenhouse gas emissions, a 20 percent target for the share of renewables in the energy consumption mix and a 20 percent improvement in energy efficiency by the year 2020. However, as ongoing climate change will lead to rising sea levels, increasing the risk of flooding in low-lying coastal regions throughout Europe (including the Baltic Sea region) as well as other environmental threats, EU policies in the climate sector also include support for combating these negative consequences of climate change.[78]

The issue of climate change and the environmental threats which it entails is also evident from the national strategies[79] of the **Baltic States**. These strategic documents, all in line with overall EU policy on climate change, emphasise the need to reduce greenhouse gas (GHG) emissions, particularly from the energy and transport sectors, highlight the importance of the increased use of renewable energy and a shift towards low-carbon technologies.

The EU goal to reduce human-induced impacts on the climate, and thus the drivers of dangerous climate changes, is primarily managed in the Baltic OPs through efforts to increase their energy efficiency within the Energy sector/policy area and to support more sustainable ways of moving (public transport) in the Transport sector/policy area.

The Baltic States' OP objectives within the climate change sector/policy area are more focused on reducing the risks of – and on improving protection against – damage to coastal areas, water and land environment resulting from global warming and climate change (Table 15).

Table 15. Specific objectives of Adaptation to climate change sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Prevention of climate change induced threats	Increased capability to react to emergencies caused by climate change and extensive pollution	Minimise climate change-induced damage	To prevent the threat of flood and coastal erosion risks in urban areas
			To reduce flood risks in rural areas

Source: OPs information and aggregation by project team, 2016

The **Baltic States'** main strategy to prevent climate change induced threats of environmental disasters, flooding and other negative impacts on habitats, population and economic activity is to reduce the areas at risk and the number of potentially affected inhabitants and industrial sites through investment in monitoring and response equipment, as well as better hydro-technical structures along rivers banks and coasts. This general strategy and its main interventions, applies to all three Baltic States. **Lithuania**, however, differs with respect to the financial size of its investment and the high concentration of the interventions on the goal of minimising the potential damage caused by flooding on economic activity.

[77] http://ec.europa.eu/clima/policies/strategies/index_en.htm
[78] The overall goal of this EU efforts and interventions is to strengthen Europe's resilience to the impacts of climate change. See e.g. "The EU Strategy on Adaption to Climate Change" http://ec.europa.eu/clima/publications/docs/eu_strategy_en.pdf
[79] e.g. National Reform Programme "Estonia 2020", Estonian Environmental Strategy 2030, National Strategy for Climate Change Management Policy (Lithuania), Environment Policy Strategy 2015-2020 (Latvia), National programme on flood risk assessment and management (Latvia)

Financial allocations

In financial terms, CP actions on climate change and adaptation constitute one of the minor policy areas[80] in the OPs of the **Baltic States** (Table 16). It should, however, be noted that the OPs investments in the Energy and Transport sectors/policy areas supplements[81] the climate change policies of the countries concerned through support for renewable energy sources, energy efficiency solutions, public transport, etc.

EU funding per capita for the Adaptation to climate change sector/policy area does not differ as much between the three **Baltic States** as the share of CP funding in comparison to total national investments in the policy area. The share is highest in **Lithuania** and **Latvia** encompassing from roughly a third to a half of the total national investments in the sector/policy area. Due to large national investments the share of CP financial allocations in **Estonia** is much less significant, making up only 17 percent of total national investments in this area.

Table 16. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Adaptation to climate change sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	56.3	340.1	43	259	17%
Lithuania	108.6	296.7	37	102	37%
Latvia	63.0	127.1	32	64	50%

Source: Project team calculations based on sources indicated in methodology section, 2016

The distribution of the funding between various interventions and result targets is highly focused on investments in technical infrastructure and new equipment in order to upgrade the capacity to combat water pollution, reduce the risk of flooding and generally enhance the citizens' protection against environmentally related threats and disasters. Hence, the **Estonian** OP allocates almost half of the funding to marine pollution control and rescue equipment, while **Latvia** and **Lithuania** devote most of the available resources (80 – 100 %) to investments in new/upgraded hydro-technical infrastructure and environmental risk prevention, control and management.

3.5.2. Expected impacts and contributions of the CPs

The climate policy area is highly associated with the volume of emitted GHG. The trends on emissions and the expected impact of the CP are elaborated in the presentation on the Energy and Transport sectors/policy areas. The impacts of the Baltic CP interventions within the Adaptation to climate change sector/policy area to attaining the targeted SPOs are discussed below. [82]

In **Estonia**, the target of increasing the number of regions covered by fire localisation and extinguishing capacities will be achieved by acquiring the relevant rescue vehicles and by putting in place an increased monitoring network. The OP contribution to the attainment of the result was assessed as high. Acquiring new and capable marine pollution control vehicles will contribute to a reduction in the response time to emergencies caused by polluted water, including oil spillages. Considering the investments planned it was assessed that the Estonian OP will make a high level contribution to the targeted reduction of the response

[80] Similar level of financial allocations is available for Institutional capacity of public authorities and administration sector/policy area.
[81] Please refer to Energy and Transport sectors/policy areas of the study
[82] As stated earlier in the report (Table 3), it is not possible to establish appropriate context indicators for this policy area.

time. The Estonian OP will also make a significant (high level) contribution in terms of the target of increasing the share of the upgraded hydro-meteorological monitoring network. Upgrading monitoring stations, the country's calibration laboratories and the automatic probe station is considered as having a direct and positive impact on the share of upgraded hydro-meteorological monitoring networks in Estonia. The OP indicates that various stakeholders (e.g. farmers and the inhabitants of flood risk areas) will benefit from improved weather forecasting.

In order to minimise the potential damage caused by flooding on economic activity, **Lithuania** applies a complex approach by investing in better monitoring and early warning systems, rescue equipment, infrastructure for the treatment of collected surface (rain) water and flood protection. The OP contribution, in terms of achieving the targeted reduction in the potential cost of flood damage, was assessed as high. The benefits should not however be limited to this alone, since EU investments from the OP amount to almost 110 million EUR, which is high in comparison with the results' target. Two-thirds of this funding will be allocated to the output indicator "Surface area covered by new and/or reconstructed infrastructure for the treatment of collected surface (rain) water". Furthermore, to measure the contribution of the abovementioned output indicator for national purposes, Lithuania additionally applies the result indicator monitoring the share of treated surface wastewater.

The **Latvian** OP interventions will contribute at a high level to a reduction in the number of areas and the proportion of the population endangered by flooding. This high level contribution is assigned due to the direct linkage between output and result indicators and the significant target values of the outputs. The Latvian OP's contribution to the SPO aimed at the prevention of the threat of flood and coastal erosion risks in urban areas was assigned as medium. The output indicator attributed to this SPO is "Population benefiting from flood protection measures". Although the target values are said to be based on observations taking into account priority territories under the threat of flood and coastal erosion in cities and/or inhabited areas and population under the risk living in these areas as well as planned activities, the linkage between the output and result indicator provided in the OP remains rather vague.

3.5.3. Conclusions

The CP interventions in all three **Baltic States** will contribute to the EU as well as to the national goals to reduce environmental risks and improve the protection against damage to coastal areas, water and land environment resulting from global warming and climate change. Their CP funded actions contributing to the programming period's overall 20-20-20 climate/GHG goals are, however, mainly located to and operative within the energy and transport policy areas.

During the programming period 2014 – 2020 the CP financial contribution (EU share) to the sector/policy area is about 56 million EUR in **Estonia**, almost 109 million EUR in **Lithuania** and 63 million EUR in **Latvia**. In terms of EU funding *per capita* these represent fairly equal financial contributions in all three **Baltic States**. Although the CP financial allocations on the Adaptation to climate change sector/policy area constitute one of the minor policy areas in the OPs, the investments in the Energy and Transport sectors/policy areas supplements the climate change policies of the Baltic States.

The scope and focus – in the case of **Estonia** almost 50 percent of the investment, in **Latvia** and **Lithuania** in excess of 80 percent – of the investments to reduce climate induced risks and upgrade the level of protection offered to citizens and their economic activities against environmentally-related threats, will probably secure most of the Baltic OPs' result goals within this policy sector. Moreover, with some Latvian exceptions, the assessed contributions of the planned interventions in order to reduce environmental risks and damages are generally quite high.

It should, however, be noted that the **Baltic States'** ability to reduce environmental threats is heavily dependent on the future development of worldwide GHG-emissions and thus on global warming and its consequences.

3.6. Environment and resource efficiency sector/policy area

3.6.1. EU policy objectives and CP interventions

EU policies within the Environment and resource efficiency sector/policy area are presented and elaborated in the General Union Environment Action Programme to 2020 and the EU Biodiversity Strategy to 2020.[83] The overall aim of the Union's environmental and resource policies is broken down into three focal areas; each with its goals and targets for the programming period 2014 – 2020. These main focal areas are as follows:

- To protect, conserve and enhance the Union's natural capital
- To turn the Union into a resource efficient, green and competitive low-carbon economy
- To safeguard the Union's citizens from environment-related pressures and risks to health and well-being

The focal areas of EU policies are also presented in the national strategic documents[84] of the **Baltic States**. These documents emphasise sustainable use of natural resources and the proper treatment of waste, the quality of water resources and the supply of drinking water, a healthy environment and environmental protection, biodiversity and the preservation of landscapes and other issues.

The results of the transformation of the EU and national goals into chosen SPOs in the Baltic OPs are shown in Table 17.

Table 17. Specific objectives of environment and resource efficiency sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Water supply and wastewater treatment	Compliant water management infrastructure in agglomerations with over 2000 p.e.	Enhance accessibility of water supply and wastewater treatment services and improve efficiency of the system	To develop and upgrade the quality of water supply and sewerage system services and to ensure connection possibilities
Biodiversity	Improved status of protected species and habitats	Improve the status of native plant and animal species, habitats and landscape	To preserve and restore biodiversity and to protect ecosystems
Cultural and natural heritage		Enhance relevance, number of visits and visibility of cultural and natural heritage, including public awareness on the surrounding environment	To preserve, protect and develop important cultural and natural heritage, as well as to develop related services
Waste management		Reduce municipal waste disposal in landfills and ensure proper storage of radioactive waste	To increase re-using, recycling and regeneration of various sorts of waste
Surface waters and rehabilitation of contaminated sites	Rehabilitated contaminated areas, bodies of water and wetlands	Improve the status of the Baltic Sea and other surface waters	
Pollution in urban areas		Reduce the level of threat to health and environment,	

[83] Publications Office of the European Union, 2011; 2014.
[84] Estonian Environmental Strategy 2030, National environment protection strategy (Lithuania), Environment Policy Strategy 2015-2020 (Latvia) and other.

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
		caused by urban air pollution by particulate matter and soil pollution by chemical substances	
Complex revitalisation of areas			Promotion of revitalisation of urban areas in Riga, ensuring efficient socioeconomic use of the area
			Revitalisation of territories through regeneration of degraded territories according to municipal integrated development programmes
Environmental monitoring			To ensure the development of environmental monitoring control system and timely prevention of environmental risks, as well as participation of the society in environmental management

Source: OPs information and aggregation by project team, 2016

As shown in the table, the SPOs of the **Baltic States** primarily target four main areas of action, namely:

- To protect and improve salt water (Baltic Sea), fresh (inland) and surface water resources
- Recycling of waste and reduction of the pollution that endangers the environment and human habitats
- Protection of biodiversity, native plants and animal species
- Enhancement of environmentally and culturally sustainable tourism

These areas of OP interventions apply – albeit to varying degrees – to all three Baltic States. Thus, **Estonian** efforts are concentrated on water protection, while the **Latvian** and **Lithuanian** interventions are a bit more mixed and tend to have a greater focus on waste management, the protection of biological habitats and species as well as environmentally friendly tourism. Furthermore, in the case of **Latvia**, some of the OP resources are also directed towards the need to attract private investments for urban renewal in Riga and to expand the number of employees in various centres of national/regional importance.

Financial allocations

The combined EU funding of this sector/policy area in the OPs of the **Baltic States** amounts to about 1.5 billion EUR. In funding terms, this represents the 5th biggest EU contribution among the 12 sectors/policy areas of the Baltic OPs.

The CP share in the overall level of public funding for the sector/policy area is moderate - less than one fifth in **Lithuania** and **Latvia** and one tenth in **Estonia**, as significant amounts are devoted from national public sources to this area. Despite the fact that the funding share is not sizeable in overall expenditure terms, the CP nevertheless plays a primary role in terms of major upgrades and new investments in the sector/policy area while national funding is largely used for maintenance of the infrastructure.

The comparison of EU funding per capita, excluding financial allocations in Latvia to the complex revitalisation of areas[85], results in a rather similar financial allocation being made in all three **Baltic States**.

[85] As rather similar investments in Estonian and Lithuanian OPs are not included under Environment and resource efficiency sector/policy area.

Table 18. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Environment and resource efficiency sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	254.3	2 538.7	194	1 933	10%
Lithuania	675.0	3 796.1	231	1 299	18%
Latvia	560.1	3 311.1	282	1 667	17%

Source: Project team calculations based on sources indicated in methodology section, 2016

The general distribution of the available funding between various interventions and targets differs somewhat between the three OPs of the **Baltic neighbours**. Thus, while most of the **Estonian** and **Lithuanian** OP resources are targeted towards improving the capacity for water treatment, management and safe water supply (50 –70%), the **Latvian** OP is more focused on the rehabilitation of environmentally damaged land/soil and infrastructure plus an effort to expand the number of businesses and jobs outside the Riga region (40 – 50%). All three **Baltic States** allocate some of the available funding to the protection of biodiversity and sensitive natural habitats (5 – 20%). Furthermore, **Lithuania** and **Latvia** also allocate some of their OP funding to the development of culturally and environmentally sustainable tourism (10 – 30%).

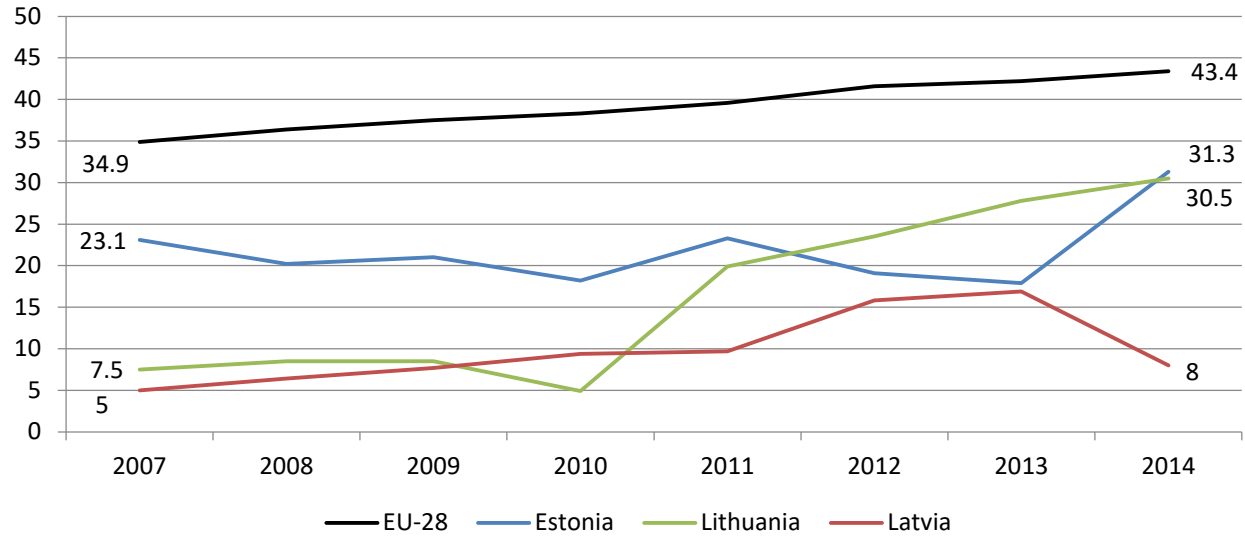
3.6.2. Main trends and expected impacts of the CPs

Two indicators are applied as context indicators for the analysis of the main trends and the expected CP impacts on the environment in the **Baltic States**: **recycling rate of municipal waste** and the **sufficiency index (terrestrial sites) of habitats directive**. Neither of these, however, was suitable for the CP impact assessment using macroeconomic modelling (see section 2.6. CP impact assessment). In addition, assessments of the OP's contribution to target attainment in all three Baltic States related to water supply and wastewater treatment services, and to the other country-specific objectives, are also provided.

Municipal waste consists largely of waste generated by households, but may also include similar wastes generated by businesses and public institutions and collected by the municipality. The indicator measuring the **recycling rate of municipal waste** includes material recycling, composting and anaerobic digestion.[86] In 2007, the **Baltic States** were far below the EU average in terms of waste recycling (Figure 20). During the period 2007 - 2014 this situation has however significantly improved in **Estonia** – the recycling rate increased from 23.1 to 31.3 percent. An even more positive trend were observed in **Lithuania** – the recycling rate of municipal waste increased from very low level 7.5 percent in 2007 to 30.5 in 2014. These changes were largely achieved due to EU funding.[87] The **Latvian** improvement was much slower – the municipal waste recycling rate increased from 5 percent in 2007 to 16.9 percent in 2013, however a reduction to 8 percent was observed in the following year.

[86] According to Eurostat.
[87] According to the Evaluation of the Efficiency of the EU Support to Waste Management in Lithuania and Identification of Financing Priorities for 2014-2020 (Ministry of Environment, ESTEP, 2014), since 2001 EU funding accounted for 66 percent of total financing for the waste sector in Lithuania.

Figure 20. Recycling rate of municipal waste (%) in Baltic States and EU



Source: EUROSTAT data, 2016

The **Estonian** OP did not select a result indicator to monitor changes in waste recycling. There is, however, an Estonian output indicator under the RTDI sector/policy area related to the recycling of waste. The likely success of further improvements depends not only on the capacities for recycling, but also on the behaviour of residents and other polluters. The Estonian environmental strategy 2030 highlights the citizens' increasing environmental awareness as a contributory factor in more efficient waste sorting, and thus also in the likely further growth of the municipal waste recycling rate.

The **Lithuanian** OP targeted that up to 2023 the share of municipal waste disposed in landfills should be reduced by more than half; and the share of paper, plastic, metal and glass waste in the municipal waste stream, prepared for re-use or recycling, should be increased from 17 percent in 2010 to 50 percent in 2023. OP investments in additional waste separation collection and preparation of waste for recycling capacities will be supplemented by public awareness raising measures (also funded by the OP) and new economic instruments of waste management (taxation). Considering the large amount of OP investments (more than 80 million EUR) and supplementing measures involved, the OP targets were assessed as realistic and the CP will be the main factor in attaining them.

While the recycling rate of municipal waste in **Latvia** in 2012 was only 15.8 percent[88], the recycling rate of all types of waste was 34.97 percent[89]. This indicates that municipal waste is the weakest element in the overall waste recycling portfolio. One of the main reasons is that the sorted waste collection system (paper, metal, plastics and glass) does not ensure the availability of this service across the whole territory of the country.[90] The target for 2023 is to have 59 percent of Latvian waste recycled. A significant increase in recycling capacity will be supported (423 120.5 tonnes/year) by providing around 40 million EUR of EU funding for that purpose. This capacity is sufficient[91] to attain more than 59 percent of Latvian waste recycled. The CP plays the main role here in the further improvement of municipal waste recycling.

The importance of CP investments in the waste management area is analysed in greater detail in the case of **Latvia**.

[88] Eurostat data.
[89] Latvian OP information.
[90] Latvian OP information.
[91] If 423 120 tonnes would be supported in total – 61.5 percent of recycled waste per year could be achieved.

CP interventions to increase the amount of recycling and regeneration of waste in Latvia

In the 2014-2020 programming period the Environment and resource efficiency sector/policy area under the Latvian Operational Programme "Growth and Employment" (OP) will receive more that 560 million EUR of total EU funding. The sector/policy area involves a wide range of support measures for private enterprises, as well as public entities, particularly – local municipalities, which have to provide their inhabitants with access to a clean and improving environment. One of the top priorities related to the protection of the environment and the promotion of energy efficiency is investing in the waste management sector to achieve compliance with the EU environmental *acquis*. Waste management will receive around 40 million EUR of EU funding. The largest share of waste consists of materials that can be recycled or recovered. Thus a reduction in the amount of biologically disposed waste and an increase in the volume of recycling, varying from 50 percent to 80 percent, depending on the type of waste, is required. These targets can be achieved by developing the system of separate waste collection and the deposit system for beverage containers.

The related specific objective is to reduce the volume of disposed waste and increase the reuse, recycling and recovery of various types of waste, thereby ensuring the efficient use of resources. The expected result is to reach 59 percent of recycled waste by 2023 (baseline in 2012 was 34.97%) which requires improvements in terms of the increase in the recycling rate for biodegradable waste, household waste and similar municipal waste, packaging (plastics, glass and metal), end of-life vehicles, and waste associated with electric and electronic equipment.[92] Additional waste recycling capacity envisaged as an output indicator in the OP (423 120.5 tonnes/year) is sufficient to attain 61.5 percent of Latvian waste recycled and that would surpass the targeted value of the result indicator. However the technical capacity is only part of the issue, as other waste management measures are also necessary as discussed in this case study.

In addition to the OP result indicator, national monitoring indicators are applied: total buried waste in thousands of tons per year, total dangerous waste generated in thousands of tons per year, municipal waste generated in kg per capita per year and total recycled dangerous waste in percentage per generated dangerous waste per year.[93]

The waste management issue is of particular importance for Latvia. Municipal waste generation in Latvia is below the EU average and the main treatment option remains disposal of waste in landfills (83% of waste compared with the EU average of 30% in 2013). Latvia is unlikely to meet the recycling target of 50 percent and landfill diversion target of 75 percent for biodegradable waste by 2020. Significant investments are required to put in place the necessary infrastructure for separate collection of packaging and biodegradable waste, and for increasing the recycling and composting rate along with market-based instruments and regulatory measures. Such regulatory measures here include the appropriate taxation of waste and pollution products, as well as extended producer responsibility to facilitate recovery, including composting. Revenues from the landfill tax and EU funding need be used to facilitate waste reduction more than other forms of waste management (waste hierarchy).[94]

The following four key activities will be supported under the OP to address the whole waste hierarchy: 1) preparation of waste for re-use; 2) preparation of all types of waste for recycling or recovery; 3) expansion of capacity of waste recycling or recovery companies; 4) development of infrastructure supporting recycling or recovery of waste (in particular, development of infrastructure for separate collection of households' and similar municipal waste in all waste management regions in order to ensure availability of services to all waste producers). These activities will be focused on such waste streams as household sector waste and similar municipal waste, in particular paper, metal, glass and plastic, biodegradable waste, construction and demolition waste, waste electrical and electronic equipment, used packaging, end-of-life vehicles.[95]

Evaluation of the CP investment for increasing the amount of recycling and regeneration of waste in Latvia during the 2007-2013 programming period reflects the results of such interventions. For example, from 2008 to 2013 the share of waste produced by the households' sector has decreased by 16.8% from 754 000 tons to 627 000 tons. However, considering the decline in the population[96], the per capita reduction has been 8.8% from 343 kg to 310 kg accordingly. In addition, by investing a total of EUR 226.3 million through the interventions ''Regional waste management system development" and "Separated waste management system development" *inter alia* an additional 25 000 tons of paper and boxes and paper packaging, and 5 000 tons of plastic and plastic packaging were delivered for recycling by the recipients of the financing from the above-mentioned interventions (in comparison, during the same time period (2008-2013) the total amount of recycling in Latvia was around 100 000 tons of paper and paper packaging waste, and around

[92] FMPlans_230714_PA_updated; Partnership Agreement for the European Union Investment Funds Programming Period 2014 – 2020
[93] Cabinet of Ministers Regulation 24.02.2009 No 175. "On National Environmental Indicators"
[94] COMMISSION STAFF WORKING DOCUMENT Country Report Latvia 2016
[95] FMPlans_230714_PA_updated; Partnership Agreement for the European Union Investment Funds Programming Period 2014 – 2020
[96] Population of Latvia has decreased from 2.192 million people in 2008 to 2.024 million in 2013.

147 000 tons of plastic and plastic packaging). The above-mentioned activities also resulted in the development of 1214 waste collection points[97], 6 waste fields, 8 composting waste fields and 8 recycling lanes as well as a number of other waste infrastructure developments.[98]

EU funding of around 40 million EUR under the OP will be supplemented with more than EUR 75 million of co-financing by recipients of EU funding - municipalities, municipal entities and enterprises. The expected quantitative outcome related to the reduction in the volume of disposed waste and the increasing reuse, recycling and recovery of various types of waste, thereby ensuring efficient use of resources, is 1000 new separated waste collection points, 19 new separated waste collection polygons, 25 specialised vehicles for collecting waste from container-less routes, and additionally – recycling plants that ensure recycling of an extra 172 000 tons of waste per year (increase of 42%). These outcomes will ensure that the result indicator of 59 percent (equal to 406 000 tones of recycled waste per year) by 2022 or earlier is reached. The results depend on such factors as the involvement of waste generators and the efficiency of mechanical processing technologies. However, taking into account the fact that the proposed solutions are complementary, the prognosis shows that the result indicator of 59 percent of recycled waste by 2023 will be met.[99]

To sum up, the impact of CP investment targeted at increasing the amount of recycled and regenerated waste is important for Latvia in order to meet the most significant requirements of the EU's environmental *acquis* – to ensure that the waste is used as a resource by implementing separated waste collection and recycling systems. However, considering that only a limited recycling infrastructure was in place in Latvia before the 2007-2013 programming period, additional measures need to be taken to increase overall recycling capacity. For enforcing OP measures and achieving 2020 recycling targets additional market-based instruments and measures need to be adopted by the Government of Latvia to complement the OP funding. Such market-based instruments as taxation of waste and pollution products need to be implemented. An increase in the Landfill tax on municipal waste in Latvia is also planned which will see it rise gradually until 2020. Such interventions are in line with EU practice and could permit the use of additional revenue from the Landfill tax to promote waste reduction.

CP efficiency can be increased by involving the whole waste recycling system within the eligible costs – equipment for recycling as well as the related infrastructure – separated waste collection points together with the specialised vehicles for collecting waste. As seen in the previous period when only including specific parts of the system, the number of applications for funding decreases.

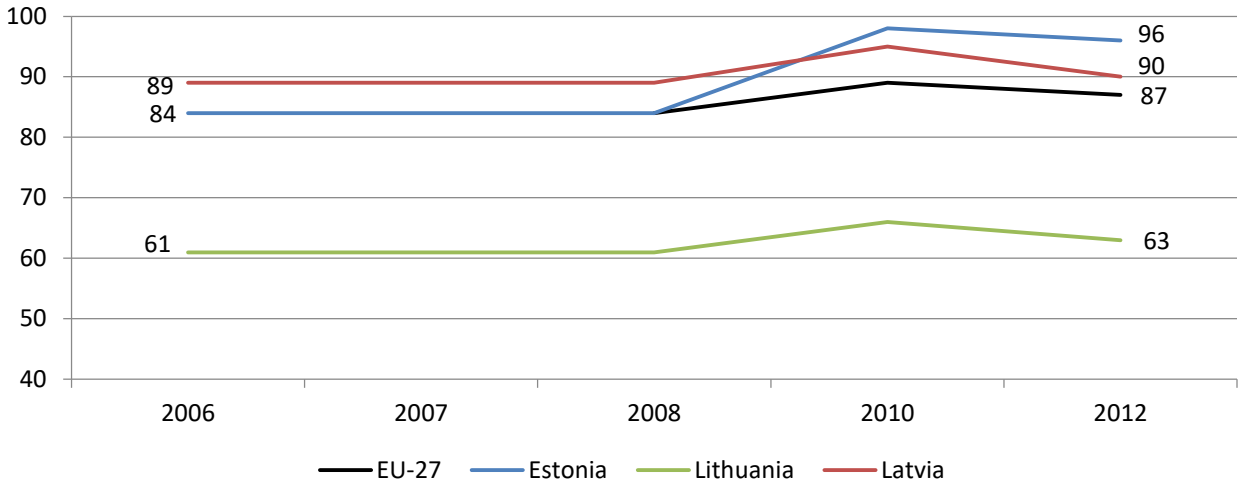
Additional regulatory measures focused on extending producers' responsibility to facilitate waste recovery, including composting, need to be adopted by the Government of Latvia, to complement the CP funding and market-based measures. Regulatory measures along with the additional income gained from the increase in the Landfill tax will ensure the continuous development of waste infrastructure while also reducing the amount of household waste and increasing the recycling rate.

Source: the case study was developed by the project team based on desk research, 2016

The **index of sufficiency (second context indicator)** measures the degree to which the habitats directive has been implemented in terms of different habitats/areas covered and the number of species under protection. Using this measure, the protected terrestrial areas in the EU-27 were considered to sufficiently cover 87 percent of species and habitats in 2012, while 13 percent of species and habitats were not yet covered by any proposed sites.[100] The sufficiency of sites covered by the habitats directive stood at 96 percent in **Estonia** and 90 percent in **Latvia** and exceeded the EU average. **Lithuania** had much lower rate (63 percent in 2012) than the other two Baltic States and was one of the worst performing countries in the EU in terms of this indicator.

[97] EC information
[98] Annual Report on implementation of the EU funds in the 2007-2013 planning period in Operational programme "Infrastructure and services" (OP) (ID No 2007LV161PO002) for year 2014
[99] Final report "European Union Funds 2014-2020 period potentially supported environmental protection activities economic benefits" http://www.varam.gov.lv/in_site/tools/download.php?file=files/text/Publikacijas/petijumi/vide//Lig_Nr_237005TP_KF_2014_2020_Noleguma_zin_V3_2_02122015_apvienotais.pdf
[100] Eurostat data and explanation

Figure 21. Sufficiency index (terrestrial sites) of habitats directive (%) in Baltic States and EU



Source: EUROSTAT data, 2016

Although it is not possible to calculate how much the CP investments may change the sufficiency index (terrestrial sites) of habitats directive, all three **Baltic States** will improve the conservation status of habitats and thus contribute to the biodiversity of the region. The comparison of expected contributions is mixed - in terms of the supported area it is highest in **Latvia** (23118 ha). **Estonia** (9000 ha) and **Lithuania** (1150 ha) support smaller areas, however, they envisaged financial allocations for that which are larger than in Latvia.

The CP impact on other OP objectives

In addition to these interventions, the **Estonian** OP is expected to make a high level contribution to the targets of water supply and sewage collection. The development of the relevant infrastructure will receive the majority of sector/policy area financial allocations. The more efficient management of water resources will also be (indirectly) supported by restoring the water regime in abandoned peat land and rehabilitating the landscape area. Eighteen ha of rehabilitated landscape area in Estonia will contribute significantly (at a high level) to the targeted increase in the proportion of nationally important past pollution sites that have been rehabilitated. The contribution to the targeted reduction of bodies of water with a need to eliminate the threat of worsening chemical or ecological condition was assessed as medium. It will be supported mainly by rehabilitation activities and the better management of sewage.

In **Lithuania**, a high level OP contribution to the attainment of the target value of the result indicator was indicated in the case of surface waters. Although the justification for this assessment is not without question, the linkages between the output and result indicators and their target values indicate the probability of a high level contribution. The share of good quality surface waters will be increased by the strengthening of the monitoring system, investments in the technical capacities of water bodies, etc. The OP results related to natural and cultural resources are measured by increasing awareness of environmental resources, the share of the population that visits cultural heritage sites and the increasing overall number of trips to such sites. The expected impact made by this combination of activities (natural and cultural heritage sites and territories landscaped and adapted for visiting, a public awareness campaign and tourism marketing measures) sums up overall to a rather high level of OP contribution. However, the Lithuanian OP contribution to higher accessibility in terms of water supply and wastewater treatment services was assessed as low. The indicator passports indicate that it is calculated to add only 2 percentage points to the baseline value.

In **Latvia**, a high level contribution is expected in the case of wastewater treatment services. The target value of the result indicator monitoring the share of inhabitants receiving centralised wastewater services should be achieved by providing the services to more than 58 thousand inhabitants planned in the OP.

Regarding the objectives of cultural and natural heritage, the Latvian OP aims to increase the nights spent by tourists in accommodation establishments as a result of natural and cultural heritage sites being supported and developed. Considering the rather limited target values of the output indicators (15 sites and 15 services) the overall contribution was assessed as medium. A low to medium contribution was assigned to achieving the target related to the revitalisation of areas. The OP targets the growth of private investments and new jobs in assisted areas (Riga and national/regional economic centres). Significant investments in support for the rehabilitation of urban areas, public and commercial buildings and various infrastructure objects are envisaged. However, the amount of private investment and new jobs largely depends on other factors (e.g. trends in the export markets, the business plans of enterprises, labour market situation, etc.) hence the OP's contribution to the results' targets is limited to a low to medium level.

3.6.3. Conclusions

CP interventions in the **Baltic States** occurring within the Environment and resource efficiency sector/policy area are mainly related to EU and national goals to protect and enhance natural capital and to safeguard people and habitats from environmentally-related pressures and health risks. Together with the CP interventions in the Adaptation to climate change sector/policy area[101], this will generate a substantial contribution to those overall sector policy goals. It should however be noted that the degree of success is largely influenced by how global climate change and its impacts on the environment in the Baltic Sea Region develops over the next 5-10 years.

Under the 2014-2020 OPs, **Estonia**, **Lithuania** and **Latvia** allocated to this sector/policy area 254 million EUR, 675 million EUR and 560 million EUR of the EU funding, respectively. Despite sizeable financial allocations the share of EU funds in the overall public funding envelope is rather moderate (10-18%). However the CP plays a primary role for major upgrades and new investments, since national funding in this area is largely used for the maintenance of the environmental infrastructure.

The 'state of the art' and the developmental prospects of the **Baltic States** in relation to the policy goals on water and land resources and biodiversity are indicated by two chosen context indicators, namely, the degree of recycled municipal waste and a common "sufficiency index" measuring the national implementation of the EU directive on habitats for protected species. Regarding the three **Baltic States'** ability to process and reuse different types of waste, they are still substantially below the average EU-28 standard. With the exception of Latvia, the situation has however improved significantly in recent years. The gap between **Estonia**, **Lithuania** and the EU average measured as share of recycled waste has shrunk substantially. With the help of ongoing and planned CP interventions, **Latvia** is also on track towards substantially higher rates of waste recycling. On the issue of biodiversity and available habitats for protected species, the situation is however rather more mixed. Estonia and Latvia score even higher than the EU average on the "sufficiency index", while Lithuania's performance is, according to this context indicator, very poor with no substantial improvement in sight.

It should, however, be emphasised that the heavy concentration of the Baltic CP interventions on water protection, waste management and the protection of biologically sensitive habitats will undoubtedly promote an improvement in the position of the three **Baltic States** in relation to these two context indicators over the next few years. Moreover, most of the CP investments targeting the goals of water/land protection and sensitive Baltic habitats and environments are assessed as contributing to a high level to the expected results in terms of positive environmental impacts.

The assessments of the OPs interventions in the **Baltic States** to promote environmentally friendly tourism and to raise public awareness of environmentally important resources are a little more mixed due to their dependence on external actors in the private sector, marketing efforts etc. It is a similar situation in respect of the assessment of **Latvian** ambitions to revitalise depressed urban areas and to expand the reach of the private sector economy and the labour market into important national and regional centres. Here, low to medium level assessments of the contributions to the expected CP results are more common. The main

[101] Please refer to Climate Change sector/policy area of the study.

reason is that the degree of success in these cases relies heavily on the private sector companies' willingness to invest and expand their operations in the assigned areas.

3.7. Transport sector/policy area

3.7.1. EU and national policy objectives and CP interventions

EU level strategic documents[102] emphasise a need to modernise and integrate the transport sector, reduce transport emissions, promote public transport and moving closer to zero fatalities in road transport. The European Union Strategy for the Baltic Sea Region targets region specifics by emphasising the need to promote accessibility in this area by improving external and internal transport links.

The abovementioned objectives are also indicated in the national strategic documents[103] of the **Baltic States**.

Country Reports[104] also emphasise some of the primary Transport policy issues. Attention is paid to **Estonia**'s still high, although improving energy intensity of the transport sector, limited access to public transport in non-urban areas and high level of reliance on passenger cars. A very low share of public transport is also emphasised in the case of **Lithuania**. **Lithuania** and **Latvia** are also criticised for low road safety. In addition, attention is drawn to the poor condition of public roads in **Latvia**.

Many of these objectives are targeted by the CP investments. The main objectives of the OPs of all three Baltic States are grouped according to their thematic similarity (Table 19).

Table 19. Specific objectives of Transport sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Sustainable / public transport	The share of users of sustainable means of mobility has grown	Promote sustainable mobility and develop environment-friendly transport to reduce carbon dioxide emissions	To develop EV charging infrastructure in Latvia
	Improved sustainable transport, including rail transport on TEN-T network		To develop the infrastructure of environmentally friendly public transport
			To promote security and compliance with environmental requirements at Riga International Airport
TEN-T network	Improved connections on TEN-T	Improve interoperability between national multimodal transport system and trans-European transport networks	To ensure a competitive and environmentally friendly TEN-T network promoting its safety, quality and capacity
	Improved sustainable transport, including rail transport on TEN-T network		To connect infrastructure of major cities with the TEN-T network
Mobility in other neworks		Enhancing regional mobility through developing regional connections to the main transport network of the country and implementing traffic safety measures	To increase security level in large ports and improve the mobility of the transport network
			To ensure necessary infrastructure on main flyovers of Riga and to prevent fragmentary nature of main streets
			To reconstruct the pavement of

[102] Please see: EU 2020 strategy, the White Paper "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system", The European Union Strategy for the Baltic Sea Region.

[103] For example, National Transport Development Plan 2014-2020 (Estonia), the National Programme on the Development of Transport and Communications for 2014-2022 (Lithuania), Transport Development Guidelines 2014-2020 (Latvia).

[104] Commission staff working documents: Country Report Estonia 2016, Country Report Lithuania 2016 and Country Report Latvia 2016

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
			state main roads increasing bearing capacity
			To increase regional mobility through improvement of the quality of state regional roads

Source: OPs information and aggregation by project team, 2016

The investments of **all three Baltic States** are mainly focused on improving external and internal transport links (e.g. building, reconstructing or upgrading roads and railway lines). All three **Baltic States** are also investing in the promotion of public and other environmentally-friendly transport (e.g. acquisition of environmentally-friendly public transport means, improvement of links between train stations and other modes and the development of tram lines etc.,). In addition, **Lithuania** and **Latvia** are also investing in reducing the number of road fatalities, something that was stressed in the Country reports[105].

Financial allocations

In financial terms, the **Baltic States** prioritise the Transport sector/policy area (20 percent of total EU funding allocated to the Baltic States). Across all of the sectors/policy areas, this sector receives the largest financial allocation in **Latvia** and the second largest in **Estonia** and **Lithuania**. Consequently, in **Latvia** EU funding per capita is nearly twice as high as in Estonia and Lithuania.

In all three **Baltic States** the CP contribution accounts for quite a low share in terms of total public national investments within the sector/policy area – only 12 percent in **Estonia** and just over 20 percent in **Lithuania** and **Latvia**. Although CP investments may seem to be quite insignificant, they nevertheless play an important role in upgrading the transport infrastructure, as national investments are mainly directed at maintaining previously created infrastructure.

Table 20. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Transport sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	524.8	4374.8	400	3331	12%
Lithuania	1028.3	4686.2	352	1604	22%
Latvia	1271.7	5491.0	640	2765	23%

Source: Project team calculations based on sources indicated in methodology section, 2016

In all three **Baltic States** the highest share of total financial allocations of the Transport sector/policy area is attributed to result indicators reflecting the upgrade of roads, railways or other areas of the transport infrastructure: around 50 percent in **Estonia**, around 30 percent in **Lithuania**, and more than 40 percent in **Latvia**. Public transport related indicators also receive substantial financial amounts – almost 40 percent in **Estonia**, around 36 percent in **Lithuania** and around 8 percent in **Latvia** (of total financial allocations).

In **Latvia** a notable financial amount (36% of total financial allocations) is also envisaged for transport emissions related indicators. In **Lithuania** this share is 8 percent of total financial allocations.

[105] Commission staff working documents: Country Report Lithuania 2016 and Country Report Latvia 2016

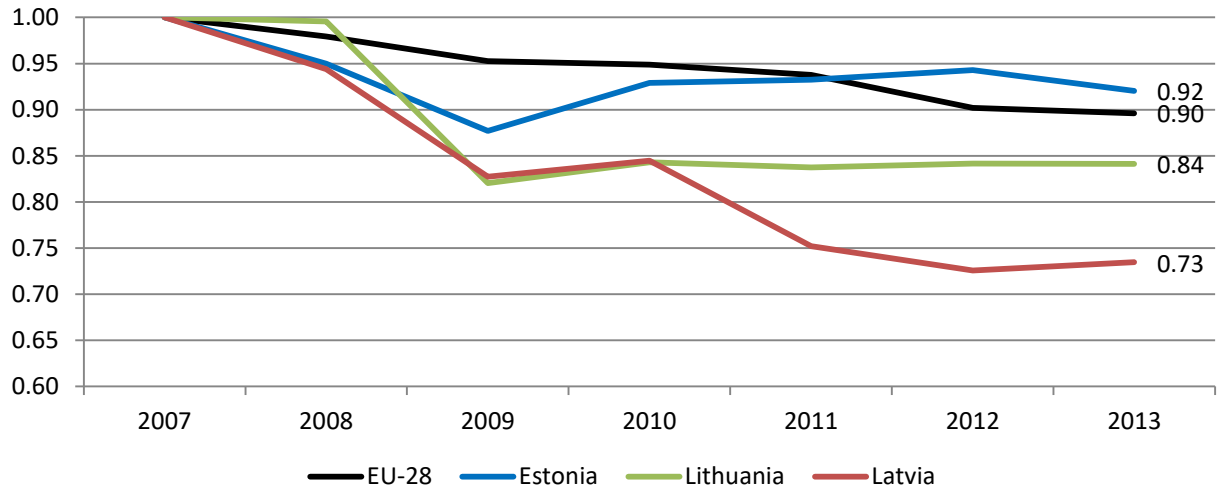
In addition, in **Lithuania** a large share of investments (around 28% of total resources) is also envisaged for reducing numbers of road traffic deaths.

3.7.2. Main trends and expected impacts of the CP

Greenhouse gas emissions from transport and **passenger cars (%) in total inland passenger-km** were selected as context indicators in order to analyse the main trends and expected impacts of the CP. In addition, other indicators are also discussed, namely, the **number of people killed in road accidents** and the **volume of freight transport**. All these indicators are highly relevant to the national and EU policy objectives, and most represent OPs targets.

The development of the level of **greenhouse gas emission from transport** reveals whether the Baltic States were successful in achieving their transport emissions reduction aims. Within the period of 2007-2013 EU greenhouse gas emissions (in CO_2 equivalent) decreased by 10 percent, while the decrease in the **Baltic States** varied from 8 percent in **Estonia** to 27 percent in **Latvia**, with **Lithuania** in the middle (Figure 22). A rapid growth of transport emissions was observed in these three converging economies during 2006-2007, thus the aforementioned decrease in the 2007-2013 period returned levels close to those seen in 2005. However, this is more than acceptable, as Europe 2020 national targets provide some space for emissions growth[106].

Figure 22. Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)



Source: project team analysis based on EUROSTAT data, 2016

Estonia has no direct targets established in the OPs to monitor changes in transport emissions; however, indirectly related targets do provide some information here. It is planned to double the number of train passengers to 8.4 million per year and to increase the share of public transport users, cyclists and pedestrians in mobility terms from 43 to 50 percent. This will contribute to a further reduction of emissions from transport.

Lithuania plans to reduce carbon dioxide[107] emissions (except from biomass) from household transport activities by 57.5 thousand tonnes. Attainment of this target would lead to a decrease equal to 1.3 percent GHG (in CO_2 equivalent) emitted from all transport modes which is a sizeable contribution in the light of a 3 percent increase in emissions from all transport observed during 2005-2013.

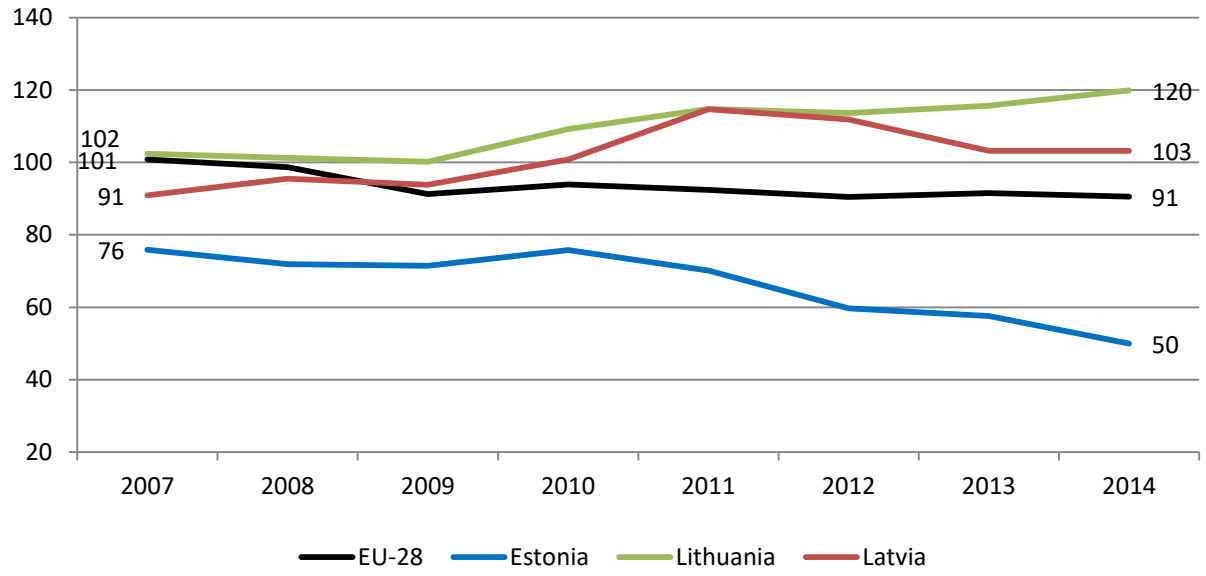
[106] Europe 2020 national emissions related targets are limiting emissions growth to: 11 percent for Estonia, 15 percent for Lithuania and 17 percent for Latvia, compared to 2005 levels.
[107] i. e. CO_2 emissions.

Latvia is planning to reduce CO_2 emissions in railway transportation by 82.86 thousand tonnes. Attainment of this target would lead to a reduction equal to 2.9 percent GHG (in CO_2 equivalent) emitted from all means of transport which is a significant contribution compared to a 9 percent decrease in emissions from all means of transport during 2005-2013.

Emissions from transport are affected by many external variables that include not only the CP investments, but also other factors such as traffic volumes, the affordability of private cars and available national funding for the development of public transport.

Volume of freight transport is an important external variable that could affect emissions from transport. Within the period 2007-2014 the volume of freight transport relative to GDP[108] decreased by 10 percent in EU, meaning that the growth of GDP was not increasing the demand for freight transport (Figure 23). An even more evident decrease was in **Estonia** (minus 34%). Meanwhile, in **Lithuania** and **Latvia** the volume of freight transport relative to GDP has increased by 17 and 14 percent respectively. For example, in **Lithuania** road freight transport carriage increased from 20 278 to 28 067 million tonne-kilometre during the period. Further growth in freight transport volumes in **Lithuania** and **Latvia** would negatively affect emission reduction targets.

Figure 23. Volume of freight transport relative to GDP - Index (2005 = 100)



Source: EUROSTAT data, 2016

As noted previously, in all three **Baltic States** the highest share of total financial allocations to the Transport sector/policy area is attributed to result indicators reflecting the upgrade of roads, railways or other transport infrastructure. Although the improvement of roads and railways leads to increases in traffic volumes, it also allows for increasing speed and helps reduce fatalities thus contributing to improving the values of the analysed context indicators.

This is illustrated in the case study below which is largely based on the results of the cost benefit analysis of typical CP investments within the sector thus providing some additional evidence on the impacts in quantitative terms.

[108] This indicator is defined as the ratio between tonne-kilometres (inland transport only) and GDP (chain-linked volumes, at 2005 exchange rates). It is indexed on 2005.

Upgrade and Development of Roads in Lithuania

EU funding under the OP for the transport sector/policy area amounts to more than 1 billion EUR in the 2014-2020 programming period. Around half of the financial allocations are designated to the development of roads and that makes the sub-sector particularly relevant for an in-depth analysis of the CP impacts. Using these investments 157 km of TEN-T network and 116 km of roads outside the network are planned to be reconstructed or upgraded. Furthermore, 11 km of new roads in the TEN-T network are planned to be built. The road network will be upgraded and better connections ensured through building access roads to the TEN-T network and the construction of bypasses in urban areas. The modernisation and development of road transport infrastructure also involves improvement of road traffic safety and environmental characteristics. Vilnius Western Bypass (Stage III) is envisaged as a major project. It should divert transit car traffic flows from the central part of the capital city and form a convenient connection between the system of Vilnius bypasses and the TEN-T network. This bypass is expected to contribute to the reduction of traffic congestion in the TEN-T network as well as to a reduction in traffic accidents, noise and other negative impacts on the environment.

Several indicators are foreseen in the OP to measure the results of CP interventions. The number of intermodal transport units transported in 2023 is targeted to be increased by 5 percent and the number of road traffic deaths in the TEN-T network to be reduced from 44 to 37 persons per year in comparison to the baseline year. In terms of the regional road network, the OP aims to reduce road traffic deaths from 131 to 113 persons per year and to reduce the duration of road trips (increase time savings) by 3.9 percent due to modernised roads and better organised traffic. In addition, the OP also planned to reduce carbon dioxide emissions (except from biomass) from household transport activities from 564.5 to 507 thousand tonnes.

The evaluation[109] of similar investments into roads in the programming period 2007-2013 indicates the main benefits of such investments and provides evidence how more and better roads can be transmitted into economic, social and environmental advantages. The results of the evaluation suggest that the main benefit of investments in roads is time savings. The cost-benefit analysis considered in the evaluation reveals that time savings represent 38 percent of all the benefits of such investments. Time savings are attained due to new bypasses constructed, new roads developed, the improved quality of road paving in respect of current roads and the reduced number of crossroads, etc.

These improvements allow for more efficient driving and lower fuel consumption. So the contribution to the context indicator - GHG emissions from transport - is positive as lower fuel consumption is equal to lower GHG emissions. On the other hand, high driving speed[110]driving or the underdeveloped nature of public transport options leads to the growth of private cars and thus higher GHG emissions. In such cases the contribution to this context indicator is negative. The impact of the 2014-2020 OP output indicators related to public transport to reducing GHG emissions is also expected to be low, since the values in respect of output indicators are rather small (120 new vehicles for the whole country). Considering the mixed impact of the OP and the trend in 2005-2013, when GHG emissions from all transport increased by 3 percent, this sets significant challenge for the OP in terms of reducing emissions. It is likely that the technological development of the engines, the affordability of private cars and national financial resources available for the development of public transport will be the main factors affecting the level of GHG emissions.

Road upgrades and the slow development of public transport will likely not reduce the value of the other context indicator - the share of passenger cars in total inland passenger (km). The sole impact of public transport development is expected to be around a 0.10-0.15 percentage point reduction in the cars share, which might be outweighed by the effect of improved roads and better conditions for the use of private cars.

Improved roads on the other hand will positively contribute to the OP result indicator “number of intermodal transport units transported”. It was assessed that the level of OP contribution is high, since 157 km of upgraded roads and 11 km of new ones will increase the average speed of intermodal goods transportation and make the network more favourable.

According to the aforementioned evaluation[111] road maintenance cost savings and avoided accidents represent 23 percent and 22 percent respectively of the benefits. Thus, investments in roads also positively affect another policy indicators - the number of people killed in road accidents remains a significant issue for Lithuania which is among the worst performing countries in the EU in this respect. However, the targeted decrease in the OP is quite modest

[109] Evaluation of Planning and Implementation Efficiency of the EU Structural Assistance for the Road Sector (Ministry of Transport and Communications of the Republic of Lithuania, BGI Consulting, 2013)
[110] http://www.eea.europa.eu/themes/transport/speed-limits
[111] Evaluation of Planning and Implementation Efficiency of the EU Structural Assistance for the Road Sector (Ministry of Transport and Communications of the Republic of Lithuania, BGI Consulting, 2013)

(around 10%) taking into account the current level of the problem.

Finally, the aforementioned evaluation reveals that a significant share of the benefits of investments in roads is attributed to vehicle operating cost savings. They cover 17 percent of all accrued benefits. Together with environmental impacts (emissions of GHG, pollutants and noise), complete the list of the main direct benefits of the CP interventions in this area.

Previous investments in the Vilnius bypasses were confirmed[112] to have had a highly positive impact on better connectivity and time savings. Positive environmental effects are also evident from analysis of pollution maps and surveys of the target population. The population is satisfied with the reduced level of noise and air pollution. By reducing traffic jams the new Vilnius bypasses also made a sizeable contribution to reducing GHG emission levels and reducing the concentration of pollutants in urban areas. The bypasses also contributed to economic development – new shopping and business centres were established in the area.

In addition, the wider social and economic impact of the CP must be considered. Macroeconomic modelling applied in the evaluation[113] of the 2007-2013 programming period provided several insights. Additional GDP created in 2007-2020 due to the investments in the road sector exceeded the amount of investment made by 2.3 times. This means that the benefits of the investment in the road sector outweighed the costs. Macroeconomic modelling also indicates that higher GDP increases occur during project implementation due to additional demand for related economic activities and enduring even after termination of the OP. Enduring longer-term benefits arise as a result of spill-over effects mainly due to the enhanced "stocks" of infrastructure. Considering the information provided in the evaluation of similar investments in the programming period 2007-2013, it could be roughly estimated that CP interventions into roads in the programming period of 2014-2020 should result in approximately 0.2 percent higher GDP in the long term, around 1 percent higher GDP in peak year (2019) and employment of around 3500 additional persons annually.

In sum, the impact of CP investments in the road sector manifests itself in time savings in relation to the movement of passengers and goods, reduced maintenance costs and avoided accidents, as well as vehicle operating cost savings. However, the CP impact on reducing GHG emissions is mixed. Improved roads create better conditions for using the private cars which are the source of emissions. This effect will likely not be outweighed by construction of bypasses and the development of public transport. Also there is an evident link between investments / results foreseen in the OP and the reduction in the number of people killed in road accidents, however this target should be more ambitious. In social and economic terms, benefits brought by the OP investments result in higher GDP and new jobs created in the overall economy.

The case study allows us to make some recommendations. Firstly, it was demonstrated that investing in roads brings significant benefits due to avoided accidents. This is extremely important for Lithuania which still faces problems in terms of low levels of road safety and should continue investment in road safety measures and supplement them with actions targeting driver behaviour. Secondly, it was demonstrated that the benefits to society and the economy can be clearly assessed by employing the cost benefit analysis method. This method should receive more attention during the selection of projects, thus prioritising investments providing the highest social and economic return for society.

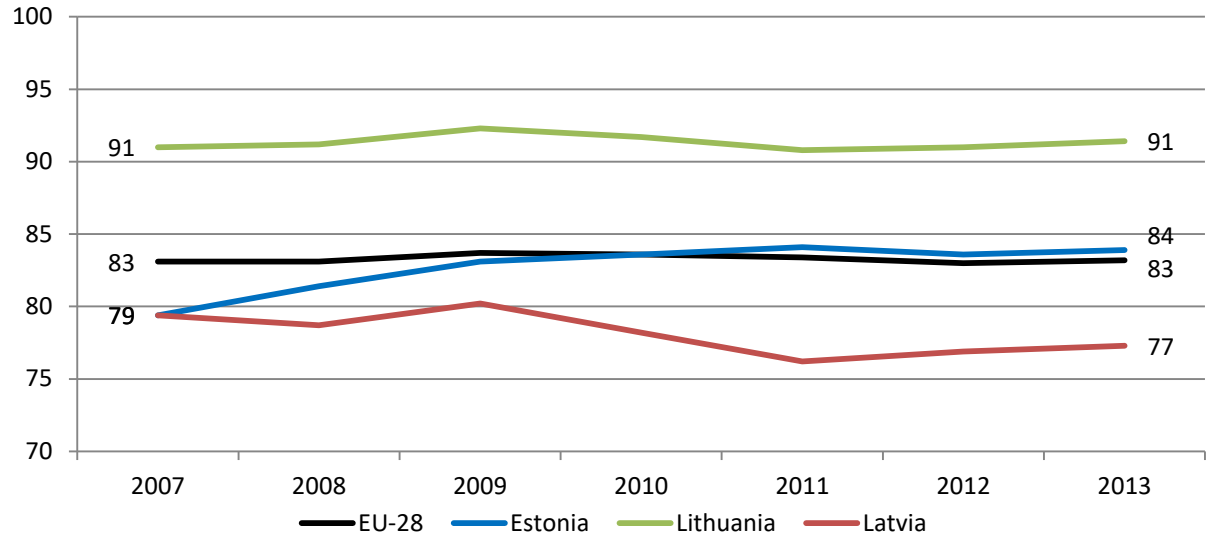
Source: the case study was developed by the project team based on desk research, 2016

Another context indicator is **passenger cars (%) in total inland passenger-km** which reveals whether the Baltic States were successful in increasing use of public transport (or reducing the use of individual passenger cars). Within the period 2007-2013 the EU share of passenger cars in total inland passenger-km remained stable (Figure 24). It also remained more or less unchanged in **Lithuania** (an increase of 0.4% was observed). Tendencies differ however in Estonia and Latvia. In **Estonia** the share of passenger cars increased by 5.7 percent, while **Latvia** managed to make some positive progress by decreasing the cars share by 2.6 percent.

[112] Evaluation of EU structural assistance impact on local and urban development in Lithuania (Ministry of Finance of the Republic of Lithuania, 2013)

[113] Evaluation of Planning and Implementation Efficiency of the EU Structural Assistance for the Road Sector (Ministry of Transport and Communications of the Republic of Lithuania, BGI Consulting, 2013)

Figure 24. Passenger cars (%) in total inland passenger-km



Source: EUROSTAT data, 2016

As noted in relation to the previous context indicator, **Estonia** plans to double the number of train passengers to 8.4 million per year and to increase the share of public transport users, cyclists and pedestrians in mobility terms from 43 to 50 percent. If these OP targets were achieved, the share of passenger cars in total inland passenger-km would be reduced by around 3 percentage points, which is an ambitious expectation in the light of the observed 5.7 percent increase over the period 2007-2013. On the other hand, such high targets can be explained by the fact that the renovation of the railway infrastructure was completed just before the end of the previous period, thus, there was the time when the use of public transport due to renovation works was limited. With the continuing investments during the current period into the railway infrastructure and completely new trains with much more departures covering the whole territory of Estonia, an increase in the number of train passengers becomes plausible, which was already demonstrated by almost 50 percent increase from 4.2 million in 2013 to 6.6 million in 2015 in the number of annual rail passengers due to new trains and modernised railway infrastructure.

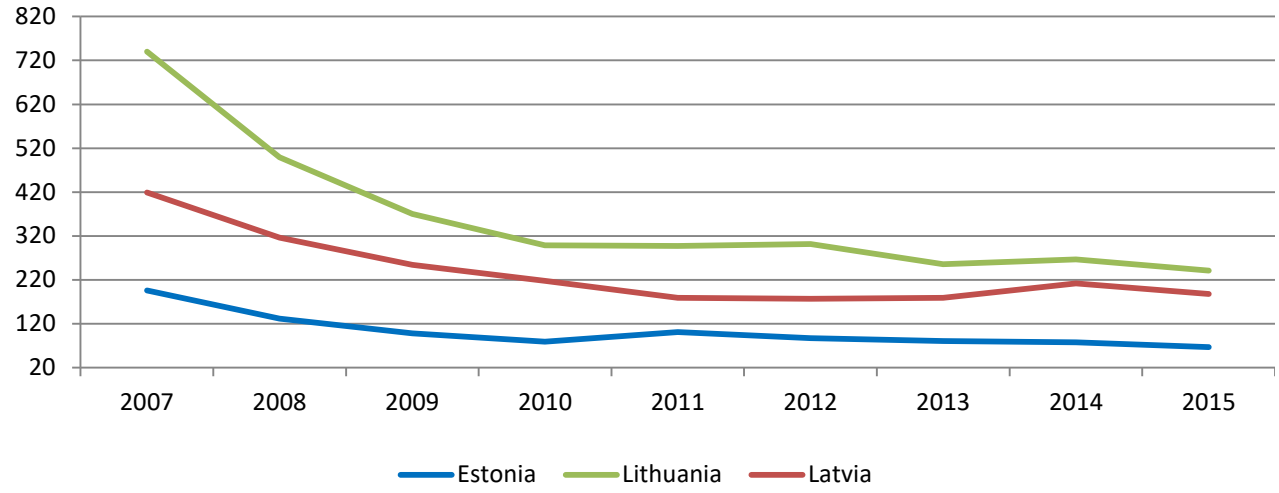
Lithuania plans to increase the number of passengers in public urban transport by 3.9 percent (from 234.9 to 244.0 million passengers). Having attained this OP target, the share of passenger cars in total inland passenger-km would be reduced by around 0.10-0.15 percentage points, compared to the observed 0.4 percent increase in the period 2007-2013.

Meanwhile, **Latvia** plans to increase the number of passengers of environmentally friendly public transport by 1.9 percent (from 86.81 to 88.42 million passengers). Attainment of this OP target would reduce the share of passenger cars in total inland passenger-km by up to 0.1 percentage point which is nevertheless a rather modest change compared to the observed 2.6 percent decrease during 2007-2013.

Use of public transport is however affected by many external variables including but not limited to CP investments. As such, the improved affordability of private cars, a lack of financing for public transport or the insufficient level of car taxation may not allow for reductions in the use of individual passenger cars.

One further trend related to the OPs objectives is the **number of people killed in road accidents**. In all three **Baltic States** a sizeable improvement in the situation was observed during the period 2007-2015 (Figure 25). The greatest reduction was observed in **Lithuania** and **Estonia** which managed to reduce the number of deaths by around 3 times. In **Latvia** a reduction by more than 2 times was observed. Despite such reductions, the number of deaths per 100 000 inhabitants in **Lithuania** (8 deaths) and **Latvia** (10 deaths) remains extremely high compared to **Estonia** (5 deaths).

Figure 25. Number of people killed in road accidents



Source: EUROSTAT and National Statistical Offices data, 2016

Estonia in its OP is not explicitly seeking to reduce the number of fatalities in the road sector and has no related indicators. Achieving results in terms of reducing the share of low quality roads on TEN-T would of course contribute to a further reduction in the number of deaths, however, the lack of explicit result indicators does not allow for an identification of the scale of the impact.

Meanwhile, **Lithuania** is planning to reduce the number of road traffic deaths from 44 to 37 persons per year in the TEN-T network and from 131 to 113 per year in terms of the non TEN-T network. If this OP target was achieved, the number of people killed in road accidents would be reduced by almost 10 percent, which is quite a modest change compared to the observed decrease of 64 percent during the period 2007–2014.

Although TEN-T network safety is mentioned in one of the SPOs[114], **Latvia** in its OP has no result indicators related to the reduction of deaths in road accidents. Again, in a similar manner, reducing the share of main motor roads in either a bad or a very bad state of repair in the country would undoubtedly contribute to a further reduction in the number of deaths. Similarly though, the lack of result indicators clearly related to deaths in road accidents does not allow for an assessment of the extent of the contribution of the OP investments.

After a significant reduction in the period 2007-2014, the pace of reductions in terms of the number of people killed in road accidents will likely slow in all three **Baltic States** as less space remains for improvements. The pace of reductions may be further weakened by unfavourable developments in respect of external factors such as the affordability of private cars or the behaviour of road users.

The CP impact on other OP objectives

In addition to the above mentioned impacts, the **Estonian** OP envisaged using an additional result indicator to monitor changes in the sector/policy area, namely, the number of international travellers per year (air-, maritime-, and bus transport). The CP contribution to attaining the target value of this indicator was assessed as medium, taking into account the investments planned in respect of ports, airports and roads.

The **Lithuanian** OP also envisaged additional result indicators. One such group of indicators relates to time savings, namely, average speed of passenger train, average duration of aircraft manoeuvring, and the duration of road trips. The scale of the investments planned allows for an assessment of the CP contribution to the attainment of the target values of these indicators as high. Another group reflects freight volumes,

[114] SPO "To ensure a competitive and environmentally friendly TEN-T network promoting its **safety**, quality and capacity".

namely, the number of intermodal transport units transported and freight transported by inland waterway transport. The CP contribution to attaining the targeted value of the number of intermodal transport units transported was assessed as being medium, since upgraded railway lines (74 km) and roads (157 km upgraded, 11 km new) will increase the average speed of intermodal goods transportation and make the network more favourable. In the case of freight transported by inland waterway transport, the CP contribution is low, as Inland water mobility will be supported by improving economic conditions or creating inland waterways (20 km are planned). Even though the output indicator is directly related to the attainment of the value of the result indicator, the total length of improved inland waterways comprises only a small part of the total length of inland waterways used for freight transportation. In addition, a significant increase (30%) in the amount of freight transported by inland waterways is targeted.

Meanwhile, the **Latvian** OP envisaged additional time related result indicators - average vehicle delay time and average idle time while in raid due to bad weather per year. The CP contribution to attaining the target values of these indicators was assessed as medium to high and medium, respectively, taking into account the scale of investments planned.

3.7.3. Conclusions

In the Transport sector/policy area the **Baltic States** are currently tackling a number of well known problems. Despite recent improvements, a lot still remains to be done. Greenhouse gas emission from transport remains high in **Estonia**. **Estonia** and **Lithuania** are experiencing a continued high level of reliance on passenger cars while low levels of road safety remain a significant problem in **Lithuania** and **Latvia**.

To support progress in the 2014-2020 programming period all three **Baltic States** designated a large share of overall CP funds to the development of this sector/policy area. The largest amount was dedicated by **Latvia** and **Lithuania** – almost 1 300 million EUR and more than 1 000 million EUR of EU funds respectively. Meanwhile, **Estonia** plans to invest more than 500 million EUR. In **Latvia** this is the largest share of financial allocations among all sectors/policy areas of the OP. In both **Estonia** and **Lithuania** the Transport sector/policy area receives the second largest share.

Investments in all three **Baltic States** OPs focus in the main on upgrading roads, railways or other transport infrastructure as well as on the promotion of public and other environmentally-friendly transport forms. **Latvia** not only has dedicated the highest total amount of CP investments to the Transport sector/policy area but its funding per capita is nearly twice as high as in **Estonia** and **Lithuania** suggesting that **Latvia** considers the Transport sector to be of a much greater financial priority in the CP than the two other Baltic States. The CP contribution in comparison to total national investments within the Transport sector amounts to only 12 percent in **Estonia** and a little more than 20 percent in **Lithuania** and **Latvia**. It is however very important as it allows for the implementation of new large infrastructure projects, while the majority of national financing is concentrated on the maintenance of existing infrastructure. The planned interventions in all three **Baltic States** are expected to contribute to modernising and integrating the transport sector, reducing transport emissions, promoting public transport and moving closer to zero in terms of road transport fatalities.

Despite significant reductions in transport GHG emissions during the period 2007-2013 in all three **Baltic States** a rapid growth of transport emissions was observed during 2006-2007. The Europe 2020 national targets do however provide some space for some growth in emissions. The lack of explicit result indicators does not enable us to identify the scale of the CP impact on transport emissions reduction in **Estonia**; however, indirectly related targets allow us to expect some positive impact in terms of CP interventions. In the case of **Lithuania**, attainment of the OP targets would, all other things being equal, lead to a reduction in emissions from transport by 1.3 percent, and in the case of **Latvia** this would lead to a 2.9 percent reduction. This is a sizeable contribution taking into account the change observed during 2005-2013 (4% increase in Estonia, 3% increase in Lithuania, and 9% decrease in Latvia). Thus, the targeted reduction would be equal to almost half of the increase observed in Lithuania and to one third of the reduction recorded in Latvia during the 2005-2013 period.

Investments will also facilitate increasing use of public transport (or reducing the share of passenger cars in total inland passenger-km). In the case of **Estonia**, attainment of the OP targets would lead to a reduction in the share of passenger cars in total inland passenger-km by around 3 percentage points, which is an ambitious, however, reasonable expectation taking into account the recent trends. In the case of **Lithuania** attainment of the OP targets would lead to a reduction of about 0.10-0.15 percentage point, while in the **Latvian** case – by up to 0.1 percentage point which is quite a modest contribution, comparing to the observed 0.4 percent increase and 2.6 percent decrease, respectively, during 2007-2013.

The CP impact on the other OP objectives is however rather mixed. In most such cases the extent of the contribution was assessed taking into account the scale of the investments planned.

In all three **Baltic States** the highest share of total financial allocations in the Transport sector/policy area is attributed to result indicators reflecting the upgrade of roads, railways or other transport infrastructure. Improvements to roads and railways will bring about a set of benefits that will directly contribute to the improvement of the analysed context indicators, as illustrated in the case study. The case study revealed that the impact of CP investments in the road sector is primarily manifest in time savings relating to the movement of passengers and goods, reduced maintenance costs and avoided accidents, as well as vehicle operating cost savings. Some investments will also have positive environmental effects such as reduced GHG emission levels. Thus there is an evident link between investments / results foreseen in the OP and the analysed context indicators (GHG emission levels, number of people killed in road accidents), with the high level of CP contribution to the trends observed. As investments in roads bring significant benefits due, for instance, to avoided accidents, there is a need to continue investments into road safety measures, especially in **Lithuania** and **Latvia**, each of which continue to face problems in terms of low levels of road safety.

In social and economic terms benefits brought by the OP investments result in higher GDP and new jobs created in the overall economy. Macroeconomic modelling applied in the evaluation[115] of the 2007-2013 programming period demonstrated that the additional GDP created in 2007-2020 due to the investments in the road sector exceeded the amount of investment made by 2.3 times.

3.8. Employment sector/policy area

3.8.1. EU and national policy objectives and CP interventions

The EU 2020 strategy set the target of having 75 percent of 20-64 year-olds in employment. Various policy objectives are foreseen in the flagship initiatives[116] of the strategy to support the target: improvement of flexibility and security in labour markets, equipping people with the right skills for the job market, improvement of the quality of jobs and working conditions, enhancement of education systems and facilitation of the entry of young people, ensuring equal opportunities, etc. In addition, attainment of the target is significantly related to industrial and education policies that provide new jobs and the right skills for the labour market.

The **Baltic States** have national targets in relation to the EU strategy 2020 employment target. The highest is set in **Estonia** – 76 percent employment rate; in **Latvia** – 73 percent and in **Lithuania** – 72.8 percent.

EU employment policies are reflected in the national strategies[117] of the **Baltic States**. The strategies emphasise the need to support a higher employment rate and improved participation in the labour market of various target groups, particularly youth and elderly people. The problem of long term unemployment is also

[115] Evaluation of Planning and Implementation Efficiency of the EU Structural Assistance for the Road Sector (Ministry of Transport and Communications of the Republic of Lithuania, BGI Consulting, 2013)
[116] Flagship initiative „Agenda for new skills and jobs" and agenda "Youth on the move"
[117] Estonia 2020, The Programme for Employment Growth 2014-2020 (Lithuania), Inclusive Employment Guidelines 2015-2020 (Latvia), etc

tackled in all three Baltic States. CSRs 2016 provided some recommendations related to employment policy in **Lithuania** and **Latvia** (CSR 2016 for **Estonia** did not provide related recommendations).

Lithuania was advised to strengthen investment in human capital and address skills shortages by pursuing more active labour market policies and applying other means. The role of social dialogue mechanisms should also be strengthened. There was also a recommendation related to the coverage and adequacy of unemployment benefits and social assistance.

Legal improvements relating to unemployment benefits and social assistance in **Lithuania** are mainly implemented using national sources, while social dialogue is strengthened using the CP financial assistance[118]. In terms of active labour market policy measures they are largely financed by the CP financial allocations and the implementation of the relevant CSR recommendation is critically dependent on the OP resources as only public works are financed by national resources with the rest of these measures supported by CP investments.[119]

For **Latvia** the CSR advised the need to step up measures supporting recipients in finding and retaining work, including through increased coverage of activation measures. As in Lithuania, CP financial allocations in Latvia play the main role in financing active labour market policy measures as only the community jobs programme and part of the wage subsidy programme for people with disabilities are currently financed by national resources (the state special employment budget) while the rest of the active labour market policy measures are supported by CP investments.[120]

The CP will support the main employment policy objectives of the **Baltic States**. The objectives of the OPs are grouped according to their thematic similarity (Table 21).

Table 21. Specific objectives of Employment sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Opportunities for employers	Business activity has grown outside the urban areas of Tartu and Tallinn	Diversify economic activities and improve conditions for attracting investment in support of job creation in target territories (urban areas)	To improve labour safety, especially in enterprises of hazardous industries.
		Increase labour demand by promoting entrepreneurship of the population, in particular those who face difficulties on the labour market	
		Raise understanding of the society, business and public sector on the application of principles of equality between men and women and non-discrimination ...	
Capacities of the unemployed and vulnerable groups	Increased labour market participation and employment of people with reduced ability to work; slowing the decline in the working-age population's ability to work	Increase employment, especially among the long-term and unskilled unemployed and people with disabilities	To raise the qualification of the unemployed and improve their skills according to the demand of labour market.
	Increased employment of the target groups of lower employability who have participated in active labour market measures	Reduce the number of young people between 15 and 29 years of age not in employment, education or training	To increase employment of young people not in employment, education or training and to facilitate their participation in education within

[118] SPO related to social dialogue is attributed to Social inclusion sector/policy area of the study.
[119] Consultation with Chief specialist at Structural Support Policy Division, Department of European Union Structural Support at Ministry of Social Security and Labour of the Republic of Lithuania.
[120] Consultation with Chief Expert at the EU funds department at the Latvian Ministry of Welfare.

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
			the framework of the Youth Guarantee
			To prolong preservation of capacity for labour and employment of elderly employees.
Capabilities of labour market services		Improve the quality and accessibility of services provided by labour market institutions	To create a system of anticipation and management restructuring in labour market, ensuring its connection to the Employment barometer.
		Improving the effectiveness of a public employment service and making it more results-oriented	

Source: OPs information and aggregation by project team, 2016

The interventions of the **Baltic States** can be summarised as falling into three labour market policy pillars: opportunities for employers, capacities of the unemployed and vulnerable groups (in terms of participation in the labour market), and capabilities of labour market services. These pillars apply – albeit to varying degrees – to all three Baltic States.

More particularly, the **Estonian** OP highlights the opportunities for employers and jobs creation outside the urban areas of Tartu and Tallinn. As regards the capacities of the unemployed, the OP highlights the target group of people with reduced abilities to work and other groups of lower employability, such as young and old persons and the long-term unemployed.

In **Lithuania**, particular attention is paid to opportunities for employers and jobs creation in targeted territories (urban areas). Those unemployed to be targeted by various counselling services and active labour market policy measures involve the youth, long-term unemployed, disabled and other vulnerable groups.

In the **Latvian** OP particular attention is paid to youth and elderly employees. In terms of enterprises, they will receive support to help improve safety at work, especially in hazardous industries. The capabilities of labour market services in Latvia will be strengthened by the launch of a labour market matching and anticipation system.

Financial allocations

In terms of the financial allocation of EU funding, the Employment sector/policy area in **Estonia** and **Lithuania** belongs to the top 5 largest sectors/policy areas. Lower financing in **Latvia** is explained by the fact that the SPO related to job creation in the targeted territories was selected for implementation under a thematic objective that belongs to the SMEs sector/policy area rather than that of Employment.

In terms of CP funding in comparison to total national investments the ratio is highest in **Lithuania** (50%), revealing the significance of EU funding in the Employment sector/policy area. The shares in **Estonia** and **Latvia** are also sizeable, i.e. 29 percent and 19 percent respectively, particularly taking into account the fact that national investments include financial resources for unemployment benefits. The CP financial allocations are assessed as highly significant for the implementation of labour market activation measures in all three **Baltic States**.

Table 22. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Employment sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	394.4	1 381.3	300	1052	29%
Lithuania	688.3	1 370.7	236	469	50%
Latvia	164.4	867.8	83	437	19%

Source: Project team calculations based on sources indicated in methodology section, 2016

The distribution of financial allocations to the attainment of various objectives within the sector/policy area sees some differences among the **Baltic States**. In **Estonia**, 43 percent of financial allocations to the Employment sector/policy area are designated for the provision of services for people assessed as having only a partial ability to work, while one third of the total allocation is designated for enterprises in the targeted territories.

In **Lithuania** the targeted territories will receive about 46 percent and actions for the unemployed more than 50 percent of total financial allocations for this sector/policy area.

The major share (about 70%) in **Latvia** and the highest among the Baltic States is designated to addressing the issue of capacity raising among the unemployed. About 15 percent is envisaged for the targeting of inactive persons. The remaining objectives are expected to receive lower shares.

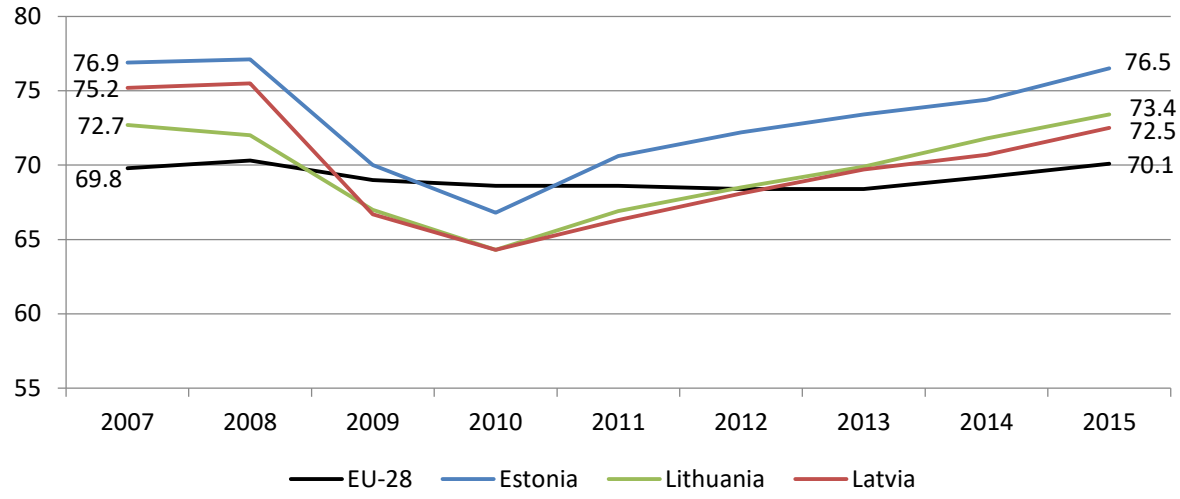
3.8.2. Main trends and expected impacts of the CP

Several indicators were selected in order to analyse the main trends and expected impacts of the CP. **Total employment rate** and **share of young people neither in employment nor in education and training** were selected as context indicators for the in-depth analysis. In addition, other policy indicators are also discussed, namely **unemployment of elderly people** and **financing to labour market policy measures as percentage of GDP**. All these indicators represent OP targets and are highly relevant to the national and EU policy objectives.

Total employment rate represents the share of persons aged 20 to 64 that are in employment.[121] In recent years employment rates in the **Baltic States** were almost at peak levels even surpassing the EU-28 level and reaching 76.5 percent in **Estonia**, 73.4 percent in **Lithuania** and 72.5 percent in **Latvia** (Figure 26). The same figure clearly describes the decline in employment rates in the period 2009-2011 due to the economic crisis and highlights employment rates in relation to the overall performance of these economies.

[121] Eurostat

Figure 26. Total employment rate (%) in Baltic States and EU

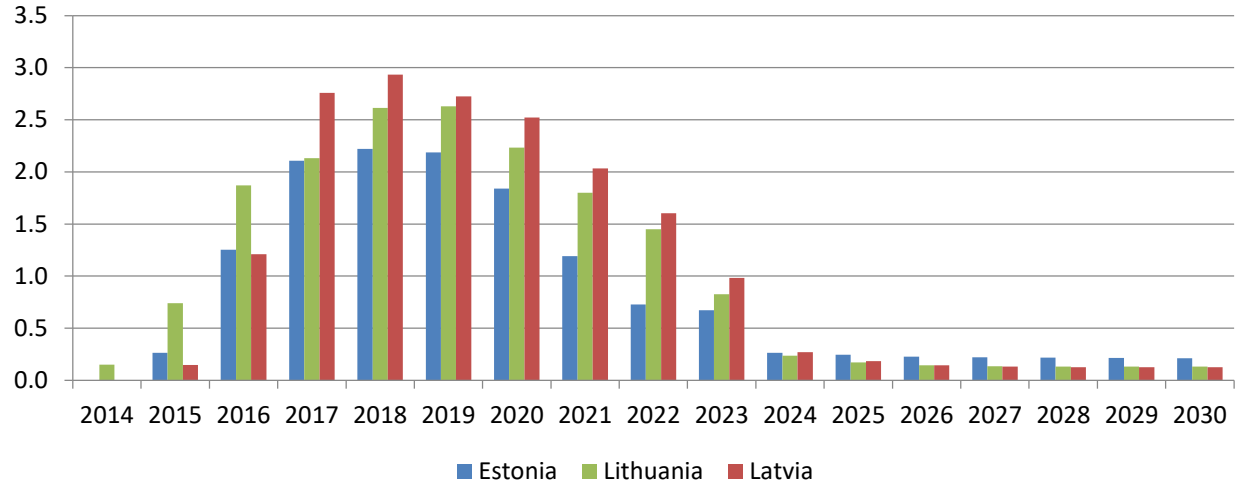


Source: EUROSTAT data, 2016

The CP investments will support employment growth by adding 1.8-2.5 percent to the level of employment in 2020 and the **Baltic States** should be very close to attaining their national targets in relation to the EU 2020 strategy. It is however important to stress that in 2015, employment rates in the **Baltic States** were almost at their historic peak and economic development fluctuations put significant pressure on the Baltic States' ability to maintain these heights in performance terms.

Macroeconomic modelling shows that the highest impact of CP interventions (all sectors/policy areas) is expected during the OPs implementation phase. The CP's impact on the employment level in the **Baltic States** peaks in 2018-2019 and due to the CP investments the level in these years will be increased by 2.2-2.9 percent. Among the Baltic States the extent of the impact is expected to be largest in **Latvia** - during 2014-2023 the average annual impact averages out to 1.7 percent. The respective impact in **Estonia** should be around 1.3 percent and 1.6 percent in **Lithuania**. The impacts after the OPs completion in 2023 up to 2030 will be much smaller: 0.23 percent in **Estonia**, 0.15 percent in **Lithuania** and 0.16 percent in **Latvia** on average annually.

Figure 27. CP impact on employment rates, percent

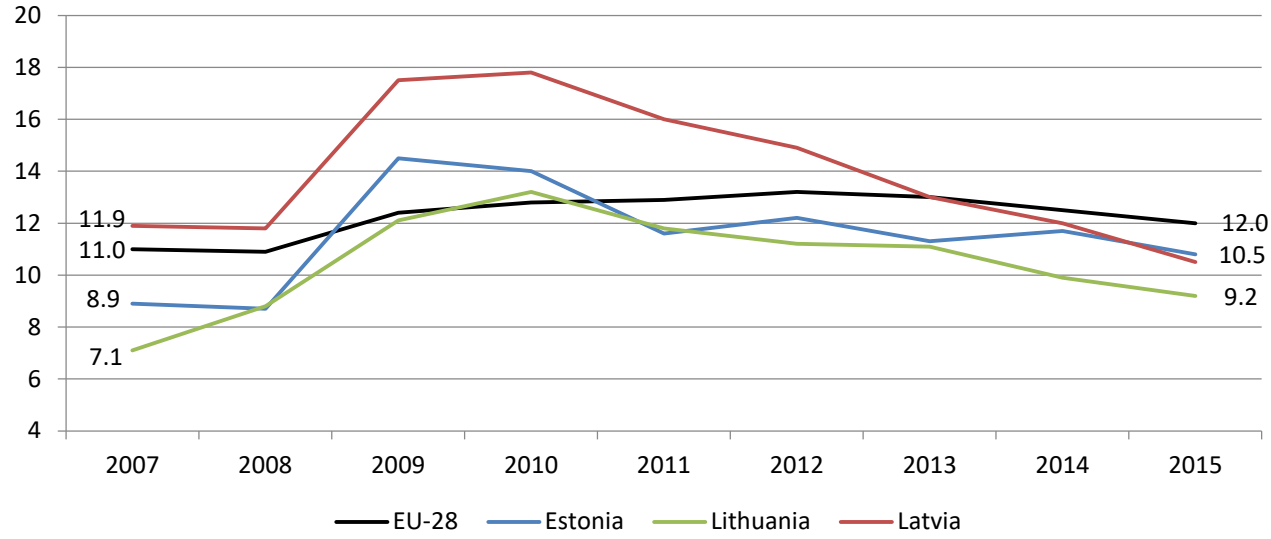


Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Youth unemployment is another key issue for both the EU and the **Baltic States'** employment policies. Since the trends in youth unemployment rates are discussed under the Social inclusion sector/policy area, another indicator is analysed here - **share of young people neither in employment nor in education and training**.

Currently about 10 percent of young people (15-24 years) are neither in employment nor in education and training. The level rose during the economic crisis and peaked at 14.5 percent in **Estonia**, 13.2 percent in **Lithuania** and 17.8 percent in **Latvia**. The levels in the **Baltic States** in 2015 were below the EU-28 average.

Figure 28. Share of young people neither in employment nor in education and training ((15-24 years) - % of the total population in the same age group) in Baltic States and EU



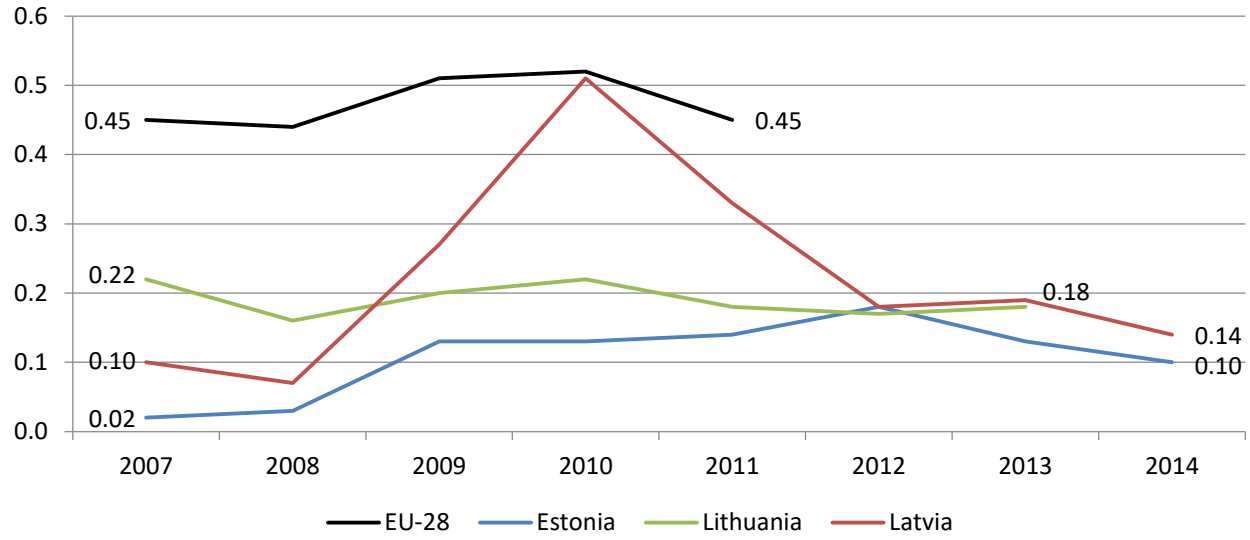
Source: EUROSTAT data, 2016

Summing the expected CP impact with the other trends, it is estimated that in 2023 the share of young people neither in employment nor in education and training may be around 10 percent in **Estonia**, 8.5 in **Lithuania** and 11.6 in **Latvia**. This projection is sensitive to overall economic development, as the dynamics in 2009 and 2010 clearly indicated that during the economic downturn the share of young people neither in employment nor in education and training increased significantly.

The CP impact analysis suggests that significant improvements in terms of this indicator are derived from a sustained boost to the economy. Macroeconomic modelling shows that during the OPs implementation the CP investments on average reduced the share by 1.3 percent in **Estonia**, 1.4 percent in **Lithuania** and 0.4 percent in **Latvia** annually. The impacts after the OPs completion in 2023 up to 2030 on average equate to 0.5 percent in **Estonia** and **Lithuania** and 0.1 percent in **Latvia** annually. The lower impact in **Latvia** is explained by the lower reaction of this indicator to the improved level of economic performance observed in the period of 2000-2014.

The trends of another relevant indicator - **unemployment rate of elderly people** - are discussed in the chapter on the Social inclusion sector/policy area. It is expected however that elderly peoples' situation in the labour market should improve due to the interventions. Based on output indicators for elderly unemployed that are envisaged in the Lithuanian and Latvian OPs, it is estimated that in **Lithuania** around 67 million EUR are directly attributed to the elderly unemployed issue, while in **Latvia** - around 24 million EUR are allocated to addressing this issue.

Figure 29. Financing to labour market policy measures (categories 2-7) as percentage of GDP in Baltic States and EU



Source: EUROSTAT data, 2016

Financing of labour market policy measures (categories 2-7) as a percentage of GDP in the **Baltic States** was significantly below the EU-28 average (Figure 29). While the recent available data[122] for the EU-28 indicates that the financing equated, on average, to around 0.45 percent of GDP, the level in the Baltic States varied and was generally at a much lower level - between 0.1 to 0.18 percent of GDP. As in the programming period of 2007-2013 the CP resources in 2014-2020 will remain the main funding source for active labour market policy measures in the Baltic States. The analysis of financial resources attribution to output and result indicators suggests that in **Estonia** active labour market policy measures will receive around 50 million EUR, in **Lithuania** - more than 200 million EUR and in **Latvia** – around 150 million EUR during the implementation of the OPs, which makes Latvia the leader among the Baltic States in terms of financial allocations per one person unemployed.

The CP impact on other OP objectives

Additionally, the OPs will have a number of other main impacts in the Employment sector/policy area in the Baltic States.

The **Estonian** OP will provide services for more than 54 000 persons with a designated partial working ability with more than 40 percent of the total financial allocations of the sector/policy area devoted to this purpose. Those assessed as having a partial working ability will be supported by active labour market policy measures, rehabilitation and social services, etc. Despite the fact that the target values for the result indicators have yet to be established, given the large number of persons envisaged for support, CP investments are expected to make a significant difference to the professional lives of those assessed as having a partial ability to work.

In Estonia, the OP will also support the use of region-specific resources and know-how through the establishment and further development of regional competence centres in regions beyond the urban areas of Tartu and Tallinn. ITI principles will be applied in relation to project implementation. The economic development of these regions will also be encouraged by the preparation of industrial areas (brownfield sites) for new enterprises, developing incubation opportunities, etc. All of these actions will directly

[122] For the year 2011

strengthen economic growth in the targeted regions. The GDP measure that is applied to monitor the progress of these interventions is however affected by so many factors that the OP investments are expected to make only a low level contribution to this result indicator.

A similar type of investment is foreseen in the **Lithuanian** OP which will support opportunities for employers in terms of job creation or self-employment. Integrated projects, as indicated in Article 7 of the ERDF Regulation, will be implemented in five major cities. More particularly, employers will be supported by the diversification of economic activities in the targeted territories and through financial instruments for start-ups. The possibility of achieving these targets however remains highly dependent on factors other than those associated with the OP interventions (e.g. private investments, other national policies, etc.); therefore the OP contribution here was assessed as low.

In Lithuania the OP will make a high level contribution to the attainment of the results in relation to the monitoring capabilities of labour market institutions through investments in the facilities of the Vilnius Territorial Labour Exchange. OP allocations in relation to the qualifications of the staff working with the unemployed and employers will also contribute to the overall quality of the services provided.

The **Latvian** OP supports labour safety. It will be targeted by providing consultative support to enterprises in hazardous industries, including an assessment of its compliance with labour protection requirements and the provision of a list of recommendations. Given the available information on the actions and their scope, the CP's expected contribution to the target value of the result indicator was assessed as high.

The indicators and actions provided in the Latvian OP indicate another important outcome in the sector/policy area - created system for anticipation and management of labour market restructuring.

3.8.3. Conclusions

Recent positive trends in the labour market resulted in a 76.5 percent employment rate in **Estonia**, 73.4 percent in **Lithuania** and 72.5 percent in **Latvia** in 2015, rates which represented an historic peak in employment terms The CP investments are expected to positively affect employment rates in all three **Baltic States**. Macroeconomic modelling suggests that during the OP implementation period the OP investments should increase employment rates on average by 1.3 percent in **Estonia**, 1.6 percent in **Lithuania** and 1.7 percent in **Latvia** annually. In 2020 the **Baltic States** are forecast to be close to their national employment targets in relation to EU 2020. Economic development fluctuations however put pressure on the attainment of these high targets in terms of the employment rate.

In 2015 the share of young people (15-24 years) neither in employment nor in education and training in the **Baltic States** was around 10 percent and was lower than the EU-28 average. The issue is nevertheless emphasised in the national strategies of the Baltic States. Macroeconomic modelling indicates that in 2014-2023 due to the CP investments the share of young people neither in employment nor in education and training would, on average, be lower by 1.3 percent in **Estonia**, 1.4 percent in **Lithuania** and 0.4 percent in **Latvia** annually. As in the case of overall employment rates, further progress will be highly relevant to the level of economic growth.

The positive impact of the CP suggests that the situation of another target group – the elderly unemployed – is expected to improve. These expectations are also supported by the fact that the **Baltic States** envisaged investments (mainly in the form of active labour market policy measures) particularly for this group.

The CSRs for **Lithuania** and **Latvia** paid attention to active labour market policy measures (activation measures). The financing of these measures and implementation of the CSR recommendations will be both supported and critically dependent on the CP financial resources that make up around 400 million EUR in the three **Baltic States** combined. The largest financial allocation in terms of per one unemployed are foreseen in **Latvia**, though **Lithuania** and **Estonia** have also planned sizeable allocations.

The CP in the Baltic States will also have impacts other than those described above. In the **Estonian** labour market significant improvements determined by the large financial allocation and huge target group involved (54 000 persons) are expected for persons with a designated partial working ability. The Estonian OP will

also support economic growth in the regions beyond the urban areas of Tartu and Tallinn. The level of contribution here was assessed as low, since the attainment of the targets is more dependent on private initiative and other factors outside the OP.

The **Lithuanian** OP will also support economic growth and job creation in targeted territories of five major cities. As in the similar case for Estonia, the OP contribution to attaining the targeted results is limited to 'low extent' due to the significant role played by external factors.

The **Latvian** OP will contribute to the labour safety of enterprises in hazardous industries. The scope and nature of intervention allows expecting a high level of contribution from the OP.

3.9. Social inclusion sector/policy area

3.9.1. EU and national policy objectives and CP interventions

The key objective of the Europe 2020 strategy in the Social inclusion sector/policy area is to lift at least 20 million people out of the risk of poverty and social exclusion. In order to achieve this target various policy objectives are laid down in EU level strategic documents[123]. The two main objectives these policies seek to address are the better inclusion of vulnerable groups into society and the active promotion of employment for people furthest from the labour market, with a particular focus on youth. Specific target groups covered by those policies include people at risk of social exclusion, families with children, young people, the elderly, migrants, ethnic minorities, disabled persons, persons suffering from addictions and others.

National targets set by the Baltic States in the context of the Europe 2020 framework equates to 49 500 less people at risk of poverty and exclusion in **Estonia**, 121 000 less people in **Latvia** and 170 000 less people in **Lithuania**.

The objectives to increase social inclusion and support the integration of socially disadvantaged persons into the labour market are set in the national strategic documents[124] of all three **Baltic States**. Among other measures, all three Baltic States aim to foster deinstitutionalisation processes particularly as they concern the care of children and adults with disabilities as well providing support for caretakers in order to improve their employability. Moreover, this objective requires incremental improvement of the delivery of quality welfare services increasing the importance of community-based services. **Latvia** and **Lithuania** put additional emphasis on the provision of support for families and children[125], while **Latvia** and **Estonia** specifically aim to address discrimination and gender inequality[126]. **Estonia** is also concerned with integration and equal participation in the society of people with different linguistic and cultural backgrounds[127].

The CSR 2016 for each of the Baltic State also emphasise some aspects of social inclusion. **Estonia** is expected to ensure the provision and accessibility of high quality public services, especially social services, at the local level, *inter alia* by adopting and implementing the proposed local government reform as well as to adopt and implement measures to narrow the gender pay gap. **Lithuania** and **Latvia** are both expected to reduce the tax burden on low-income earners by shifting the tax burden to other sources less detrimental to growth. **Latvia** is additionally encouraged to improve the adequacy of social assistance benefits and step up measures supporting recipients in finding and retaining work, including through increased coverage of activation measures. **Lithuania** is also expected to improve the coverage and adequacy of unemployment benefits and social assistance.

[123] e.g. The European Platform against Poverty and Social Exclusion
[124] e.g. Welfare development plan 2016-2023 (Estonia), National Progress Programme 2014-2020 (Lithuania), National Reform Programme for the Implementation of the "Europe 2020" Strategy (Latvia)
[125] e.g. Lithuanian National Progress Programme for 2014-2020, Action plan for social inclusion 2014-2020, Latvian National Social Report 2015
[126] These objectives can be found in Estonian Welfare development plan 2016-2023, Latvian National Social Report 2015, National Reform Programme for the Implementation of the "Europe 2020" Strategy
[127] This objective can be found in Estonian strategy „Integrating Estonia 2020"

Table 23. Specific objectives of Social inclusion sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Social services for socially disadvantaged groups	Welfare services which are more integrated and of higher quality support the community living for people with special psychiatric needs and people with disabilities have better opportunities to cope in their home environment	Increase the share of community-based social services through transition from institutional to community-based services	To increase the efficiency of the re-socialization system
	Improved competitiveness for participation in Estonian society, incl. labour market, lifelong learning and civil society, among people who have received adaptation and integration services	Improve access to and quality of community-based services, develop services for families	To increase the efficiency of social services, and the professional skills of employees and inter-institutional cooperation for work with persons in risk situation
	Increased labour market participation of custodians who have received childcare services and support services for children with disabilities		To increase the availability of social services at home equivalent to the high-quality services of institutional care and availability of services close to family environment for children and people with disabilities
	Increased labour market participation or improved coping of people with special needs, care burden or coping difficulties who have received welfare services		Developing the infrastructure of services for family like care of children and persons with disability for independent life and integration into the community
	Residents of larger urban areas are provided with nursery school and childcare options near home		
Integration into the labour market	Inclusion and improvement of the employability of young people, incl. those at risk of exclusion	Enhance integration of persons most distant from the labour market into the labour market	To facilitate inclusion of disadvantaged unemployed people in the labour market
		Increase participation by older working-age persons in the labour market and volunteering	To facilitate integration of people at risk of discrimination into society and labour market
		Improve local employability and enhance social integration of communities, by making use of relationship among local communities, businesses and local governments	To increase the integration of former prisoners into society and labour market
Social housing		Facilitate access to social housing for the most disadvantaged social groups	
Revival of underused/disadvantaged areas	Major underused districts in larger urban areas of Ida-Viru County have been revived	Reduce disparities in the quality of life caused by geographical conditions and demographic processes	
Social responsibility		Promote the emergence of initiatives enhancing social entrepreneurship and social responsibility	

Source: OPs information and aggregation by project team, 2016

The CP in all three **Baltic States** aims to improve the labour market participation of disadvantaged and unemployed people. The two main directions this takes can be identified: first – the labour market participation of vulnerable groups, and second - support for people with care burdens enabling them to rejoin the labour market.

The main target groups of the first direction however differ among the Baltic States. In **Estonia** the main concern is the employability of young people, while in **Lithuania** and **Latvia** the emphasis is on socially disadvantaged persons and older working-age persons. **Latvia** also aims to increase the labour market participation rates of former prisoners.

The second direction aims to improve the provision of social services in order to provide people with special needs with adequate social assistance, thus increasing opportunities for family members with care burden to actively take part in the labour market. All three **Baltic States** are mainly concerned with two target groups – children in care and disabled people – and their custodians. The OPs of all three Baltic States aim to increase the availability and quality of community-based social services and social services at home in order to foster the transition from institutional care to family-like care for children and independent living for persons with disability. Additionally, the **Estonian** OP places more emphasis on the availability of childcare services in selected larger urban areas in order to increase custodians' participation in the labour market.

Additionally, the **Lithuanian** OP aims to promote initiatives enhancing social entrepreneurship and social responsibility by supporting social businesses and the employees of social enterprises as well as training persons aiming to work in those enterprises or independently. Furthermore, the Lithuanian OP is concerned with increasing access to social housing and reducing the waiting list of persons (families) wanting to rent social housing as well as promoting local employability and the social integration of communities.

The Estonian and Lithuanian OPs also include actions targeted at deprived communities. The **Estonian** OP aims to revive the underused districts in Ida-Viru County through implementation of integrated urban development strategies. The **Lithuanian** OP provides support for the physical regeneration of selected towns across the entire country, thus aiming at a reduction in disparities relating to the quality of life caused by prevailing geographical conditions.

It is however also important to note that CP investments and activities carried out under the Social inclusion sector/policy area are closely interrelated with the investments and activities carried out under the Health sector/policy area. Therefore, the development of the Social inclusion sector/policy area will also be significantly affected by investments targeted at the Health sector/policy area. For example, activities under the Health sector/policy area aiming to promote healthy lifestyles or reduce alcohol consumption will also significantly increase the abilities and likelihood of people at risk of poverty or social exclusion to be reintegrated into society and/or to rejoin the labour market.

Financial allocations

The CP financial contribution (EU share) during the programming period 2014-2020 to the sector/policy area is around 238 million EUR in **Estonia**, more than 256 million EUR in **Lithuania** and nearly 188 million EUR in **Latvia**. Although the EU funding in all three **Baltic States** accounts for only around 1 percent of total national public investments in this area, the CP is the main source of financing for new developments in the sector/policy area. This comparatively low share of EU funding in is best explained by the high volumes of national budgetary allocations to ongoing expenditure on the social inclusion system such as pension funds, social assistance programmes etc. However, the EU funding per capita in the Baltic States differs. In **Estonia** it is twice as high as that in **Lithuania** and **Latvia**.

Table 24. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Social inclusion sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	238.1	18 735,2	181	14 266	1.3%
Lithuania	256.1	33 619,5	88	11 509	0.8%
Latvia	187.6	19 973,3	94	10 057	0.9%

Source: Project team calculations based on sources indicated in methodology section, 2016

The distribution of financial allocations to the attainment of various objectives within the sector/policy area differs among the Baltic States. While in **Estonia** the largest share of investments is dedicated to support for the transition from institutional care to independent living for people with special psychiatric needs (35.4%), in **Lithuania** the vast majority of investment is attributed to the increase in access to social housing (19.5%). Under the **Latvian** OP, the highest share of financial allocations is attributed to the inclusion of disadvantaged unemployed people in the labour market (40.4%) and support for children in care as well as for disabled persons to transition from institutional to family-like care and independent living.

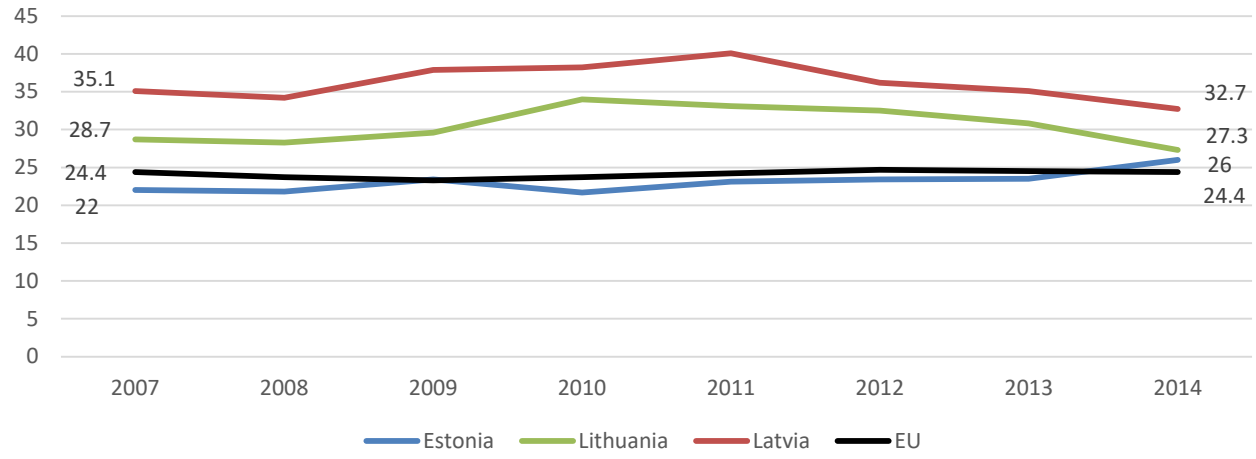
3.9.2. Main trends and expected impacts of the CP

The main trends and expected impacts of the CP in the Social inclusion sector/policy area can best be reflected by the indicator capturing **the share of people at risk of poverty or social exclusion**. All of the objectives set in Europe 2020 framework and national strategic documents as well as all of the investments planned under the OPs of the **Baltic States** ultimately aim to reduce the share of persons at risk of poverty or social exclusion by various means.

Other indicators selected for the analysis include **the level of unemployment of persons less than 25 years old** and **employment of persons 55-64 years old** as the objective to increase the employment level of the people disadvantaged in the labour market is one of the key objectives in this area. The expected impact of the CP investments as regards the attainment of the objectives related to the transition from institutional to community and family-based care, provision of nursery school and childcare options near home, promotion of social entrepreneurship as well as local employability and access to social housing were also assessed.

The share of people at risk of poverty and social exclusion in **Lithuania** and **Latvia** during the time period of 2007-2014 was significantly higher than the EU average, while **Estonia** saw a risk of poverty or social exclusion rate rather similar to the EU average during the period in question. **Lithuania** and **Latvia** in particular witnessed an increase in the share of persons at risk of poverty or social exclusion during the economic crisis. After the economic and financial crisis the general tendency in **Lithuania** and **Latvia** was for a reduction in those at risk of exclusion. Meanwhile in **Estonia** the value of the indicator has increased. During the 2007-2014, the decrease in the share of people at risk of poverty or social exclusion was highest in **Latvia** and was equal to 2.4 percentage points, in **Lithuania** the indicator has decreased by 1.4 percentage points, while in **Estonia** the value of the indicator has increased by 4 percentage points. During the same time period the EU average has remained quite stable.

Figure 30. Share of people at risk of poverty or social exclusion in Baltic States and EU[128]



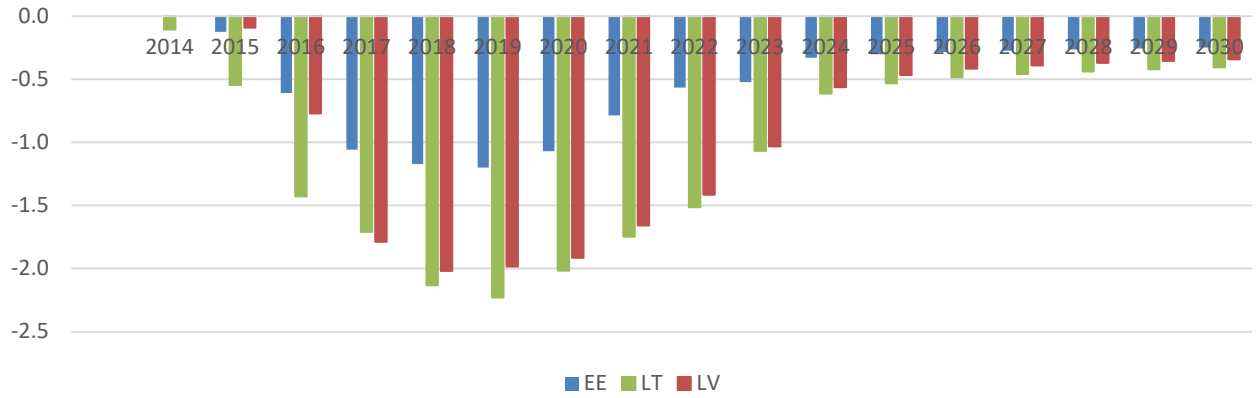
Source: Eurostat, 2016

It is estimated that the share of people at risk of poverty or social exclusion in 2023 should equate to around 24 percent in **Estonia**, 23.4 percent in **Lithuania** and 29 percent in **Latvia**. These estimations suggest that **Lithuania** and **Latvia** will likely attain their Europe 2020 national targets. In 2008 the share of those people at risk of poverty or social exclusion stood, in **Estonia**, at its lowest recorded level thus creating a challenge to further reduce the value of indicator and attain the national target.

The macroeconomic modelling shows (Figure 31) that there are likely to be significant improvements in the share of people at risk of poverty or social exclusion over the implementation and post-implementation phases due to the impact of CP investments. Simulation results show that the highest CP impact on the share of people at risk of poverty or social exclusion in the **Baltic States** is expected to be attained in 2018-2019. During the implementation period, CP investments will on average reduce the share by 0.7 percent in **Estonia**, 1.4 percent in **Lithuania** and 1.3 percent in **Latvia**. The impacts after the OPs' completion in 2023 up to 2030 average out to a lower annual extent, i.e. to 0.3 percent in **Estonia**, 0.5 percent in **Lithuania** and 0.4 percent in **Latvia**. As the macroeconomic modelling exercise takes into account the impact of all CP investments not only those related to the Social inclusion sector alone and also affect some of the factors external to the sector/policy area this boosts the effect of the CP investments targeted specifically at the Social inclusion sector/policy area.

[128] The share of people at risk of poverty or social exclusion means that these people were at least in one of the following conditions: at risk-of-poverty after social transfers (income poverty), severely materially deprived or living in households with very low work intensity. The at-risk-of-poverty after social transfers refers to the share of people with an equalized disposable income (after social transfer) below the at-risk-of poverty threshold, which is set at 60 percent of the national median equalized disposable income after social transfers. Material deprivation refers to a state of economic strain and durables, defined as the enforced inability (rather than the choice not to do so) to pay unexpected expenses, afford a one-week annual holiday away from home, a meal involving meat, chicken or fish every second day, the adequate heating of a dwelling, durable goods like a washing machine, color television, telephone or car, being confronted with payment arrears (mortgage or rent, utility bills, hire purchase instalments or other loan payments). The work intensity of a household is the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period. Very low work intensity is defined as work intensity ratio below 0.2.

Figure 31. CP impact on share of people at risk of poverty or social exclusion, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The share of people at risk of poverty or social exclusion is a highly complex indicator and is affected by numerous external factors. Such factors include, but are not limited to, economic upturns or downturns, employment and unemployment levels, ageing of the population, emigration rates, and the quality of healthcare among others. During the periods of economic upturn and/or increasing employment levels the share of people at risk of poverty or social exclusion usually shrinks as more people are able to find a job and wage levels are rising. An economic downturn and/or decreasing levels of employment have the opposite effect on the context indicator. Demographic factors such as population ageing and rising emigration rates have a negative impact on the share of those persons at risk of poverty or social exclusion as the number of people dependent on social assistance rather than their own labour ability, or support from family members, increases while the size of the labour force decreases. On the other hand, emigration can also have a positive effect on the development of the context indicator if the emigrants support family members remaining in their home country or if migration helps to solve the unemployment problem of the migrants themselves. The quality of health care is also strongly related to the share of people at risk of poverty or social exclusion. High quality healthcare helps to promote an increase in healthy life years thus enabling more persons to participate in the labour market and support themselves for longer.

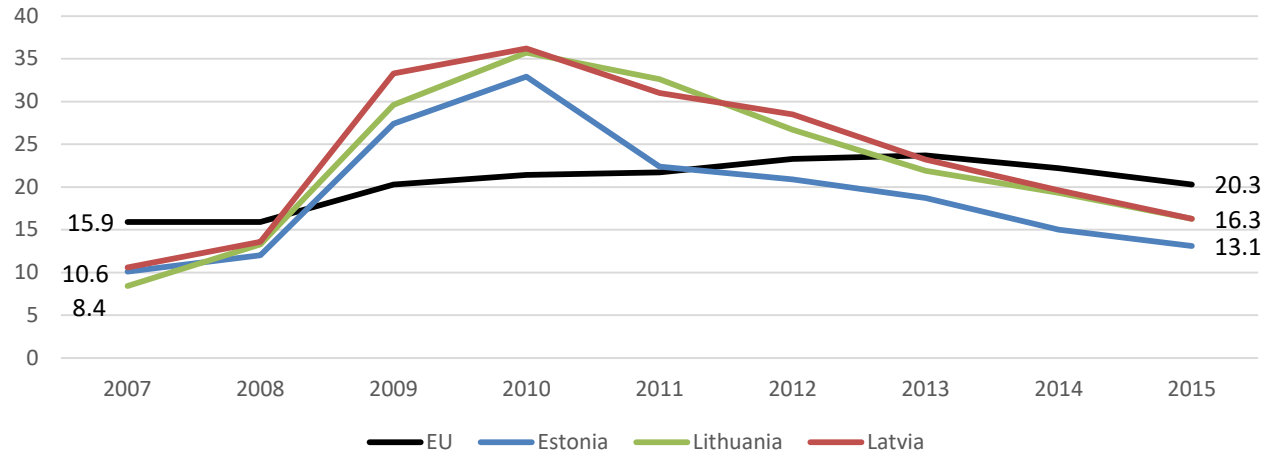
The impact of the CP on the decreasing number of people at risk of poverty and social exclusion in the **Baltic States** is largely based on expected improvements in the provision of social services, enabling socially disadvantaged groups to cope independently and to increase the labour market participation of people with special needs as well as their custodians. Moreover, in **Lithuania** and **Latvia** targeted support for disadvantaged groups (disabled people, former prisoners and older people) in order to gain some qualifications and skills for the labour market is planned. The **Lithuanian** OP also includes measures aiming to increase the availability of social housing for the most socially disadvantaged persons.

All these measures are being planned to increase the employability of those people viewed as being most distant from the labour market, thus decreasing their dependence on social transfers.

However, it should be noted, that the Europe 2020 headline target regarding people at risk of poverty and social exclusion is represented by nominal values rather than percentage of population. Thus, the estimated shrinkage of the population in Lithuania and Latvia also supports progress towards the headline indicator.

Another important goal of all three **Baltic States** in Social inclusion sector/policy area is the employability of disadvantaged unemployed people. As noted previously, all three Baltic States target slightly different groups of disadvantaged unemployed. The long-term comparable data for some of these groups is not available (i.e. disabled people, custodians, people with special needs, former prisoners). The trends for **unemployment of persons less than 25 years old** and **employment of persons 55-64 years old** can however be detected.

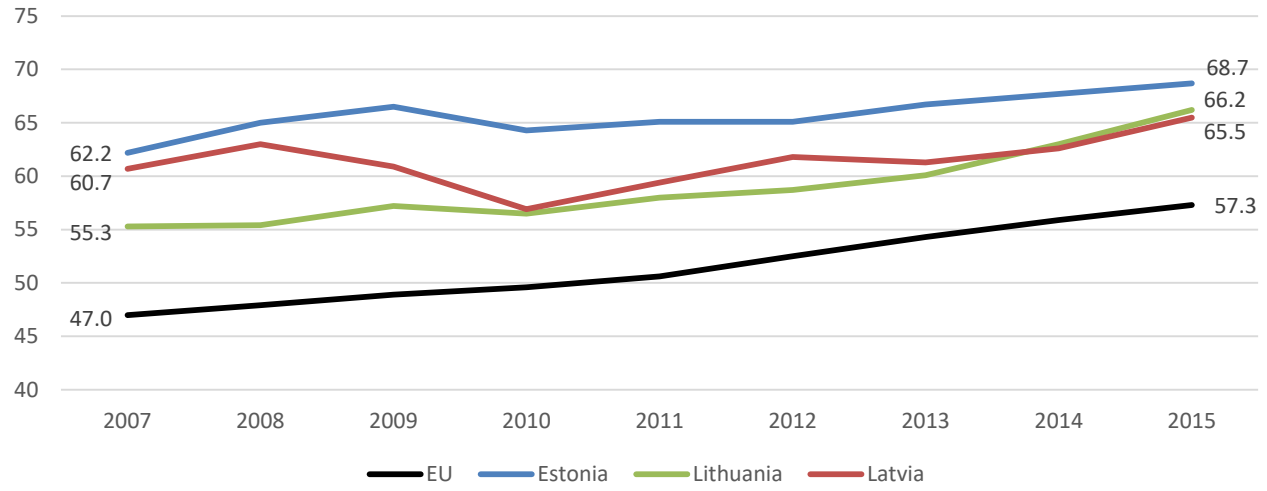
Figure 32. Unemployment of persons less than 25 years old



Source: Eurostat, 2016

Trends in youth unemployment differed in the Baltic States and the EU. In the **Baltic States**, youth unemployment increased between 2007 and 2010 but started decreasing again after 2010, while in the EU average youth unemployment steadily increased over the whole period 2007-2014 and only began to decrease slightly again in 2014-2015. At the end of the period analysed, the level of youth unemployment in all three Baltic States was significantly lower than the EU average.

Figure 33. Employment of persons 55–64 years old



Source: Eurostat, 2016

Employment levels of persons over 54 years of age developed more steadily and more uniformly in the **Baltic States** and the EU alike. During the period 2007-2015 the employment level of persons over 54 years grew in both the Baltic States and the EU.

Employment levels of those persons associated with specific target groups are affected not only by investments in the Social inclusion sector/policy area, but are also closely related to investments made in the Employment and SMEs sectors/policy areas and external factors such as economic upturns or downturns and the general employment situation among other things.

Macroeconomic modelling suggests that there are likely to be significant improvements in the general employment level over the implementation and post-implementation phases due to the impact of CP investments. During the implementation period, the CP annual impact averages out to 1.3 percent in **Estonia**, 1.6 in **Lithuania** and 1.7 in **Latvia**. The impacts after the OPs completion in 2023 up to 2030 average out to 0.23 percent in **Estonia**, 0.15 percent in **Lithuania** and 0.16 percent in **Latvia** annually. In line with the increase in the general level of the employment, the employment of target disadvantaged groups can also be expected to increase.

Besides aiming to reduce the share of people at risk of poverty or social exclusion and the levels of unemployment of people disadvantaged in the labour market all three **Baltic States** also aim to enhance social services. It is assessed that the CP investments will make a significant contribution towards attaining the group of objectives associated with enhancing social services. The intention to improve the quality and availability of social services comprises two main objectives, firstly, facilitate the independent living of people with special needs and, secondly, to better help custodians balance their work and care giving responsibilities, thus increasing their potential labour market participation. The CP investments in all three Baltic States are targeted particularly at the supply side improvement of community and family-based social services and at reducing the number of disabled persons and children in institutional care. Planned investments supplemented by the targeted policy of the national governments could have a high level impact on reducing the number of those in institutional care and increasing number of disabled people living independently. However, planned CP investments are expected to contribute only to a medium level in respect of the labour market participation of people with special needs and care burdens in all three Baltic States. The main target groups of OP investments are the elderly, disabled people and children receiving institutional care. Most of these people will not be able to participate in the labour market, because of their age status or reduced abilities. Thus, OP investments are mainly targeted to support independent living or living in family-like homes in the case of abandoned children. A higher level of impact in terms of labour market participation can be expected from measures supporting former prisoners.

Moreover, improvement in and the increased availability of social services is intended to reduce the care burden and affect the employability level of carers or custodians. The overall impact on their participation in the labour market is however assessed as being low to medium. In all three **Baltic States** interventions are expected to result in improved access to social services for disabled persons and the elderly among others, thus helping to balance caregivers' home and work responsibilities. In order to better promote the successful participation of caregivers in the labour market a number of other conditions need to be met, including qualifications, labour services and flexibility in respect of working hours.

The CP impact on other OP objectives

The indicators discussed in the previous section cover only part of the issues in the Social inclusion sector/policy area. The CP will contribute to other targets as well. The analysis of the expected contribution of the CP investments to the attainment of the target values of the result indicators has revealed that the CP's impact is expected to be at a medium to high level in all three **Baltic States**.

In **Estonia**, a high level impact is expected in terms of integration services on the adaptation of newly arrived immigrants and poorly integrated permanent residents. Participants in the adaptation and integration programme will be provided with language studies, essential knowledge about the state, society, culture, facilitating immigrants and other specific groups of permanent residents to better integrate into society and the labour market.

Estonian OP investments in childcare places are also expected to contribute to a medium level in respect of attaining the objective of increasing labour market participation. Accessibility to high-quality and affordable childcare services is one of the most important factors facilitating entry or return to the labour and to keeping a job. The intended investment will directly tackle the problems associated with insufficient supply in terms of childcare places, covering around 20 per cent of the existing shortage. Moreover, there are also plans to develop some flexible childcare services which are of crucial importance for those custodians working under

non-standard work schedules.

Another group of goals to be affected by the CP investments is the integration of persons currently deemed most distant from the labour market into the labour market. Planned measures here include supporting professional skills development, job searching, work place adjustment and other similar activities and these activities will focus directly on tackling unemployment among the disabled, older people, youth and other groups at risk of discrimination. The impact of the CP investments on the attainment of employment objectives in respect of the employment of disadvantaged people is expected to have a medium to high degree impact in **Lithuania** and **Latvia**. It is expected to engage a large number of participants in qualification-gaining activities as well as providing support for the creation and adaptation of new work places. However, attainment of the target values of the result indicators will also be significantly affected by factors not controlled by the CP investments, such as the prevailing economic situation, the general business environment and the tax burden for socially responsible businesses. Therefore, the extent to which CP investments are able to contribute to the attainment of the target values of result indicators is, in some cases, assessed as medium.

Estonian OP investments are expected to contribute to a medium level in respect of attaining the objective of youth integration in the labour market. Actions to be supported include, providing information about working life, the acquisition through non-formal learning of the social competences required for work, cooperation with employers and the creation of work clubs. However, it is intended to involve large number of participants in youth work services, therefore the intensity of support each participant will receive is expected to be moderate.

In order to improve local employability and enhance social integration the CLLD (community-led local development) approach will be adopted in **Lithuania**. It is expected that the active involvement of local actors in targeted activities will help to tackle employability and social integration problems at the community level. Thus the extent of the CP contribution here will be high.

The CP investments will also significantly affect attainment of the objective in terms of the promotion of initiatives enhancing social entrepreneurship and social responsibility in **Lithuania**. The extent of the contribution of CP investments varies from medium to high but the overall expected CP contribution will be higher than medium. The activities envisaged for support, such as the creation of social businesses, support for employees of social enterprises and support for training of a certain number of persons, are necessary conditions, in order to attain the target values of the result indicators. However, the attainment of the target values of the result indicators will be also significantly affected by factors not controlled by the CP investments. Therefore, the extent of the contribution of the CP investments to the attainment of the target values of result indicators is assessed as slightly higher than medium.

Even though the highest share of financial allocations is attributed to the attainment of the objective aiming to increase the availability of social housing for the most socially disadvantaged in **Lithuania**, the contribution of CP investments to attaining the target value of the result indicator is assessed as medium. The measures reflected by the output indicator directly linked with the relevant result indicator are expected to significantly affect attainment of the target value of the result indicator. The scope of these measures is not however wide enough to attain the selected objective using CP investments alone.

3.9.3. Conclusions

All three **Baltic States** aim to ensure quality social services for socially disadvantaged groups, thus increasing participation in the labour market and society. The main target groups for CP investments are disabled people, children in institutional care and other socially disadvantaged people such as former prisoners. **Estonia** additionally emphasises youth employability, while the **Lithuanian** OP invests in older working-age persons.

The OPs financial contribution (EU funding) to the sector/policy area is around 238 million EUR in **Estonia**, more than 256 million EUR in **Lithuania** and nearly 188 million EUR in **Latvia.** CP investments are the main

source of social reform implementation in all three **Baltic States**, while national budgets are mainly reserved for ongoing expenditure on the social inclusion system such as pension funds, social transfers and the maintenance of institutions. In all three Baltic States CP investment will help to facilitate transition from institutional care to community-based services as well as introducing more services supporting the employability of disadvantaged groups. Additionally, the **Estonian** OP supports adaptation and integration programmes for immigrants and poorly integrated permanent residents, while **Lithuania** aims to increase the supply of social housing.

The CP investments will sizeably affect the share of persons at risk of poverty or social exclusion, which was significantly higher in **Lithuania** and **Latvia** than the EU average and similar to the EU average in **Estonia** during the period 2007-2014. It is estimated that at the peak year of the manifestation of the impact of CP investments the share of persons at risk of poverty or social exclusion will be 1.2 percent lower in **Estonia**, 2.2 percent lower in **Lithuania**, and 2 percent lower in **Latvia** due to the effect of the CP investments. During the OP implementation period the average annual decrease in the share of persons at risk of poverty or social exclusion will be equal to around 0.7 percent in **Estonia**, 1.4 percent in **Lithuania** and 1.3 percent in **Latvia.**

Summing the expected CP impact with other trends it is estimated that in 2023 the share of persons at risk of poverty or social exclusion is forecast to be around 24 percent in **Estonia**, 23.4 percent in **Lithuania** and 29 percent in **Latvia**. The forecasts indicate that **Lithuania** and **Latvia** will likely reach their national targets. However further improvement and attainment of the national target in **Estonia** is likely to be challenging due to very low baseline level at 2008.

The reduction in the number of people at risk of poverty and social exclusion is also affected by the estimated shrinkage of the population, particularly in **Lithuania** and **Latvia.**

The employment levels of specific target groups most disadvantaged in the labour market is also expected to be affected by CP investments in line with the rise in the general level of employment in the **Baltic States** that is forecast to increase by around 1.3-1.7 percent during OPs implementation.

In terms of OP objectives and targeted results the CP investments are expected to positively affect social inclusion objectives in all three **Baltic States**. The highest contribution to the promotion of social inclusion will be generated by better quality social services for disadvantaged people and therefore increased community integration and independent living. The contribution level of CP investments aiming at labour market integration will be medium to high; however the long-term effect will depend on the sustainability of the created results.

The impact of CP investments on the attainment of the employment objectives set out in the OPs in respect of the employment of disadvantaged people is expected to be medium to high in all three **Baltic States**. In **Lithuania** and **Latvia** the employability of disabled people and people at risk is expected to be affected to a medium to high degree, taking into account the fact that the attainment of the target values of the result indicators will be also be significantly affected by factors not controlled by the CP investments. **Estonian** OP investments are expected to contribute to a medium level in respect of attaining the objective of youth integration in the labour market.

3.10. Health sector/policy area

3.10.1. EU and national policy objectives and CP interventions

The two main policy objectives that EU level strategic documents[129] promote are a reduction in the mortality rate, related in particular to alcohol, drugs and tobacco as well as to communicable and non-communicable diseases and increasing the average healthy lifespan. These objectives should be attained through improvement of access to effective, quality and affordable healthcare, especially for vulnerable groups, the promotion of healthy lifestyle, and of healthy and active ageing.

Policy objectives aimed at increasing life expectancy by improving health-related behaviour and healthcare infrastructure, ensuring healthy and safe development for children, facilitating healthy lifestyle and ensuring the sustainability of the healthcare system are set in strategic documents[130] of all three **Baltic States**.

The CSR 2016 for Lithuania and Latvia also emphasise some aspects of the Health sector/policy area. **Lithuania** is expected to improve the performance of the healthcare system by strengthening outpatient care, disease prevention and health promotion, while **Latvia** is encouraged to take action to improve the accessibility, cost-effectiveness and quality of the healthcare system as well as linking hospital financing to performance mechanisms. Even though no country-specific recommendation related to Health sector/policy area issues was formulated for **Estonia** in 2016, the Country Report Estonia 2016 reveals that Estonia has a significant problem with healthcare accessibility and that life expectancy and healthy life expectancy along with cardiovascular disease and cancer mortality are causes for concern.

The CP investments target analogous objectives in the Health sector/policy area. The main objectives of the OPs of all three Baltic States are grouped according to their thematic similarity (Table 25).

Table 25. Specific objectives of Health sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Regionally available, high-quality healthcare services	Regionally accessible, high-quality and sustainable healthcare services	Improve health-care quality and accessibility for target groups and reduce health inequalities	To support the development and implementation of prior (cardiovascular, oncology, perinatal and neonatal period care and mental health care) health network development guidelines and quality assurance system, especially for improvement of health of people at risk of social exclusion and poverty
			To improve accessibility to health care and health care support persons who provide services in priority health sectors, to inhabitants outside Riga
			Improving access to quality health care, especially to population subject to the social and territorial exclusion and poverty risk, developing the health care infrastructure
			To improve accessibility to qualified health care and health care support personnel
Healthy lifestyle	Reduced alcohol consumption by people who have received services	Reduce health inequalities by improving health-care quality and accessibility for target population groups and promoting healthy ageing	To improve accessibility to health promotion and disease prevention services, especially to persons who are subject to the poverty and social exclusion risk

Source: OPs information and aggregation by project team, 2016

[129] e.g. the European Platform against Poverty and Social Exclusion, the EU Strategy for the Baltic Sea Region,
[130] e.g. National Health Plan 2009-2020 (Estonia), Health Programme 2014-2025 (Lithuania), Public Health Guidelines 2014-2020 (Latvia)

All three **Baltic States** OPs aim to improve the quality of and access to health care, especially for target groups (people living in regions with the largest disparities in terms of health status and access to health care as well as people at risk of social exclusion and poverty).

In terms of health care, the **Estonian** OP intends to improve general healthcare services without focusing on any particular healthcare areas, the **Lithuanian** OP focuses mainly on strengthening the prevention and management of risk factors relating to the main non-communicable diseases (malignant neoplasms, circulatory system and cerebrovascular diseases) and external causes of death. The **Latvian** OP aims to improve health care services in the cardiovascular, oncology, perinatal and neonatal period areas and in mental health. Additionally, the **Lithuanian** OP includes children's health and tuberculosis prevention measures.

All three **Baltic States** emphasise the need for improved health care services in remote areas beyond the major cities. These regions often face rapid population decline, thus it is very challenging to maintain the quality of health care institutions in terms of infrastructure, equipment, and qualified personnel.

In order to attain the objectives in terms of healthy lifestyle all three **Baltic States** will target investments on the implementation of preventative programmes, awareness-raising, education and training activities for health promotion. The **Estonian** OP focuses exceptionally on reducing alcohol consumption while the **Lithuanian** and **Latvian** OPs aim at general healthy lifestyle education including alcohol and drug consumption programmes among others issues.

It is however also important to note that CP investments and activities carried out under the Health sector/policy area are closely interrelated with the investments and activities carried out under the Social inclusion sector/policy area. Therefore, the development of the Health sector/policy area will also be significantly affected by investments targeted at the Social inclusion sector/policy area.

Financial allocations

Financial allocations to the Health sector/policy area are among the smallest in comparison to the other sectors/policy areas contained in the OPs. Combined funding for all three **Baltic States** makes it 9th out of the12 sectors/policy areas addressed in terms of funding.

In terms of EU funding *per capita* financial contributions are almost equal in **Estonia** and **Latvia**, while funding in **Lithuania** is around 30 percent lower, which suggests that this area is afforded a relatively lower priority in terms of CP funds in the Lithuanian health sector/policy area.

The share of CP funding in comparison to that of national investments in the sector/policy area is not high. In **Estonia** CP funding amounts to 1.8 percent, in **Lithuania** to 1.3 percent and in **Latvia** to 3.1 percent. This comparatively low share of EU funding in comparison to overall funding is best explained by the high volumes of national budgetary allocations to ongoing expenditure on the public healthcare system.

Table 26. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Health sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	150	8490	114	6465	1,8%
Lithuania	209.5	16346.9	72	5596	1.3 %
Latvia	230.9	7492.6	116	3773	3.1 %

Source: Project team calculations based on sources indicated in methodology section, 2016

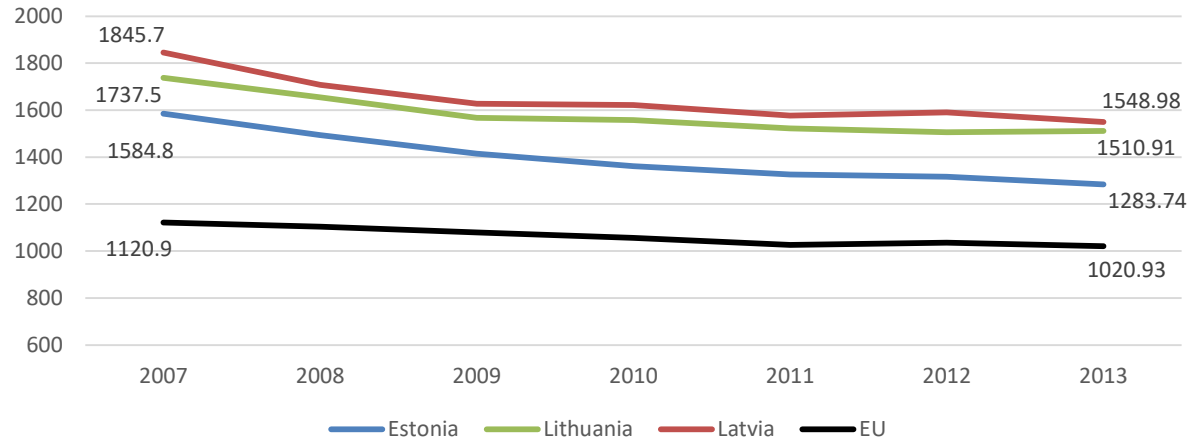
The distribution of financial allocations to the attainment of various objectives within the sector/policy area does not differ significantly among the **Baltic States**. The highest share of financial allocations in all three Baltic States is attributed to the improvement of the infrastructure of health care institutions with the aim of increasing the population covered by health care services. A significantly smaller share of investments will be dedicated to those activities targeted at specific groups such as the implementation of preventive programmes, awareness-raising, education and training activities for health promotion.

3.10.2. Main trends and expected impacts of the CP

All of the objectives in the national and EU level documents, as well as the OP interventions can be said to promote two main goals – reducing the mortality rate and increasing the healthy lifespan. Therefore, **the standardised death rate (all causes of death) per 100 000 persons** and **the healthy life years (absolute value at birth) of females and males** were selected as the main context indicators for the sector/policy area.

The **standardised death rate per 100 000 persons** was higher in all three **Baltic States** than the EU average during the period 2007-2013 (Figure 34). Among the Baltic States, the rate was lowest in **Estonia** and highest in **Latvia** during the period 2007-2013. The standardised mortality rate decrease in the Baltic States was higher than that in the EU as whole. The greatest progress was attained in **Estonia** and amounted to a 19 percent lower mortality rate. In **Lithuania** and **Latvia**, the mortality rate has decreased by 13 and 16 percent respectively surpassing average EU progress amounting to a 9 percent lower mortality rate. Therefore, as the decrease in the average EU mortality rate is significantly lower than in the **Baltic States** it can be expected that if the pace of mortality rate decrease remains similar during the 2014-2020, at the end of that period the mortality rate per 100 000 persons in the Baltic States will be equal or almost equal to the EU average, particularly, bearing in mind that in Lithuania and Latvia some investments are planned within particular health care sectors in order to tackle chronic diseases causing high rates of premature mortality.

Figure 34. Standardised death rate (all causes of death) per 100 000 persons in Baltic States and EU



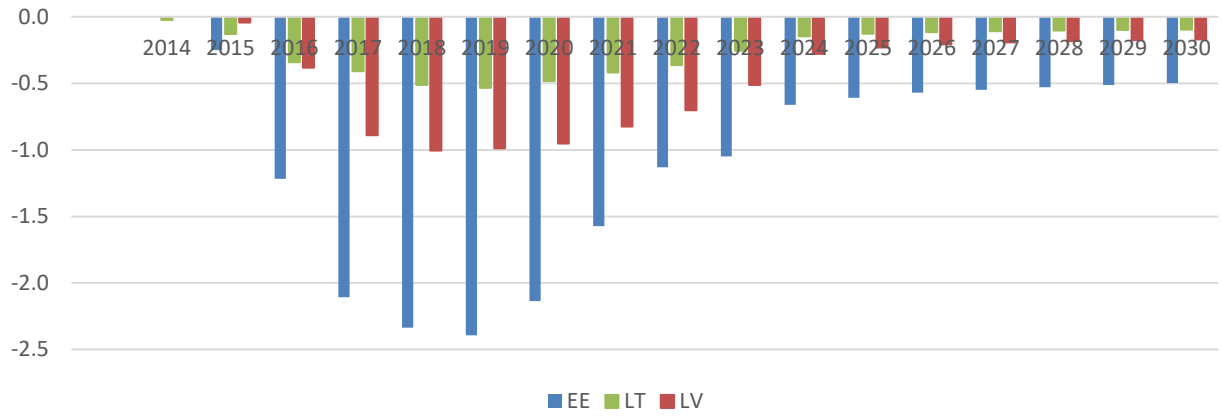
Source: Eurostat, 2016

Summing the expected CP impact with other trends, using satellite equations of the macroeconomic modelling, it is estimated that the standardised death rate (all causes of death) per 100 000 inhabitants in 2023 should be around 1089 in **Estonia**, 1456 in **Lithuania** and 1460 in **Latvia**.

The macroeconomic modelling shows (Figure 35) that there are likely to be improvements in the abovementioned context indicator due to the impact of CP investments. The impacts after the OPs

completion in 2023 up to 2030 average out to 0.6 percent in **Estonia**, 0.1 percent in **Lithuania** and 0.2 percent in **Latvia** annually.

Figure 35. CP impact on standardised death rate (all causes of death) per 100 000 persons, percent



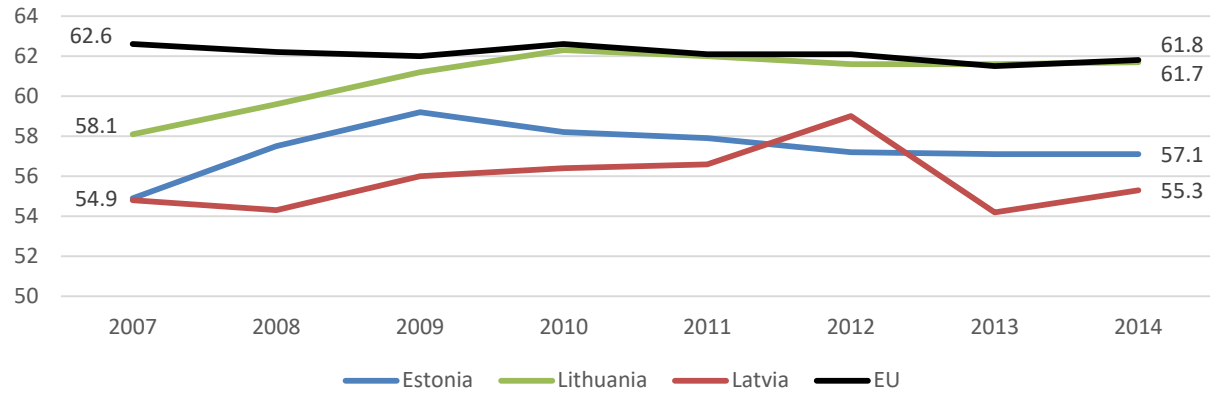
Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

One of the most important external factors in relation to the OPs is population ageing. In ageing populations the mortality rate is not only expected to be higher for obvious reasons but the demand for health care is higher thus constraining other age groups' accessibility to health care. The mortality rate is also closely related to the share of people at risk of poverty and social exclusion. Such people tend to lead unhealthier lifestyles and experience more difficulties related to health care availability which in turn adds to the increase in mortality rates. The high rate of premature mortality in all three **Baltic States** is also due to external causes of death such as traffic accidents, intentional self-harm and assault. As such, additional measures other than health care related measures should also be employed.

Another objective relevant for the Health sector/policy area is to increase the healthy life years. As the female and male average healthy life years differ quite significantly, the impact of CP investments on indicators measuring **healthy life years (in absolute value at birth) of females and males** was analysed separately.

At the beginning of the period analysed in 2007 there was a significant difference between expected healthy life years of females in the **Baltic States** and EU (Figure 36). However, in 2010 **Lithuania** managed to reach the EU average of female healthy life years and did not deviate from it significantly. The development tendencies of this indicator in both **Estonia** and **Latvia** were however rather different and fluctuating. Despite different trends, the absolute value of the indicator increased in all three **Baltic States**. The highest increase was in **Lithuania** where the healthy female life increased by 3.6 years during the period 2007-2014. A significant increase by 2.2 years in expected healthy female life years can also be seen in **Estonia**. A significantly smaller increase in expected healthy female life years was however found in **Latvia** and amounted to only 0.5 years.

Figure 36. Healthy life years (absolute value at birth) of females in Baltic States and EU

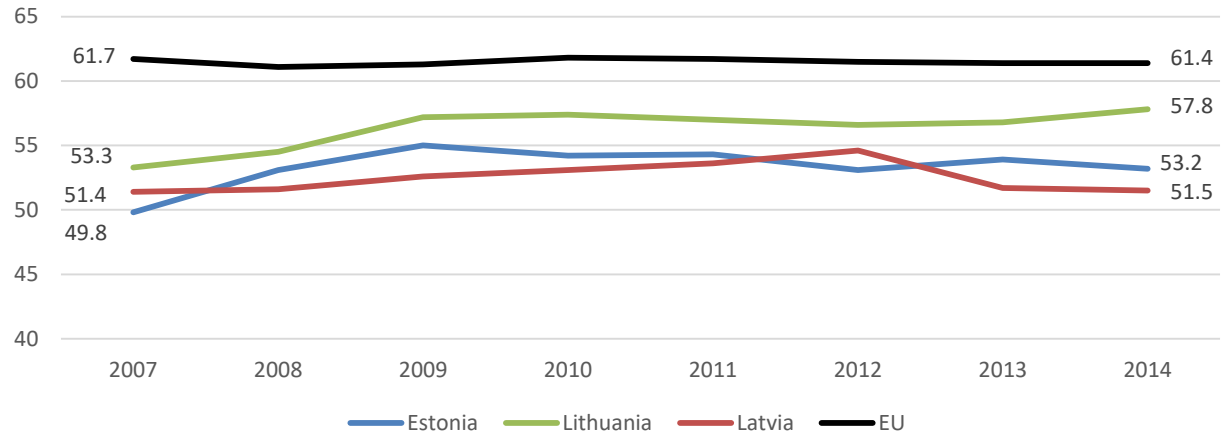


Source: Eurostat, 2016

The development of the indicator measuring the healthy life years of males was similar to that for females. At the beginning of the period 2007-2014 healthy life years' expectancy for males was significantly lower in all three **Baltic States** than the EU average (Figure 37). Despite different trends the absolute value of the indicator increased in all three Baltic States. The highest increase was in **Lithuania** amounting to 4.5 years over the period 2007-2014, however it was not enough to reach the EU average. A quite significant increase is also visible in **Estonia** at 3.4 years over the period analysed. The smallest increase in healthy life years of males was in **Latvia** amounting to only 0.1 years.

Fluctuations in the value of the indicator (both female and male) can be explained by its nature, since healthy life years are calculated using mortality data and information from surveys on self-perceived disability. The self-perception of disability is associated not only with objective measures of health but also with socioeconomic factors among others. Increased unemployment, lower incomes as well as general instability during the economic crisis may have an effect on people's perception of health, thus changing the value of the indicator measuring healthy life years.

Figure 37. Healthy life years (absolute value at birth) of males in Baltic States and EU

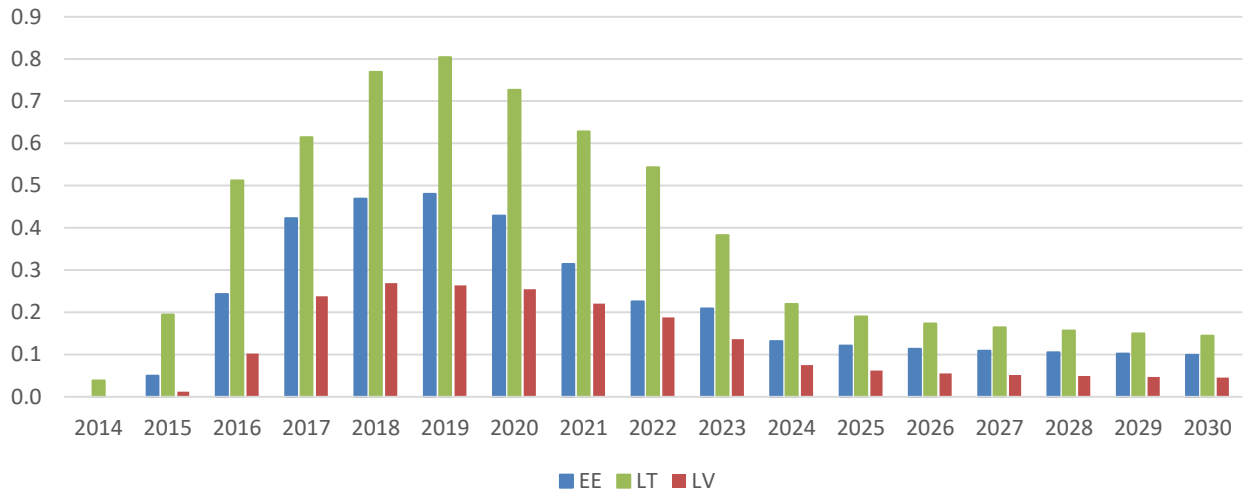


Source: Eurostat, 2016

The greatest positive changes are expected in terms of the increased healthy life years of females in **Lithuania** and of the healthy life years of males in **Estonia**. Estimations of the expected CP impact and other trends suggest that the healthy life years of females in 2023 should be equal to around 59 years in **Estonia**,

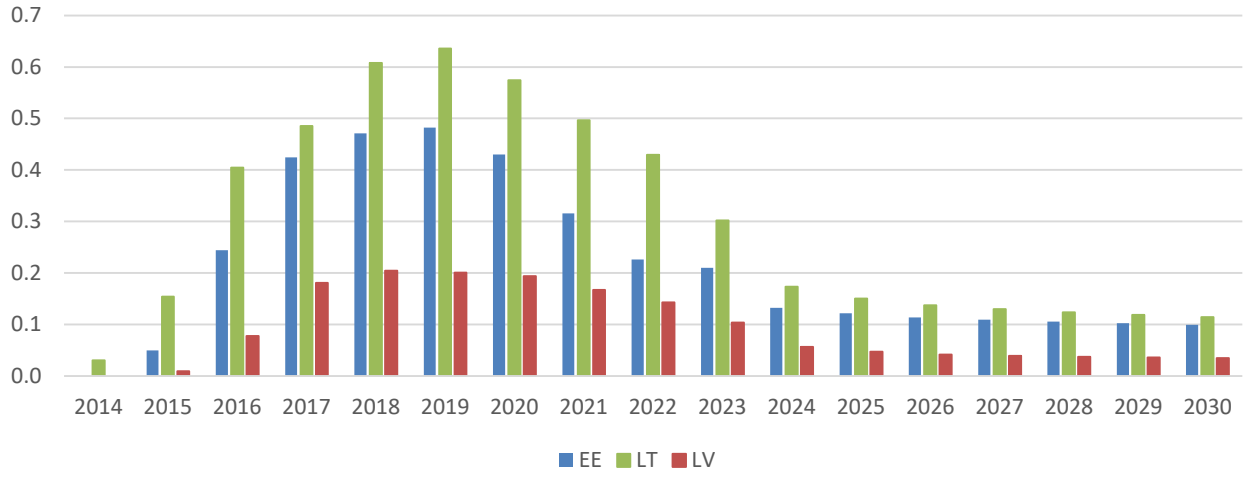
65 years in **Lithuania** and 55 years in **Latvia**. The estimated healthy life years of males in 2023 should be equal to around 56 years in **Estonia**, 59 years in **Lithuania** and 52 years in **Latvia**.

Figure 38. CP impact on healthy life years (absolute value at birth) of females, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Figure 39. CP impact on healthy life years (absolute value at birth) of males, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Because of the nature of the indicator it takes a period of time for the effects of the policy to actually occur. Despite the effects of the external factors there are likely to be moderate improvements in the healthy life years expectancy of females and males due to the impact of CP investments. In the period 2024-2030 due to the OP investments the expected healthy life years of females will, on average, be longer by around 0.11 percent in **Estonia**, 0.17 percent in **Lithuania** and 0.05 percent in **Latvia**. The impact on the healthy life years of males is expected to be slightly more modest and average out to 0.11 percent in **Estonia**, 0.14 percent in **Lithuania** and 0.04 percent in **Latvia**.

External factors, affecting the development of the indicator measuring healthy life years are similar to those affecting the standardised death rate. The effect of the share of people at risk of poverty or social exclusion, however, has a similar effect as that of the standardised mortality rate.

The CP impact on other OP objectives

The indicators discussed in the previous section cover only part of the issues in the Health sector/policy area. The CP will contribute to other targets as well. The analysis of the expected contribution of the CP investments to the attainment of the target values of the result indicators of the OPs has revealed that the CP impact is expected to be high in **Estonia** and **Latvia** and high to medium in **Lithuania**.

All three **Baltic States** aim to improve healthcare quality particularly focusing on remote areas while also promoting healthy lifestyles. A visible difference as regards the quality of healthcare in terms of regional availability can however be currently discerned. All three Baltic States are experiencing population decline which is manifested particularly in rural areas, thus local healthcare institutions face a problem to ensure the full time workload of doctors in all medical areas, to update medical equipment and to ensure sustainable healthcare. Each Baltic State however takes a slightly different approach to solving the issue of health inequalities.

Estonia intends to modernise treatment facilities in regional hospitals functioning as competence centres and to increase the ability of regional hospitals' to serve as competence centres for general and local hospitals. It is expected that the number of regional hospitals will acquire participation/decision making rights in general and local hospitals, thus providing first contact service providers with support in all medical specialties. This approach seems reasonable and has good potential to reduce healthcare personnel and services shortcomings in remote areas. However, the final number of general and local hospitals, in which a regional hospital/hospital/competence centre has acquired participation/decision rights, will be highly dependent on factors not affected by the CP investments, such as legal solutions and agreements between institutions, etc., thus the CP investments impact on it is assessed to be medium.

Lithuania has chosen to strengthen regional and local level healthcare institutions in selected regions with the largest disparities in terms of health status and healthcare availability. Moreover, CP investments are intended to address particular diseases, namely malignant neoplasms, circulatory system and cerebrovascular diseases as well as external causes of death. CP investments are expected to have a high level impact on reducing mortalities caused by one of aforementioned diseases in selected municipalities. This is an ambitious and challenging task though it is attainable when we take into account that some municipalities in the country display much lower levels of mortality from particular diseases and it is clear that to some extent this is influenced by the better availability of local healthcare services. On the other hand, improvements only in healthcare services may not be enough to reduce the number of deaths from external causes. The decline of the age-standardised (0-64 years) rate of mortality from external causes in the target territories is expected to be affected by CP investments only to a low extent. This is primarily related to an indicator's high dependence on other than pure healthcare factors, e.g. road security, crime prevention and psychosocial behaviour.

CP investments in **Latvia** aim at reducing relative differences in terms of outpatient visits in regional areas and cities. Measures here include the promotion of Riga-based healthcare professionals services in other regions of Latvia as well as the development and implementation of health network guidelines in order to improve the patient flow, define the appropriate size of healthcare organisation at different levels and increase the availability of quality healthcare services. However, although part of the intended funds will be dedicated exceptionally to remote territories (promoting healthcare professionals movement inside the country), most improvements will cover the entire country. Thus, the expected result in terms of the reduction of differences in health status will be affected by CP investments only to a medium extent.

The promotion of a healthy lifestyle is another approach taken by the **Baltic States** to increase healthy life years and life expectancy. **Lithuania** and **Latvia** intend to implement various awareness-raising programmes, training for target groups as well as introducing new prevention programmes at primary healthcare centres, while **Estonia** is clearly focused on the problem of alcohol abuse. Targeted investments in services of early detection, counselling and treatment are expected to contribute to a high level in respect

of attaining the objective of reducing alcohol abuse in **Estonia**. More dispersed investments in **Lithuania** and **Latvia** will make a slightly lower contribution towards attaining the goal of promoting healthy lifestyles.

3.10.3. Conclusions

All three **Baltic States** aim to improve the quality and availability of healthcare services focusing in particular on remote areas. To support the development of the sector/policy area the **Estonian** OP envisaged investing around 150 million EUR, **Lithuanian** – almost 210 million EUR and **Latvian** - more than 230 million EUR of EU funds. Although each Baltic State has chosen a slightly different approach to the issue, overall CP impact on healthcare systems, particularly in the regions outside the main cities, will be at a medium to high level. Additionally, the Baltic States promote healthy lifestyles and seek to ensure better preventative programmes in terms of vulnerable groups. Focused investment is expected to have a high impact on alcohol abuse and related harms reduction in **Estonia**. CP investments are expected to contribute to a higher than medium extent in respect of the promotion of healthy lifestyles in **Lithuania** and **Latvia**.

The standardised death rate in all three **Baltic States** is higher than the EU average. Thus, the Baltic States approach to tackling multiple problems in terms of premature deaths is reasonable. CP investments in healthcare quality and the promotion of healthy lifestyles will contribute not only to reducing inequalities in terms of health status inside the countries, but also to reducing the average death rate.

The value of the standardised death rate indicator is dependent on multiple factors and cannot change immediately, except in terms of changes in some particular causes of death, such as external causes. An increase in the general quality of life, including healthcare services, impacts lifespan gradually. In the period 2023-2030 the standardised death rate indicator is expected to be lower on average by 0.6 percent in **Estonia**, 0.1 percent in **Lithuania** and 0.2 percent in **Latvia** annually due to the CP investments.

Considering the expected CP impact and other trends it is estimated that in 2023 the mortality rate per 100 000 inhabitants will be around 1 089 in **Estonia**, 1 456 in **Lithuania** and 1 460 in **Latvia**, which remain higher than the EU average mortality rate of 1 021 in 2014. The relatively moderate CP impact on the mortality rate relates to an indicator's high dependence on factors other than those directly related to healthcare as well as to the general ageing of society.

CP investments are expected to positively affect the healthy lifespan of people in all three **Baltic States**. Due to the CP investments the healthy life years of females after the OPs completion in 2023 up to 2030 on average will be higher about 0.11 percent in **Estonia**, 0.17 percent in **Lithuania** and 0.05 percent in **Latvia** annually. The impact on healthy life years of males, in comparison with females, is expected to be the same in **Estonia** (0.11%) and slightly more modest in **Lithuania** (0.14%) and **Latvia** (0.04%)**.**

The difference between female and male estimated healthy life years is however forecast to remain sizeable. The estimated healthy life years of females in 2023 are expected to be the highest in **Lithuania** (65 years) and lower in **Estonia** (59 years) and **Latvia** (55 years). Taking into account the fact that the EU average for healthy life years of females did not fluctuate and remained almost unchanged in the period 2007-2014 at 61.8 years in 2014, a similar value for the indicator can be estimated for 2023. Thus, **Estonia** and **Latvia** will remain below the EU average, while **Lithuania** is expected to exceed the EU average. The estimated healthy life years of males in 2023 in all three **Baltic States** is forecast to remain significantly lower than the EU average of 61.4 years in 2014 (around 56 years in **Estonia**, 59 years in **Lithuania** and 52 years in **Latvia**.

3.11. Education, skills and lifelong learning sector/policy area

3.11.1. EU and national policy objectives and CP interventions

The main EU policy objectives in the Education, skills and lifelong learning sector/policy area aim to tackle the problem of early school leavers and to improve the quality and efficiency of education and training as well as to increase the share of persons who have completed tertiary education while also making lifelong learning a reality.

The two main targets in the sector/policy area selected under the Europe 2020 strategy are to reduce school drop-out rates below 10 percent and to ensure that at least 40 percent of 30-34-year-olds have completed tertiary education.

Similar policy objectives are set in the national strategic documents of all three **Baltic States**[131] All three also emphasise the importance of the competent and motivated teaching staff as well as school leadership, the inclusion of modern equipment as well as usage of ICT services at all levels of education and the need to ensure compliance between skills development and labour market needs. In the field of higher education the main aim is to raise quality and promote international competitiveness.

Furthermore, the CSR 2016 for **Lithuania** emphasises the need to strengthen investment in human capital and address skills shortages by improving the labour market relevance of education, raising the quality of teaching and pursuing more active labour market policies and adult learning. **Latvia** is expected to increase participation in vocational education and training and its labour market relevance in particular by improving the availability of apprenticeships and speeding up curricula reform.

The CP investments target analogous objectives in the Education, skills and lifelong learning sector/policy area. The main objectives of the OPs of all three **Baltic States** are grouped according to their thematic similarity (Table 27).

Table 27. Specific objectives of Education, skills and lifelong learning sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Improve early and general education	Improving the teaching competence of teaching staff, principals and youth workers in order to implement a teaching approach that supports the personal and social development and develops the learning skills, creativity and entrepreneurial ability of each learner at all levels and in all forms of education	Improve operational efficiency of general and non-formal education institutions (especially engaged in pre-school and pre-primary education programmes)	To improve study environment of general education institutions
	Modern and innovative study materials have been introduced	Improve students' training achievements by promoting operational changes at the education institutions	To develop competency-based general education curriculum
	A general education school network that takes into account demographic changes, is based on the principles of inclusive education and ensures equal access to high-quality education in all regions of Estonia		To increase support for general education institutions to develop students' individual competences
			To introduce education quality monitoring system
Improve vocational training		Improve access to quality vocational and adult training by investing into infrastructure	To increase number of fully modernised vocational education institutions

[131] E.g. Estonian Lifelong Learning Strategy 2020 (Estonia), National Education Strategy 2013-2022 (Lithuania), Education Development Guidelines 2014-2020 (Latvia)

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
			To increase number of qualified VET students through participation in work-based learning and practice in enterprise
			To ensure conformity of vocational education to European qualifications framework
			To ensure efficient management of VET institutions and improve professional competencies of the involved personnel
Improve higher education		Improve and consolidate the studies infrastructure for better quality of the studies	Increase number of modernized study programs of STEM, including medicine and creative industries
		Reinforce monitoring, external evaluation and efficient management of higher education with a view to constant quality improvement	To improve the learning environment of the first level professional higher education STEM, incl. medicine and creative industry, programs
			Reduce fragmentation of study programs and strengthen resource sharing
			To strengthen academic personnel of HEI in strategic specialisation areas
			To ensure better governance in HEI
			To provide support for implementation of requirements of EQAR agency
Strengthen the skills of researchers		Strengthen the skills and capacities of public sector researchers for engaging in high level R&D activities	
Improve career and educational guidance, consistency between studies and the needs of the labour market	Reducing school and education drop-out rates and supporting career choices through high-quality educational support services	Improve the quality and access to the studies with a view to ensuring better consistency between the studies and the needs of the labour market and the society	To improve access to career support for students in general and vocational education institutions
	Studies in vocational and higher education institutions are more in line with labour market needs and support entrepreneurial ability	Improve consistency of vocational and adult training with the labour market needs and make it more attractive	To increase not registered in SEA NEET youth's skills and promote their involvement into education, measures implemented by SEA within the framework of Youth Guarantee, and NGOs or youth centres
Improve lifelong learning	Increased share of adults with professional and occupational qualifications, improved key competences for lifelong learning, and improved employability	Provide opportunities and incentives for lifelong learning by ensuring efficient support for the enhancement of competence	To develop professional competence of employees
		Increase workforce competitiveness, ensuring opportunities to adapt to economic needs	

Source: OPs information and aggregation by project team, 2016

CP investments in all three **Baltic States** aim to improve educational attainment across the various levels of education. In the field of early and general education the Baltic States place the emphasis on teaching quality and educational achievements by investing in infrastructural development and learning environment.

Estonia additionally targets at reforming the school network in order to ensure equal access to high-quality education in all regions of the country. **Latvia** aims to develop competency-based general education curriculum and seeks to strengthen individual competences of pupils as well as to introduce the uniform quality monitoring system. **Lithuania** is additionally targeting pre-school and pre-primary education. Neither Estonia nor Latvia seems to be targeting pre-school and pre-primary education under the Education, skills and lifelong learning sector/policy area. It is however important to note that **Estonia** is planning to invest in pre-school and pre-primary education under the Social inclusion sector/policy area by targeting investments at providing the residents of larger urban areas with nursery school and childcare options near their homes.

Improvement of vocational training system is expected in **Lithuania** and **Latvia**. Both countries aim to improve study infrastructure. Latvia additionally invests in the development of apprenticeship system as well as in the improvement of the curriculum that will better meet requirements of the labour market.

Lithuania and **Latvia** also target the need for improvements in higher education. Both countries invest in upgrading the studies infrastructure of higher educational institutions (universities and colleges alike). It is also expected that they will strengthen the governance structures of higher education institutions while reinforcing the external evaluation of institutional performance generally and of the various study programmes in particular. Additionally, **Latvia** also aims to strengthen academic personnel by supporting doctoral students as well as foreign lecturers to work as academic staff in Latvian higher education institutions.

Moreover, **Lithuania** aims to strengthen the skills and capacities of public sector researchers for engaging in high level R&D activities.

Another objective that all three **Baltic States** aim to attain is to increase the level of lifelong learning by providing ESF supported training for adults. It is expected that this will help people with low level of education to obtain a qualification and will help to increase the competitiveness of people with a higher level of education. Such training is also expected to be relevant in terms of labour market needs with the knowledge obtained subsequently applied in a work environment.

The matching or consistency of educational output with labour market needs is another important objective pursued by the **Baltic States**. This is a crosscutting issue relevant to all education levels. **Estonia** and **Lithuania** aim to improve the compatibility of vocational training and higher education with labour market needs. The relevance of vocational training is expected to be increased by introducing and strengthening apprenticeship training, creating modular vocational study programmes, ensuring opportunities to complete part of the vocational training programme ‘on the job’. The consistency of higher education with labour market needs is expected to be increased by introducing entrepreneurship modules, internship schemes, etc. **Estonia** and **Latvia** are additionally concerned with improving career guidance for general education and vocational training students, while **Lithuania** puts additional emphasis on the labour market relevance of adult training. Moreover, funds in **Latvia** are allocated to promoting NEET youth education and work.

Financial allocations

In terms of CP contribution (EU funding), the sector/policy area is among the most heavily prioritised in the OPs of **Estonia** and **Latvia** where it receives the 3rd largest allocation in both and a middle priority in **Lithuania** (6th largest allocation).

The shares of CP funding in comparison to total national public allocations to the sector/policy area are quite similar in all three **Baltic States**, varying by only around 4-5 percent. Although the CP contribution per capita is highest in **Estonia**, national funding is also higher than in its Baltic neighbours, thus resulting in a similar share of EU funds in total funding for the sector/policy area. The comparatively low share of EU funding is explained by high volumes of national budgetary allocations to ongoing expenditure in relation to the education system such as maintenance of school facilities, wages of staff, etc.

Table 28. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Education, skills and lifelong learning sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	412.8	9 784.9	314	7 423	4.2%
Lithuania	623.4	14 813.4	213	5 071	4.2%
Latvia	516.0	10 121.9	260	5 096	5.1%

Source: Project team calculations based on sources indicated in methodology section, 2016

The distribution of financial allocations to the attainment of various objectives within the sector/policy area does not differ significantly among the Baltic States. The highest share in each **Baltic State** is attributed to improvement of the infrastructure of education institutions. The infrastructural investments in this area account for almost 51 percent of all investments in **Estonia**, nearly 32 percent in **Lithuania** and almost 54 percent in **Latvia**. In **Estonia** and **Lithuania** a significant share of CP investments is also allocated to supporting adult training and increasing the level of lifelong learning – 11.8 percent and 16.6 percent respectively. A relatively large share of CP funding is also attributed to the introduction of modern and innovative study materials in **Estonia**, while in **Lithuania** a large share is dedicated to the improvement of students' training achievements and a reduction in the number of early school leavers.

3.11.2. Main trends and expected impacts of the CP

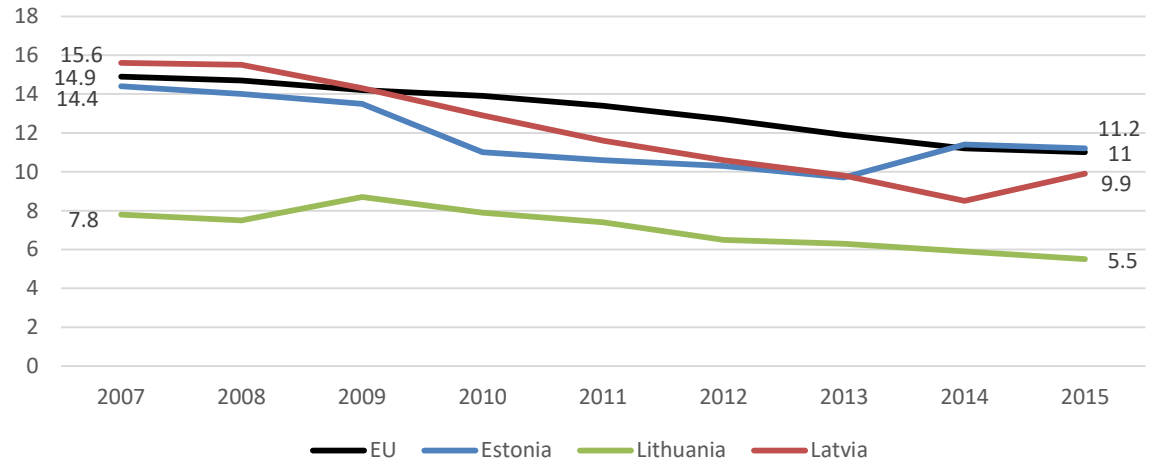
The Education, skills and lifelong learning sector/policy area covers all educational levels, numerous objectives and aims to address the issues of a wide variety of target groups. Therefore, a uniform presentation of the main trends in the sector/policy area is a difficult task. Furthermore, the Baltic States differ here in terms of achievements as regards the different education fields and target their CP investments at the attainment of slightly different objectives. Therefore, two indicators reflecting the main trends in the sector/policy area, namely the **share of early leavers from education and training** as well as the **level of tertiary educational attainment in the 30-34 year-olds age group** were analysed and the assessment of CP impact on additional three context indicators was carried out. The three context indicators selected were the **employment rate of 15-64 year-olds with at least an upper secondary education**, **at least an upper secondary educational attainment in the age group of 20-24 year olds** and the **level of lifelong learning**.

As noted above, one of the main EU objectives is to reduce the share of early school leavers (indicator - the **share of early leavers from education and training**). However, the relevance of this objective differs among the **Baltic States** (Figure 40). While **Lithuania** has a rate of early school leavers (5.5%) twice as low as the EU average and significantly better than its national target (<9%), the **Estonian** rate of early school leavers (11.2%) is almost equal to the EU average and worse than its national target (9.5%). In **Latvia**, the share (9.9%) was a little lower than the national target (10%) and the EU average. However, the share of early leavers from education and training has increased quite significantly in 2014-2015 in Latvia; therefore, it is doubtful whether the Latvian attainments will be sustainable in the long run. Despite differing trends in the drop-out rates from education and training, all three **Baltic States** do not regard the reduction of the share of early school leavers from education and training as one of the primary targets for CP investments. Even though **Estonia** and **Lithuania** expect to affect the school and education drop-out rates by career counselling and information services and the implementation of early school leaving reduction and compensation measures, a comparatively low share of measures and investments are targeted at the attainment of these goals. Under the **Latvian** OP only the objective aiming to provide individual support for NEET youths can be regarded as partially contributing to the reduction of the share of early school leavers

by encouraging NEET youths to engage in education. However, the desirable outcome of these interventions could also be employment for NEET youths. Therefore, this contributes to the reduction of the share of early school leavers only to a low extent.

Taking into account that the CP investments in the **Baltic States** are mainly directed towards the attainment of objectives other than the reduction of the share of early school leavers, the in-depth analysis of the CP impact on the development of the indicator measuring trends of early school leavers was not carried out.

Figure 40. Early leavers from education and training in Baltic States and EU

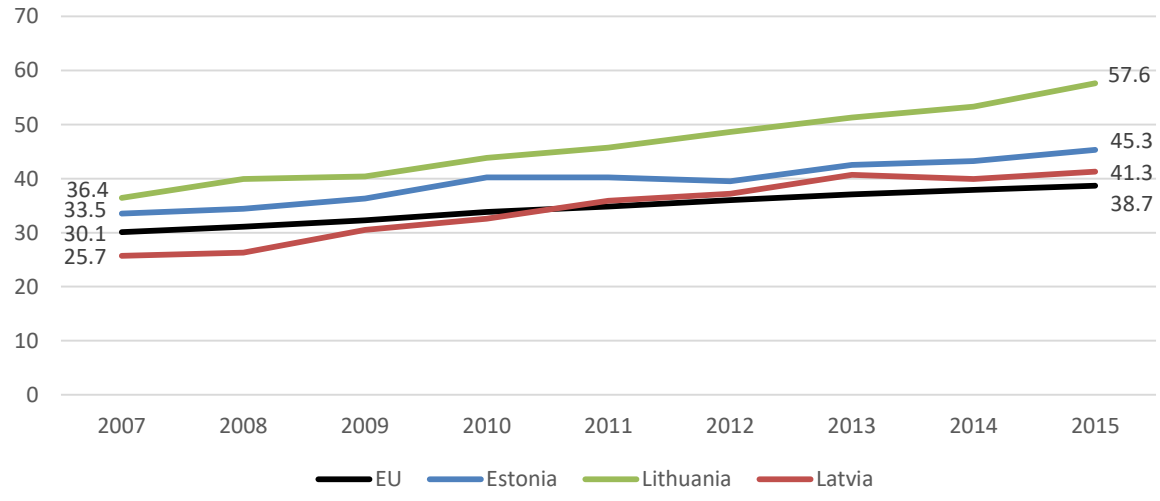


Source: Eurostat, 2016

Another EU objective is to increase the share of 30-34-year-olds having completed tertiary level education. **The level of tertiary educational attainment in the age group 30-34** in 2015 was higher than the EU average and also higher than the EU 2020 target and respective national targets in all three **Baltic States** (40% for **Estonia**, 48.7% for **Lithuania** and 34-36% for **Latvia**) (

Figure **41**). Stable growth in the 2007-2015 period allows for expectations that the educational attainment level will also remain higher than the EU average and the EU 2020 targets in the long run.

Figure 41. Tertiary educational attainment, age group 30-34 in Baltic States and EU



Source: Eurostat, 2016

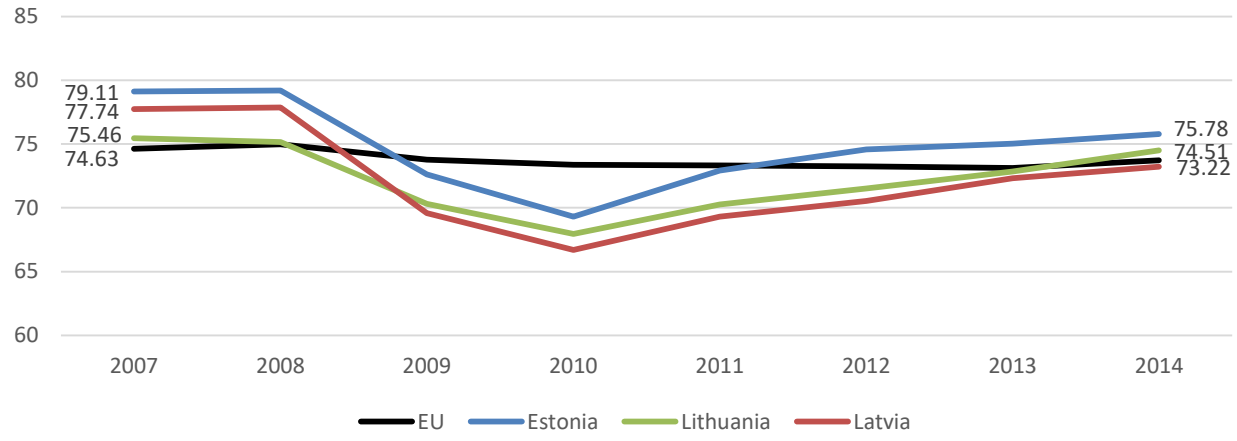
Taking into account the relative success of the **Baltic States** in ensuring this high tertiary educational attainment level in the age group of 30-34-year-olds it seems natural that the OPs of all three Baltic States do not put a strong emphasis on increasing the tertiary educational attainment of the abovementioned group. Consequently, the in-depth analysis of the CP impact on the development of the indicator measuring the share of 30-34-year-olds having completed tertiary education was not carried out.

The issues that concern all three **Baltic States** are the relevance of higher education and vocational training to labour market needs. The relevance of various levels of education in terms of labour market needs can be quite accurately reflected by the share of persons with a certain level of educational attainment who are successfully employed. Therefore, in order to reflect the relevance of upper secondary and higher education as well as vocational training the indicator measuring the **employment rate of persons aged 15-64 with at least an upper secondary educational attainment** has been analysed. Taking into account that all three OPs put a strong emphasis on higher education and vocational training compatibility with labour market needs the abovementioned indicator was also selected as a context indicator and an in-depth analysis of the impact of CP investments on its development was carried out.

After the decline in the employment rate of persons aged 15-64 years with at least an upper secondary level of educational attainment during the financial and economic recession, the rate in all three **Baltic States** has in recent years grown again quite consistently and in 2014 **Estonia** and **Lithuania** even surpassed the EU average while **Latvia** was very close to it (Figure 42).

Summing the expected CP impact with other trends (using satellite equations of macroeconomic modelling) it is estimated that the employment rate of persons aged 15-64 years with at least an upper secondary level of educational attainment in 2023 should be around 76.7 percent in Estonia, 74.3 percent in Lithuania and 73 percent in Latvia.

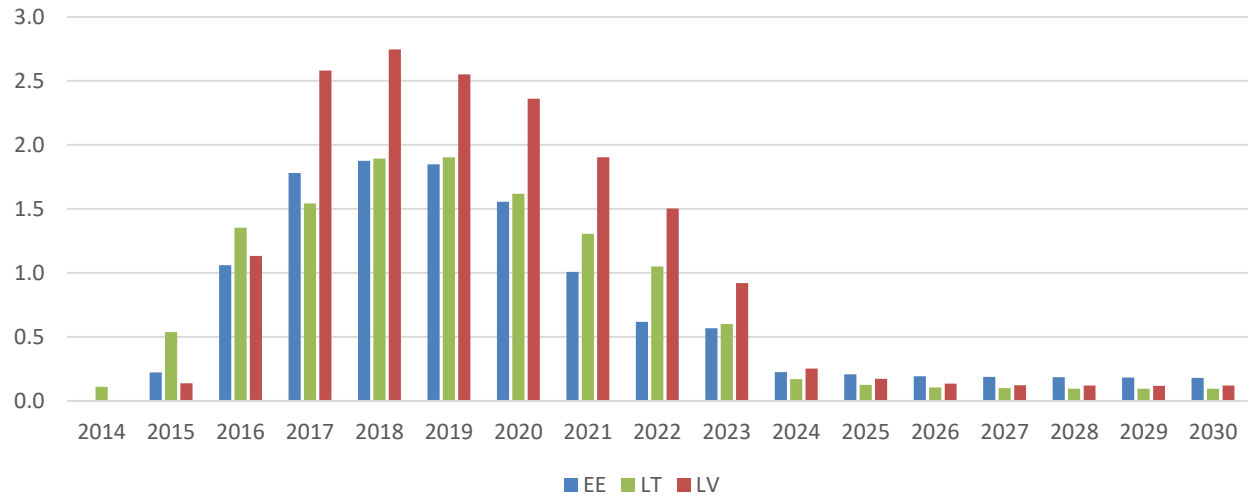
Figure 42. Employment rate (15-64 years of at least upper secondary education) in Baltic States and EU



Source: Eurostat, 2016

The macroeconomic modelling shows (Figure 43) that there are likely to be significant improvements in the abovementioned context indicator over the implementation and post-implementation phases due to the impact of CP investments. The biggest impact in the **Baltic States** is expected in 2018-2019 when the employment rate of persons aged 15-64 years with at least an upper secondary level of educational attainment will be higher by 1.9-2.8 percent. The CP annual impact during 2014-2023 averages out to 1.1 percent in **Estonia**, 1.2 percent in **Lithuania** and 1.6 percent in **Latvia**. The impacts on the employment rate after the OPs completion are significantly smaller and in 2024-2030 average out to 0.19 percent in **Estonia**, 0.11 percent in **Lithuania** and 0.15 percent in **Latvia** annually.

Figure 43. CP impact on employment rate (15-64 years of at least upper secondary education), percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

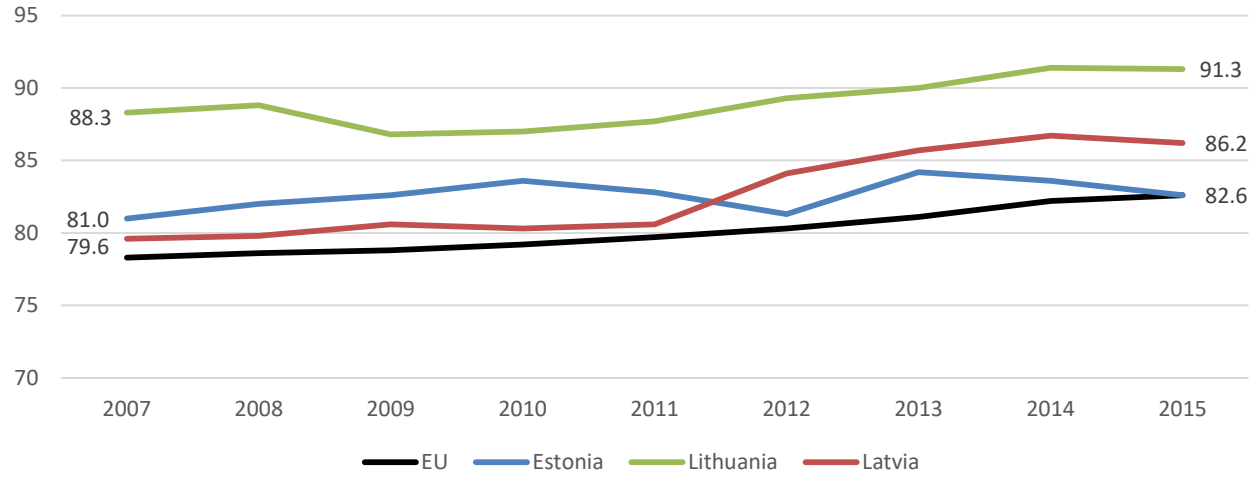
Besides aiming to increase the labour market relevance of higher education and vocational training, a comparatively high share of CP investments in all three **Baltic States** is also dedicated to the improvement of the quality of general education. Estonia aims to reform the general education school network, improve the teaching competence of the teaching staff, principals and youth workers as well as to introduce modern and innovative study materials. Lithuania, besides investing in general education infrastructure, also aims to improve student's training achievements. Latvia has dedicated a large share of investments for improvement of general education institutions but also aims to improve the quality of general education by developing a competency-based general curriculum and supporting general education institutions to develop students' individual competences.

The quality of general education is usually understood as the tangible balance between two main components – efficiency and equity. The former means that high quality general education should ensure a high level of student achievement while the later means that the high quality general education should also be inclusive ensuring that it adapts to the needs of every student and helps them to successfully attain the level of education compatible with their abilities and society's needs.

As comparable long-term data on student achievement in the **Baltic States** is not available, the general education quality is defined by its inclusiveness component and measured as the **share of 20-24-years-old persons with at least an upper secondary level of educational attainment**.

The share of persons aged 20-24 with at least an upper secondary level of educational attainment was higher in all three **Baltic States** than the EU average during the whole period 2007-2015 (Figure 44). **Lithuania** outperformed its Baltic neighbours in terms of this indicator.

Figure 44. At least upper secondary educational attainment, age group 20–24 in Baltic States and EU

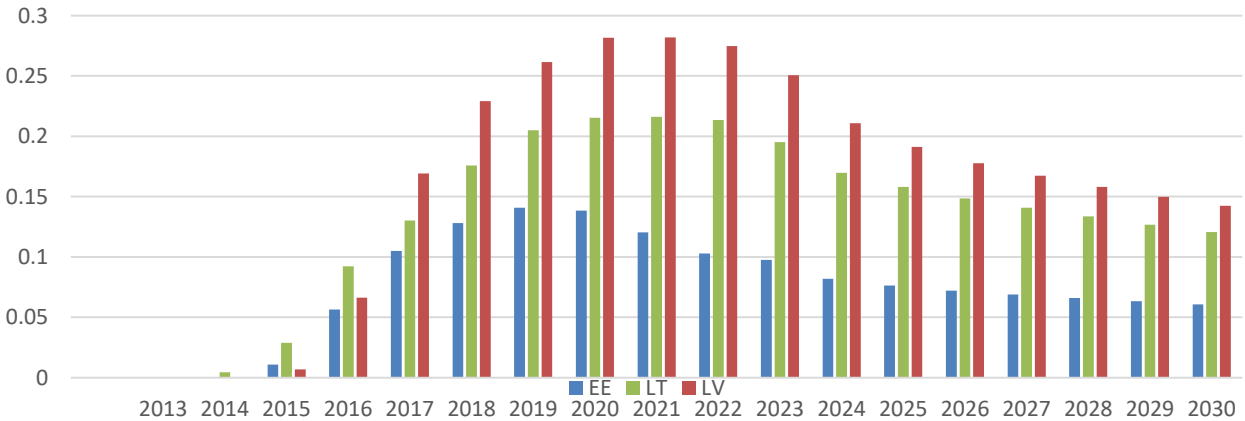


Source: Eurostat, 2016

The forecasts of the study suggests that the share of persons aged 20-24 with at least an upper secondary level of attainment in 2023 should be further increased and could be around 85.7 percent in **Estonia**, 96.4 percent in **Lithuania** and 91.6 percent in **Latvia**. These estimations are in line with the forecasted growth of the economies and improving quality of life as well as with the increasing variety of supply and quality of secondary education.

Macroeconomic modelling shows (Figure 45) that the CP investments will have some impact on the abovementioned context indicator during the implementation and post-implementation phases in all three **Baltic States**. Due to the CP investments the share of persons aged 20-24 with at least an upper secondary educational level of attainment will be increased by 0.1-0.2 percent on average annually in 2014-2023 and a little less in 2024-2030.

Figure 45. CP impact on share of persons aged 20-24 with at least upper secondary educational attainment, percent

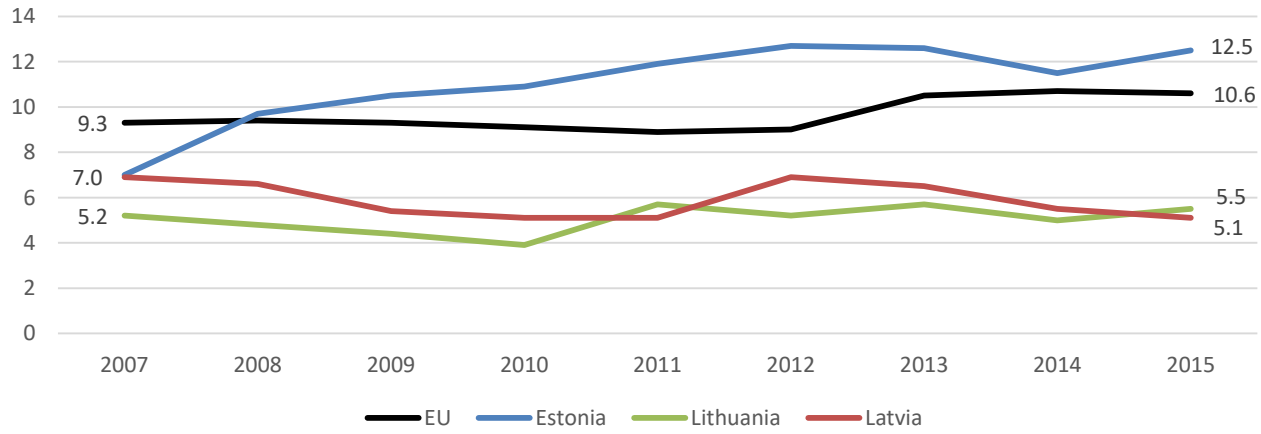


Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Another objective set in both the EU and national strategic documents as well as being targeted by CP investments in all three **Baltic States** is to increase the level of lifelong learning.

Current levels of lifelong learning as well as ongoing trends differ among the **Baltic States** (Figure 46). In **Estonia** the level steadily increased during the whole 2007-2015 period. In 2015 it was significantly higher than the EU average as well as more than twice as high as that of its Baltic neighbours. Improvements in the level of lifelong learning in Lithuania and Latvia were however rather more volatile. Despite the fluctuation the level did increase slightly in **Lithuania**. In Latvia however the level in 2015 was lower than that observed in 2007.

Figure 46. Level of lifelong learning in Baltic States and EU

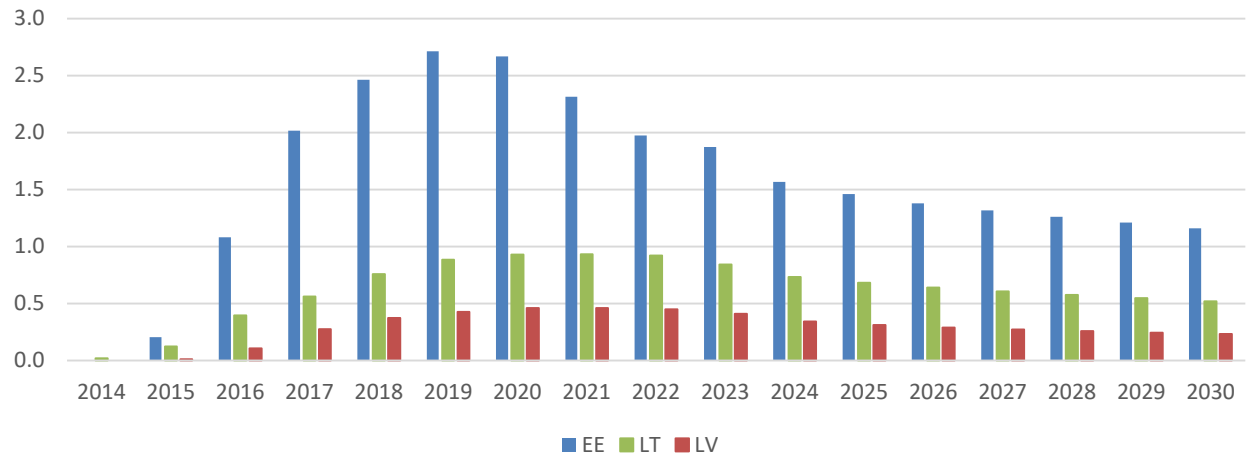


Source: Eurostat, 2016

Study forecasts suggest that in 2023 the level of lifelong learning could be around 18.6 percent in **Estonia**, while the forecasts for Lithuania and Latvia are rather moderate – growth to 6.3 percent in **Lithuania** and 6 percent in **Latvia** in 2023.

An increase in the level of lifelong learning is set as an important objective for CP investments in all three **Baltic States**. In **Estonia** it is envisioned to support the participation in continuing education of 78 000 adults equating to around 12 percent of the total active population and additionally to provide 108 000 adults with the career guidance. In **Lithuania** 5 400 employees of educational institutions, 5 500 persons studying under formal education and 15 000 persons studying under non-formal education programmes will be supported by CP investments. Additionally, Lithuania aims to support the training of 19 500 employees of micro, small and medium-sized enterprises as well as 65 000 employed people by enabling them to participate in training, awarding a qualification or competence. The number of persons envisioned to be supported in this way to participate in lifelong learning activities equates to around 8 percent of the working-age population in **Lithuania**. In **Latvia** the training of 25 693 employed persons aged above 25 and 12 934 employed persons aged above 25 with a low level of education is envisioned for support by CP investments. The number of supported persons that have been enabled to participate in lifelong learning activities in **Latvia** equates to around 4 percent of the total active population. Taking into account only those investments related directly to the aim of increasing the level of lifelong learning, the highest jump in the level of lifelong learning after the programming period would be expected in **Estonia**. As however the indicator measures only those persons that have participated in education and training four weeks prior to the survey, it is not only the total number of persons participating in the training programme that is important, but also the regularity of their participation. Therefore, the annual impact of the whole package of CP investments in the Education, skills and lifelong learning sector/policy area is key here.

Figure 47. CP impact on level of lifelong learning, percent



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Macroeconomic modelling shows (Figure 47) that there are likely to be some improvements in the level of lifelong learning due to the impact of CP investments. During the implementation period, the CP annual impact averages out to 1.7 percent in **Estonia**, 0.6 percent in **Lithuania** and 0.3 percent in **Latvia**. The impacts after the OPs completion in 2023 up to 2030 average out to 1.3 percent in **Estonia**, 0.6 percent in **Lithuania** and 0.3 percent in **Latvia** annually.

The CP impact on other OP objectives

Lithuania and **Latvia** do set additional goals in the higher education sector. Both countries are investing in the modernisation of the higher education institutional infrastructure with additional emphasis on the science, technology, engineering and mathematics (STEM) study programmes in **Latvia**. The impact of CP investments on attaining the objectives of higher education infrastructure modernisation is expected to be high in **Lithuania**. However, the CP impact on the **Latvian** objective of modernisation of the study infrastructure for successful implementation of STEM study programmes is expected to only be medium, as the number of infrastructural units required for implementation of the STEM study programmes envisioned for modernisation will be not enough to attain the target. In order to increase the extent of the contribution made by CP investments, either a higher share or amount of investments should be allocated to the modernisation of the infrastructure required for implementation of STEM study programmes, or the target value of the result indicator should be less ambitious.

Both Lithuania and Latvia also aim to increase the overall quality of higher education. **Lithuania** is expecting to increase the quality of higher education by reinforcing monitoring, external evaluation and promoting the efficient management of higher education. The extent of the contribution of CP investments with regard to this objective is expected to be high. **Latvia** aims to ensure the quality of higher education by reducing the fragmentation of study programmes and by strengthening resource sharing, strengthening academic personnel and ensuring better governance of higher education institutions. However, the extent of the contribution of CP investments to the attainment of these targets is expected only to be medium to high. In most cases, the outputs financed will directly and to a high extent contribute to the attainment of the target values of the result indicators reflecting Latvia's objectives, except for the result indicators measuring the supported new joint doctoral study programmes and new study programmes in EU languages (other than Latvian) that have received quality accreditation. The number of joint doctoral study programmes and new study programmes in EU languages (other than Latvian) envisaged for introduction by the CP investments is too low to have a significant effect on the attainment of the target value of the abovementioned result indicators. In order to increase the extent of the contribution made by the CP investments, the higher share

of investments should be allocated to the introduction of the abovementioned study programmes or the target value of the result indicator should be less ambitious.

3.11.3. Conclusions

In terms of the analysed indicators of the Education, skills and lifelong learning sector/policy area the three **Baltic States** in most cases were in better positions than the EU average. The share of early leavers from education and training in the **Baltic States** was better than the EU average and fulfilled the national target in relation to EU 2020, except in **Estonia**. The level of tertiary education attainment, the level of at least upper secondary educational attainment and employment rates of 15-64 year-olds with at least an upper secondary education in the **Baltic States** were also better than related EU 2020 national targets and EU averages, except for the employment rate in **Latvia**. However the level of lifelong learning in **Lithuania** and **Latvia** was low and below the EU average. Only **Estonia** surpassed the EU standard in this area.

To facilitate further progress in the sector/policy area **Estonia** and **Latvia** prioritised it in their OPs and allocated the 3rd largest level of EU funding to it – nearly 413 million EUR and 516 million EUR respectively. EU funding to the sector/policy area in **Lithuania** is the 6th largest and equates to around 623 million EUR. Although the shares of CP funding in comparison to total national public allocations to the sector/policy area amount to only around 4-5 percent, the CP investments facilitate major changes in the sector/policy area, as high volumes of national budgetary allocations are related to ongoing expenditures such as the maintenance of school facilities, staff wages etc.

All three **Baltic States** OPs target the main issues of educational systems, highlighted in the national strategic documents and CSR 2016. The **Estonian** OP however adopts a more focused approach on fewer selected issues, while the **Lithuanian** and **Latvian** OPs aim to tackle multiple issues across all educational levels. CP investments in all three **Baltic States** aim to increase the quality of general education, foster lifelong learning and ensure that studies across all educational levels are in line with labour market needs. **Lithuania** and **Latvia** additionally place emphasis on vocational training and higher education development.

In order to attain their selected objectives all three **Baltic States** aim to improve their educational infrastructure, staff qualifications and educational resources (especially based on ICT). Additionally, **Estonia** is expecting to increase the efficiency of their general education school network, thus increasing accessibility to high level education across the country, while **Lithuania** and **Latvia** aim to strengthen their higher education quality assurance systems (improving both institutional management and external evaluation).

In terms of matching education supply with labour market demand, CP investments are expected to improve the employment rate of persons aged 15-64 years with at least an upper secondary level of educational attainment. Based on the macroeconomic modelling results it is expected that these investments will on average annually increase employment rates by 1.1 percent in **Estonia**, 1.2 percent in **Lithuania** and 1.6 percent in **Latvia** during the period 2014-2023. The impacts on the employment rate in the period 2024-2030 average out to 0.19 percent in **Estonia**, 0.11 percent in **Lithuania** and 0.15 percent in **Latvia** annually. Study forecasts suggest that the employment rate of persons aged 15-64 years with at least an upper secondary level of educational attainment in 2023 should be around 76.7 percent in **Estonia**, 74.3 percent in **Lithuania** and 73 percent in **Latvia**.

CP investments will positively affect the level of educational attainments in the **Baltic States** monitored by the share of persons aged 20-24 with at least an upper secondary educational attainment. Due to the CP investments the share is expected to be increased by 0.1-0.2 percent on average annually in 2014-2023 and a little less in the period 2024-2030. Up to 2023 further growth is expected in the share of persons having at least an upper secondary level of attainment due to economic growth and an improving quality of life as well as an increasing variety in terms of the supply of secondary education.

The CP impact on the level of lifelong learning is expected to be more significant in **Estonia** than in the other Baltic States. During the implementation period the impact averages out to 1.7 percent. In **Lithuania** and

Latvia the impact is expected to be around 0.6 and 0.3 percent respectively. The growth in the level of lifelong learning in 2023 is expected to be most sizeable in **Estonia**.

The impact of CP investments on attaining the objectives of increasing the quality of higher education in terms of renewed infrastructure and efficient management is expected to be high in **Lithuania**. However, the extent of the CP contribution to the attainment of the **Latvian** targets to ensure the quality of higher education is expected to be between medium and high. This medium impact is caused in the main by the mismatch between product and result indicators' values envisaged in the OP.

3.12. Institutional capacity of public authorities and administration

3.12.1. EU and national policy objectives and CP interventions

It is understood EU-wide that the quality of public administration is an important driver of Europe's competitiveness. Nevertheless, in many Member States inefficient public administrations, weak judicial capacity, poor help for European businesses to overcome the barriers and legal uncertainty remain the major obstacles to expanding industrial competitiveness and promoting economic growth[132].

In order to overcome the abovementioned barriers and to improve the quality and efficiency of public administration all three **Baltic States** set certain targets in the national strategic documents[133]. **Estonia** aims to ensure that the public sector is sustainable and adaptive and that the governance of it is coherent and efficient while also taking into account the needs of the population. **Lithuania** targets the development of leadership and management competences in central and local authorities and communities, to put in place a competency management model, enabling the mobilisation of all of the competencies necessary to the successful attainment of institutional objectives and the implementation of priorities, to make the public service lean, flexible, professional, accountable and performance-driven, to enforce uniform performance and management standards across the public sector and to establish a culture of evidence-based management. **Latvia** aims to increase the level of citizens' confidence in public administration governmental organisations and EU level institutions, to increase the accessibility and capacity of government institutions through the promotion of *e*-Government and to increase the capacity of courts and law enforcement authorities.

CSR 2016 also provide certain recommendations related to the Institutional capacity of public authorities and administration sector/policy area. **Estonia** is expected to ensure the provision and accessibility of high quality public services, especially social services, at the local level, *inter alia* by adopting and implementing the proposed local government reform. It is recommended that **Latvia** strengthens the conflict of interest prevention regime and sets up a common legal framework for all public employees as well as increasing the accountability and public oversight of insolvency administrators. Even though no country-specific recommendation related to the Institutional capacity of public authorities sector/policy are was formulated for **Lithuania** in the Country Report Lithuania 2016 it is nevertheless stressed that the efficiency of public procurement should be improved. Improvement here must be attained by strengthening the administrative capacity of investment planning, simplifying rules and procedures as well as improving the transparency of public procurement in particular at the municipal level.

The CP investments target similar objectives in the Institutional capacity of public authorities and administration sector/policy area. The main objectives of the OPs of all three **Baltic States** are grouped according to their thematic similarity (Table 29).

[132] the Commission staff working document "Reindustrialising Europe: Member States' Competitiveness Report 2014"
[133] e.g. the National Reform Programme "Estonia 2020" (Estonia), Lithuania's Progress Strategy "Lithuania 2030" (Lithuania), the National Development Plan for Latvia 2014-2020 (Latvia)

Table 29. Specific objectives of Institutional capacity of public authorities and administration sector/policy area in the Baltic States

Thematic group of SPOs	SPOs in Estonian OP	SPOs in Lithuanian OP	SPOs in Latvian OP
Knowledge-based public administration	Improve policy development process through introducing mechanisms and tools for more holistic, inclusive and knowledge-based polices	Strengthen result-orientation of governance	
		Improve business regulation environment	
		Increase transparency and openness of the public administration processes	
Development of human resources	Professional competence and management of general government has increased	Improve management of human resources in the public service	To improve the competence of the staff of courts and law enforcement authorities promote improvement of business environment
			Professional development of public administration for development of better legal regulation in the fields of support to small and medium-sized enterprises, anti-corruption and mitigation of the shadow economy
Quality of public services	Public services are provided accessibly, uniformly and in a user-centred and smart manner	Improve the quality of services and make them more customer-oriented	

Source: OPs information and aggregation by project team, 2016

All three **Baltic States** aim to improve the professional competence and management of human resources in the public service. The **Estonian** and **Lithuanian** OPs intend to increase administrative capacity of the central and local government generally, while the **Latvian** OP emphasises professional competence development in the public administration and the development of better legal regulation in the business support, anti-corruption and mitigation of the shadow economy fields.

Both **Estonia** and **Lithuania** set the objective to improve the policy development process through the introduction of mechanisms and tools to promote evidence and knowledge-based policies, the result orientation of governance. Development of new public consultation mechanisms, the launch of an anticorruption measures as well as improvement of the business regulation system are emphasised in **Lithuania** as additional tools to strengthen public administration system.

Moreover, the **Estonian** and **Lithuanian** OPs aim to improve the quality of public services making them more customer-oriented.

It is also important to note that the development of the Institutional capacity of public authorities and administration sector/policy area will be supplemented by a part of the CP's investments directed towards the ICT sector/policy area. **Estonia** plans to invest in basic services infrastructure supporting the take up of *e*-services, while **Lithuania** and **Latvia** will aim to increase the re-use of public sector information for business and public needs and ensure the accessibility and quality of electronic public and administrative services under the ICT sector/policy area. These investments will help to increase the accessibility and quality of public services provision to the public thus contributing to the attainment of the objectives set in the Institutional capacity of public authorities and administration sector/policy area.

Financial allocations

Financial allocations to the Institutional capacity of public authorities and administration sector/policy area in all three **Baltic States** are low in comparison to many of the other policy areas. However, there are significant differences between the Baltic States. Sizeably larger allocations per capita were foreseen in the **Lithuanian** and particularly in the **Estonian** OP. In **Estonia,** EU funding per capita equates to 91 EUR, in **Lithuania** 48 EUR, while in **Latvia** it amounts to only 9 EUR.

The share of CP funding compared to total national investments in the sector/policy area was largest in **Estonia** where CP funding accounted for 43 percent of total national investments. In **Lithuania** and **Latvia** the CP funding element accounted to a significantly smaller share of total national investments in this sector/policy area - 15 percent and 4 percent respectively.

The high level of CP financial contribution to the Institutional capacity of public authorities and administration sector/policy area in **Estonia** demonstrates its intention to implement broad reform of the public sector and to introduce innovative management tools as well as ICT solutions into administrative practice among other measures, while in **Latvia** CP funding in this sector/policy area is mostly dedicated to the development of human resource. The **Estonian** approach to implement the development of e-services under Institutional capacity of public authorities and administration sector/policy area explains higher CP contribution per capita to the sector/policy area.

Table 30. Indicative CP financial allocations from 2014-2020 OP and national investments (forecast for 2014-2020) in the Institutional capacity of public authorities and administration sector/policy area

Baltic State	CP contribution (EU funding), million EUR	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
Estonia	119.3	280	91	213	43%
Lithuania	141.1	923.6	48	316	15%
Latvia	17.8	410.9	9	207	4%

Source: Project team calculations based on sources indicated in methodology section, 2016

In **Estonia** the largest share (almost 75%) of CP investments in this area will be attributed to the attainment of the objective to increase the quality of public services provision mainly associated with *e*-environment and ICT solutions. The largest share of **Lithuanian** CP investments will be attributed to attainment of the goal designed to strengthen the result-orientation of governance. CP investments in **Latvia** will be directed towards the improvement of professional development of public administration.

3.12.2. Main trends and expected impacts of the CP

Due to the lack of comparable data among the **Baltic States** and the lack of indicators using long data series related to the Institutional capacity of public authorities and administration sector/policy area investments in general, no context indicator was selected for this sector/policy area. Nevertheless, the overall extent of the contribution made by CP investments to the attainment of the objectives related to the Institutional capacity of public authorities and administration sector/policy area is expected to be significant in all three **Baltic States**. In **Estonia** and **Lithuania** CP investments will affect the attainment of the OPs objectives to a medium-high extent, while in **Latvia** the extent of the contribution made by CP investments to the attainment of the objectives in this area will be high.

CP investments will affect the professional competence and management of human resources in the public service in all three **Baltic States** to a high level.

The CP will also have a medium to high impact on the development of knowledge-based public administration in **Estonia** and **Lithuania**.

The CP funds in **Estonia** will be attributed to the development of a centralised coordination mechanism, the engagement of NGO's and other stakeholders in decision-making processes as well as the introduction of impact evaluation and are expected to make a significant contribution towards strengthening inclusive and knowledge-based governance. However, as the target value of the result indicator is not yet determined the extent of the contribution cannot be assessed.

It is expected that the contribution to the strengthening of the result-orientation of governance in **Lithuania** will be high. The improvement of the business regulation environment in Lithuania will however be affected by CP investments only to a medium-high extent. A certain number of projects related to the introduction of better regulation, a certain number of advanced measures for the supervision of business in supervisory institutions as well as a certain number of activities designed to strengthen staff competences in public administration institutions are envisioned for implementation. However, in order to have a significant impact not only the implementation of a certain number of projects, activities and training procedures but also the relevance of their content and quality and long-term sustainability should also be ensured. A medium level impact is expected in relation to CP investments targeted at increasing the transparency and openness of the public administration processes in Lithuania. Progress towards this objective will be measured by the share of public procurements performed within the calendar year on the basis of the upgraded central public procurement information system and the share of persons who apply the obtained knowledge and competences in terms of the prevention of corruption and professional ethics. The level of the CP contribution in both cases is assessed as medium. The measures supported by the CP investments in these cases cover only the upgrade of the central public procurements information system and training for public administration institution staff. However, these outputs provide the necessary but not sufficient conditions to tackle corruption and unethical practices in public administration, because corruption remains a widespread and multifaceted social phenomenon.

The contribution of CP investments to increasing quality of public service provision is expected to be at medium extent in **Estonia** and **Lithuania**.

In **Estonia** increased quality of public services is measured by three result indicators reflecting the level of satisfaction with the quality of public services among the general public and entrepreneurs as well as the level of awareness about the availability of *e*-services. CP investments are expected to affect the level of satisfaction with the quality of public services among both the general public and entrepreneurs to a medium extent. The main outputs related to the attainment of the result indicators encompass ICT development projects. However, in order to increase the level of satisfaction with the quality of public services among the general public and entrepreneurs, the implementation of planned *e*-solution projects alone is not enough, because satisfaction with the services also depends on staff qualification, services quality, etc. Moreover, ICT solutions are relevant only to particular public services, while the result indicator measures satisfaction with all public services provided. As regards the increase in the awareness of public *e*-services within the general population, the implementation of projects for the purpose of improving public services is only one of the preconditions that will affect the attainment of the target value of the result indicator then only to a small extent. The improvement of public services and public *e*-services should be complemented with awareness-raising campaigns in order to attain the target value of the result indicator.

Similarly, a medium level impact is expected on the objective to improve public services and make them more customer-oriented in **Lithuania**. Even though planned support to a certain number of public administration institutions to launch quality improvement measures with regard to services and servicing of individuals is a necessary condition in order to achieve the target value of the result indicator, in order to ensure a rise in public service quality it should be supplemented with other measures.

3.12.3. Conclusions

In terms of financial allocations this sector/policy is among the smallest. Combined financial allocations to the three **Baltic States** make up around 278 million EUR.

The CP investments will significantly affect the institutional capacity of public authorities and administration. Taking into account the fact that a significant share of central and local government employees are participating in CP supported training, at the end of the programming period, professional competencies and the management of human resources in the public sector will be increased to a medium-high level in all three **Baltic States**.

As such, a substantial improvement in terms of knowledge-based governance is expected in both **Estonia** and **Lithuania**. Development of strategic management, the impact assessment of decisions and similar initiatives will increase the quality of public administration in the long term. A somewhat smaller though still significant improvement in the business regulation environment as well as an increase in the transparency and openness of the public administration processes in **Lithuania** will be attained by using CP investments. The impact on the perceived transparency of the public administration is expected to be visible mainly because of planned improvements to the public procurement system, where efficiency and transparency alone are not sufficient according to CSR 2016.

The quality of public services as well as its customer-orientation will also be strengthened in **Estonia** and **Lithuania.** However, the impact of investments in the Institutional capacity of public authorities and administration sector/policy area is expected to be at a low to medium level. The comparatively low impact of the CP on the attainment of the objectives in **Estonia** relates to the type of investments used. The planned development of *e*-services will increase the accessibility level of some public services, however it will not be enough to solve the basic underlying issues (stated in CSR 2016) in terms of transport, education, or long-term elderly care at the local level. Similarly, in **Lithuania,** CP investments are focused mainly on organisations' quality management activities, thus in order to achieve improvements in the general quality of public services other measures should also be implemented.

3.13. CP contribution to attaining the targeted results of the OPs and CP impacts at the macroeconomic and production branch levels

3.13.1. CP contribution to attaining the targeted results of the OPs

The assessments of CP impacts on the objectives described in each sector/policy area of this report are summarised in the table below. A five-value scale was used to summarise the overall extent of CP contribution to attaining the targeted results of the OPs in a particular sector/policy area. The expected level of the contribution of the CP investments was assessed as low, low-medium, medium, medium-high or high. The overall assessment is based on estimations of outputs' contribution to the target values of the result indicators in each sector/policy area presented in the first interim report and its annexes.

The methodological approach of using the linkage between output and result indicators has both advantages and disadvantages. One of the main advantages is that the same monitoring system applied in the case of all investment priorities and specific objectives makes it possible to assess the CP contribution and compare it among different sectors/policy areas. These sectors/policy areas are very different, in terms of financial allocations, nature of problems, nature of interventions, etc. Nevertheless, they all have the same monitoring system, which is effectively exploited for making assessments of expected CP contribution. However, such methodological approach has some disadvantages as well. It depends on the quality of result indicators. Result indicators capture only part of expected changes, thus, the assessment of the contribution is affected by the actual level of changes that are covered by selected result indicators.[134]

Table 31. Summary of the CP contribution to attaining the targeted results of the OPs

	Estonia	Lithuania	Latvia
High	Transport Energy Adaptation to climate change Environment and resource efficiency ICT Health	Adaptation to climate change	Employment Social inclusion Health Education, skills and lifelong learning Institutional capacity of public authorities and administration
Medium-high	Social inclusion Education, skills and lifelong learning Institutional capacity of public authorities and administration	Employment Transport Energy Social inclusion Health Education, skills and lifelong learning Institutional capacity of public authorities and administration	Transport Adaptation to climate change Environment and resource efficiency ICT
Medium		RTDI ICT Environment and resource efficiency	RTDI
Low-medium	Employment SMEs RTDI	SMEs	SMEs Energy
Low			

Source: Project team, 2016.

[134] Please refer to methodology for more details

The role of public and private initiative differs among the sectors/policy areas. In the sectors/policy areas where private initiative has a dominant role (e.g. SMEs), it is more difficult to attain changes expressed by macro-level result indicators, since various external factors play a significant role.

A high and medium to high overall level of contribution of CP investments to the attainment of OPs objectives in all three **Baltic States** is expected in the Transport, Adaptation to climate change, Environment and resource efficiency, Health, Social inclusion, Education, skills and lifelong learning, Institutional capacity of public authorities and administration sectors/policy areas. In **Estonia** and **Latvia**, the overall contribution of CP is expected to be high in six and five sectors/policy areas respectively. In the **Lithuanian** case, one sector/policy area is expected to be affected to a high degree by CP investments while eight sectors/policy areas will be affected to a medium-high level. The CP will significantly contribute to the attainment of these targets across all these sectors/policy areas of the **Baltic States**. In quantitative terms, the CP investments are expected to be responsible for more than 50 percent of the targeted changes in the values of the result indicators. Provided that no significant negative developments of the basic economic, social and environmental conditions occur during the programming period, in the year of 2023 the values of the result indicators in the sector/policy areas that fall within the groups of high and medium-to-high are estimated to be rather close (the deviation is likely to happen to both sides - less and more than the target value) to the target values.

There are no sectors/policy areas where the expected contribution of the CP investments to the attainment of the goals was assessed as low, which is a good indication of the CP interventions' importance. The contribution of the CP investments is expected to be at its lowest in relation to the SMEs and RTDI sectors/policy areas in all three **Baltic States**. There are several reasons for such an evaluation with one of the most important being that these sectors/policy areas are dominated by private stakeholders and thus that public investments alone are unlikely to promote significant change. Since the targets set for the RTDI sector/policy area are very high, taking into account recent trends covering the CP investments in 2007-2013, it does not seem likely that the CP investments in 2014-2020 will be able to ensure the attainment of these targets. The contribution of the CP investments in the SMEs and RTDI sectors/policy areas was assessed as low-medium and medium, meaning that CP investments are expected to be responsible for about 25-50 percent of the targeted changes in result indicators. Nevertheless, the low-medium group contains only one sector/policy area in **Lithuania**, two in **Latvia** and three in **Estonia**.

Low-medium or medium assessments do not mean that the target values for 2023 will not be attained in the cases of these sectors/policy areas. Such assessments only indicate that the extent of the CP contribution is relatively lower and attaining of the target values is dependent on external factors.

3.13.2. CP macroeconomic impacts

As an introduction, a very brief overview of the performance of the three **Baltic States** economies over the years 2000-2014 is provided.

During the immediate aftermath of independence and economic liberalisation, the process of reform, contraction and consolidation was key to the transformation of the centrally planned economies of the three Baltic States. Only when the initial transition process was complete it is useful to discuss their economies in terms of functioning markets. From the year 2000 onwards it is clear that 'cohesion' processes were operating strongly in the three **Baltic States**, particularly after they joined the EU in 2004.[135] Since 2000 they have been engaged in a process of progressive integration into the EU and wider global trade zone and a process of restructuring along market lines that is described in the post-2000 data.

Real GDP is the most aggregate measure of economic performance. It is apparent that there are three growth "regimes" in the data during the 14-year period 2001-2014 (Figure 48):

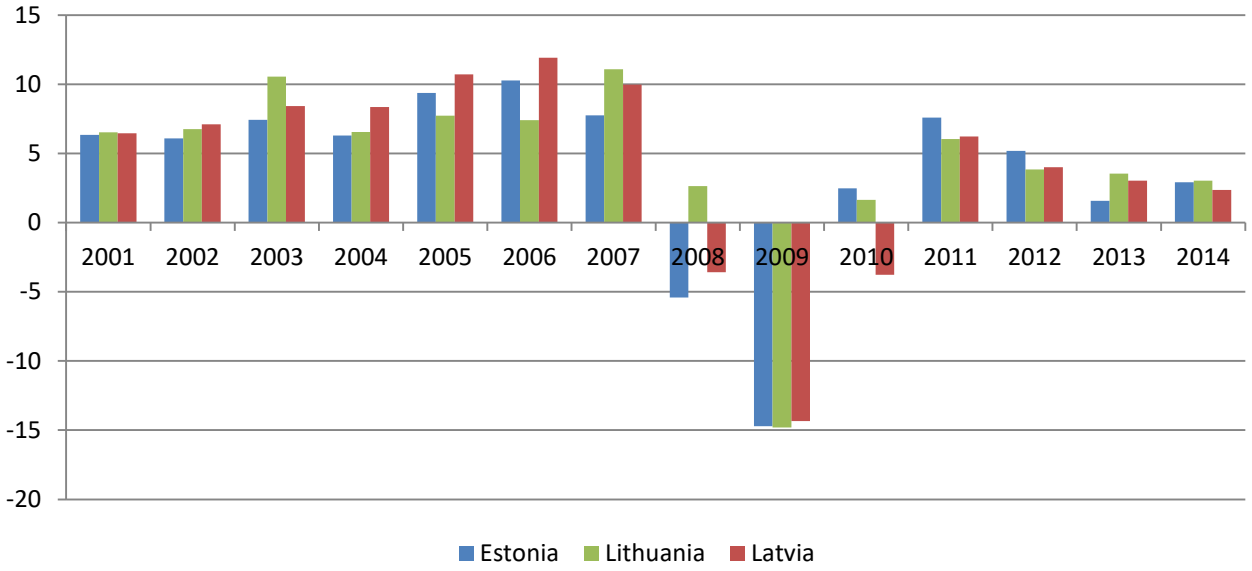
[135] The term 'cohesion' is used to mean 'real convergence' in the sense that Baltic State economic performance is improving and converging towards the EU average performance of measures such as GDP per head, productivity, etc., in the context of a liberalised market economy.

a) 2001-2007: A steady increase in growth rates during and after EU accession in 2004

b) 2008-2010: Drastic recession as the global economy imploded

c) 2011-2014: Beginning of a sustained recovery phase

Figure 48. Growth of real GDP for the Baltic States

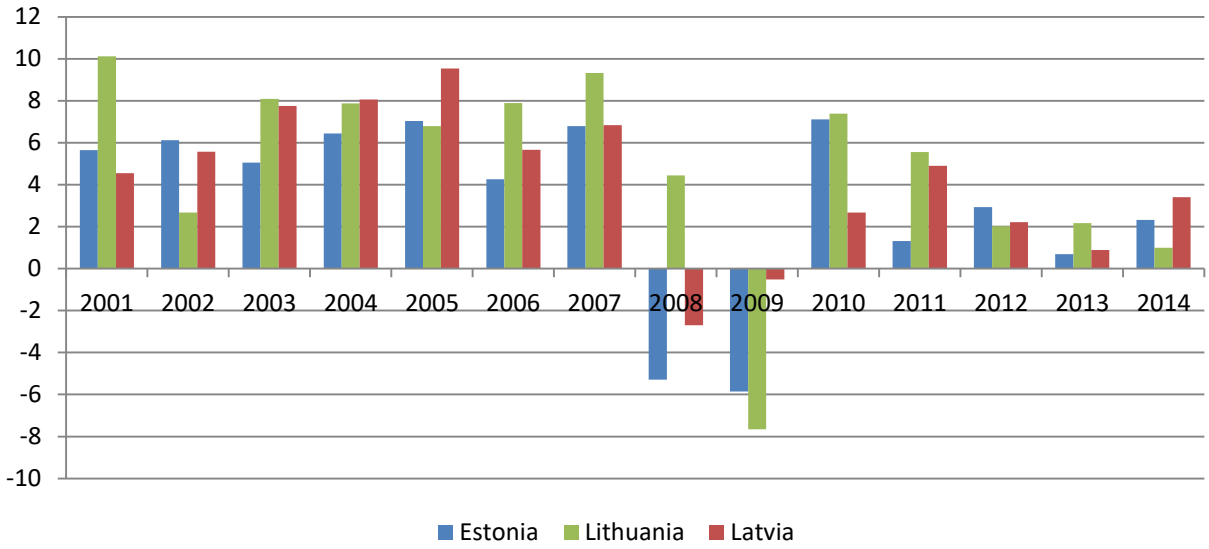


Source: Project team calculations based on AMECO database data, 2016.

Since the three Baltic States were subjected to rather similar EU and global economic forces, and all three integrated rapidly into the EU Single Market, it is not surprising that they displayed aggregate growth patterns that have many similarities. However, they were affected by the recent global financial and fiscal crisis in slightly different ways. **Estonia** was the first to move from strong positive growth (peaking at 10.3% in 2006) to negative growth (-5.4% in 2008). **Lithuania**, where growth had peaked at 11.1 percent in 2007, only experienced a growth slowdown (to 2.6%) in 2008 and the start of negative growth (-14.8%) in 2009. **Latvia**, which essentially experienced very high, double digit growth during the years 2005-2007, moved to negative growth (-3.6%) in 2008. In each country, 2009 was the deepest of the recession. Lithuania was the worst hit (-14.8%), followed by Estonia (-14.7%), and then by Latvia (-14.3%). By 2011, growth became positive and there was a steady recovery to 3 per cent growth by 2014.

All three countries experienced rather erratic growth rates in terms of GDP per person employed in the pre-recession years (Figure 49). When the global financial and fiscal crisis hit at the end of 2008, the long-term pattern of productivity growth was interrupted and there was an actual decline in productivity growth in 2008–2009, peaking at -5.9 per cent in **Estonia** in 2009; -7.7 per cent in **Lithuania** in 2009; and -2.7 per cent in **Latvia** in 2008. Productivity growth returned in 2010 for all three countries.

Figure 49. Annual change in GDP per person employed for the Baltic States

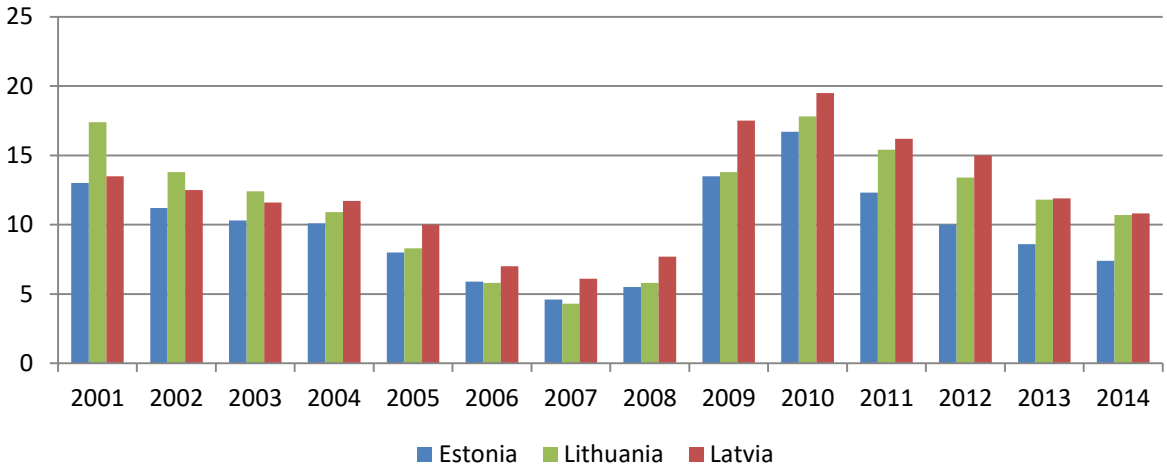


Source: Project team calculations based on AMECO database data, 2016.

The contraction in productivity is usually explained in terms of "labour hording" by firms when they are hit by a sudden contraction in demand for their goods and services. Initially firms are usually reluctant to lay off skilled workers as the rate of capacity utilisation in their businesses falls. If recovery comes quickly, the rate of capacity utilisation rises again and productivity growth is restored. If the recession is of long duration, workers are laid off, and that serves to drive up productivity.

Turning to the labour market, as **Lithuania** approached the year of EU entry (2004), it had a chronically high rate of unemployment, peaking at 17.4 per cent of the labour force in 2001 (Figure 50). The subsequent six years of positive growth served to reduce the rate of unemployment to a low of 4.3 percent in 2007, and 5.8 percent in 2008. However, the recession caused this to rise abruptly, to 13.8 percent in 2009 and to 17.8 percent in 2010. Even by 2014 the rate was still very high, at 10.7 percent. The experiences of **Estonia** and **Latvia** were broadly similar.

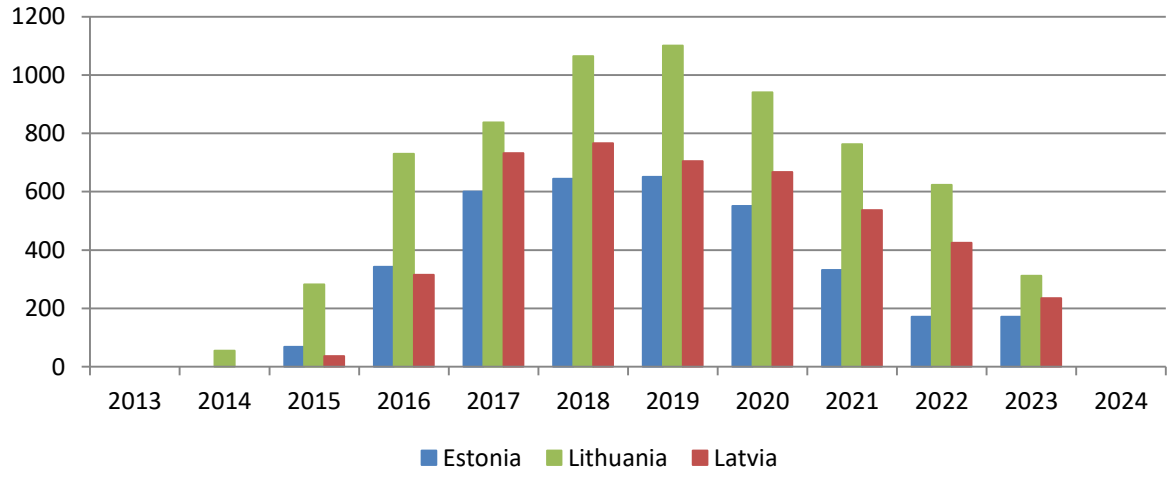
Figure 50. Unemployment rate for the Baltic States



Source: AMECO database, 2016.

In the period 2014–2023 CP annual financial allocations will play an important role in the economic development of the three **Baltic States**, constituting up to half (or even more) of the forecast annual growth of these economies. The total CP financial allocations to each of the Baltic States are shown in Figure 51. In the case of Lithuania, expenditure starts in 2014, but in the cases of Estonia and Latvia, a later start in 2015 occurs. In all three cases, the expenditure builds up to an annual peak by 2018/19 and declines slightly thereafter.

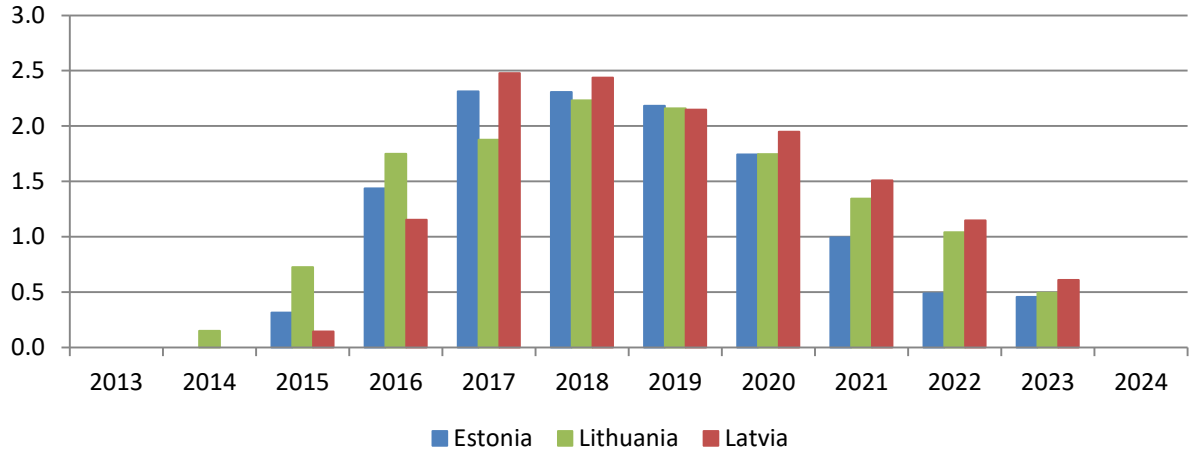
Figure 51. Total CP financial allocations to each of the Baltic States, million EUR



Source: Project team calculations based on forecasts announced by Managing Authorities, 2016

It is easier to compare the CP allocations between the three states if we express them as a percentage of GDP, and this is shown in Figure 52. It must be understood that this percentage is calculated using the model-generated baseline projection beyond the end-of-sample year 2014. In **all three states**, the annual CP expenditure share of GDP peaks in the years 2017/2018, with **Latvia** having a slightly higher share (2.44% of GDP), followed by **Estonia** (2.31% of GDP) and **Lithuania** (2.23% of GDP).

Figure 52. Total CP financial allocations to each of the Baltic States expressed as a percentage of GDP



Source: Project team calculations based on forecasts announced by Managing Authorities, 2016

CP expenditure is allocated between three economic investment categories: physical infrastructure (PI), human resources (HR) and direct support to enterprises (APS). These shares are constant over time and take the following values (Table 32).

Table 32. CP expenditure shares by economic category (percentage of total SP expenditure)

	PI	HR	APS
Estonia	51.24	19.87	28.89
Lithuania	62.95	13.66	23.39
Latvia	63.89	14.82	21.29

Source: Project team calculations, 2016

In interpreting the impact numbers, two factors need to be kept in mind. First, only the impacts of the CP programmes are examined. Between the with-CP simulation and the without-CP simulation, nothing else has changed. In other words, all domestic policy actions and all external/world factors are identical in both simulations after 2013. Second, the comparison of the impacts of the CP programme with any other purely national investment programme would require to quantify the nature of the national programme in terms of changes to a domestic policy instrument during the years after 2013 (Policy X) and carry out a with-X simulation. The with-Policy X result would then be compared to the existing without-CP baseline simulation and the result would be the likely impacts of Policy X in isolation from all other changes. Only then the CP programme impacts can be compared to the Policy X impacts.

The most general impact measure for the CP is the "cumulative multiplier"[136]. This accumulates the impacts on GDP by adding the annual percentage increases in GDP, and divides this running total by the accumulated shares of the CP expenditure expressed as a percentage of GDP. The "cumulative multiplier" is designed to take account of the fact that the magnitude of the CP shock varies from year to year over the full implementation period 2014-2023, and is zero thereafter. As the CP programme is progressively implemented, it is relevant to assess how the accumulating investments give a return in terms of accumulating increments in GDP. In other words, if, say, by the year 2023 we have spent X million EUR, how much have we got in terms of accumulated increments of GDP? It is easiest to understand in terms of Table 33.

Table 33. Cumulative multipliers

	Estonia			Lithuania			Latvia		
	CumCP	CumGDP	CumMult	CumCP	CumGDP	CumMult	CumCP	CumGDP	CumMult
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.15	0.18	0.00	0.00	0.00	0.00
2015	0.32	0.42	1.32	0.88	1.13	1.29	0.15	0.18	1.22
2016	1.75	2.47	1.41	2.63	3.64	1.39	1.30	1.69	1.30
2017	4.07	6.08	1.49	4.50	6.66	1.48	3.78	5.25	1.39
2018	6.37	10.08	1.58	6.73	10.45	1.55	6.22	9.28	1.49
2019	8.56	14.18	1.66	8.90	14.42	1.62	8.37	13.25	1.58
2020	10.30	17.83	1.73	10.64	17.99	1.69	10.32	17.07	1.65
2021	11.29	20.50	1.81	11.99	21.08	1.76	11.82	20.37	1.72
2022	11.78	22.40	1.90	13.03	23.74	1.82	12.97	23.17	1.79
2023	12.24	24.17	1.97	13.52	25.61	1.89	13.58	25.20	1.86

[136] The concept of "cumulative multiplier" is also explained in Annex 10.

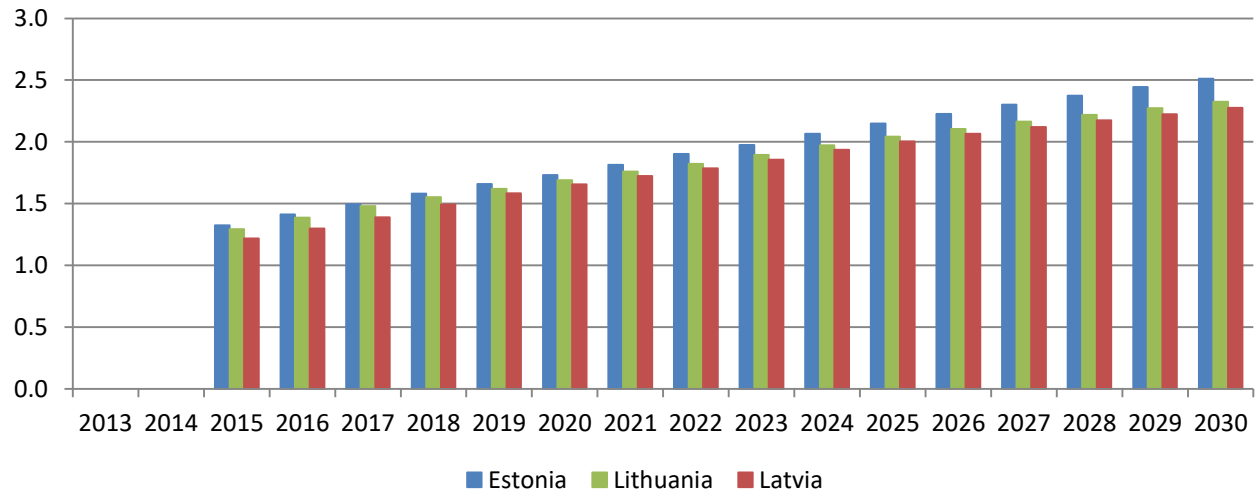
	Estonia			Lithuania			Latvia		
	CumCP	CumGDP	CumMult	CumCP	CumGDP	CumMult	CumCP	CumGDP	CumMult
2024	12.24	25.28	2.07	13.52	26.68	1.97	13.58	26.31	1.94
2025	12.24	26.30	2.15	13.52	27.61	2.04	13.58	27.22	2.00
2026	12.24	27.25	2.23	13.52	28.45	2.10	13.58	28.04	2.06
2027	12.24	28.17	2.30	13.52	29.25	2.16	13.58	28.80	2.12
2028	12.24	29.05	2.37	13.52	30.01	2.22	13.58	29.52	2.17
2029	12.24	29.91	2.44	13.52	30.74	2.27	13.58	30.22	2.22
2030	12.24	30.75	2.51	13.52	31.45	2.33	13.58	30.89	2.27

Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

In the case of Lithuania, the accumulated CP expenditure share rises systematically from 2014 to a peak of 13.52 per cent of GDP in 2023. Since the CP expenditures terminate after 2023, the total remains constant at 13.52 per cent. As the CP investment boosts the economy, the accumulated percentage increases in GDP rise from 0.18 in 2014 to 25.61 in 2023. Although the CP investment expenditures terminate after 2023, the spillovers associated with the CP-induced increased stocks of physical infrastructure, human resources and R&D continue to boost GDP, and the accumulated percentage increases in GDP reach 31.45 by 2030. As the stocks of physical infrastructure, human resources and R&D depreciate, this longer-term boost to GDP gradually vanishes.

Dividing the accumulated increase in GDP by the accumulated CP expenditure shares of GDP yields the "cumulative multiplier". To summarise, the cumulative multiplier for **Estonia** reaches 2.51 by 2030; for **Lithuania** it reaches 2.33; and for **Latvia** 2.27. These numbers indicate rather high return of CP investments and only modest differences between the cumulative multipliers for the three **Baltic States**. 1 EUR of CP investment is expected to deliver 2.51 EUR of GDP in **Estonia**, 2.33 EUR in **Lithuania** and 2.27 EUR in **Latvia** within the 2014–2030. Such results are equal to the rate of return of 151 percent, 133 percent and 127 percent over 16 years in Estonia (9.4% per year on average), Lithuania (8.3 per year on average) and Latvia (7.9 per year on average) respectively. All three cumulative multipliers are illustrated in Figure 53.

Figure 53. Cumulative multipliers



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The usual presentation of CP impact results shows the way that the implementation of the CP investment programmes and other assistance is likely to change the future evolution of a range of macroeconomic

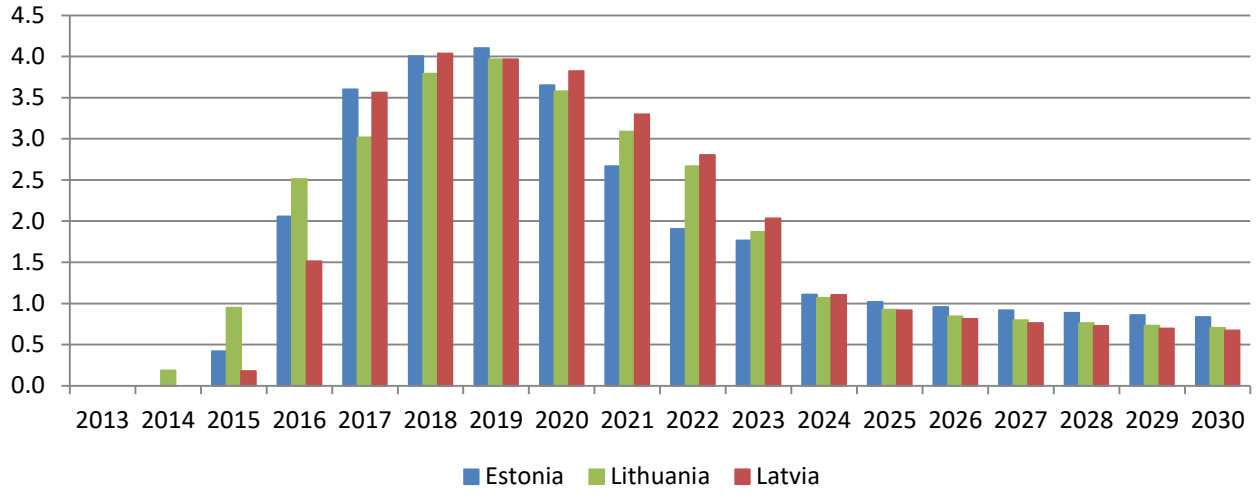
indicators. The broadest such measure quantifies the likely impact on the aggregate GDP of each of the Baltic States. For example, in the case of Latvia, the simulation suggests that in the year 2020, the end of the budget period but not the end of investments (under the n+3 rule), the level of aggregate GDP will be 3.8 percent higher than it would be in the absence of CP programmes and where no alternative policies were implemented. Using the same example, the likely impact on total employment numbers in the year 2020 is calculated as 2.6 percent: i.e., the CP programmes are likely to generate an extra 23.3 thousands jobs (net).

The following three figures show the CP impacts on the level of GDP (percentage increase over the baseline level); on total employment numbers (difference from baseline level, in thousands); and the rate of unemployment (difference from baseline rate, in percentage points).

The pattern of response to the CP shocks is broadly similar for **all three countries**. For example, based on Figure 54, in the case of Estonia the annual percentage increase in GDP compared to the baseline level of GDP starts in 2015 at only 0.42 percent, rises steadily to a peak of 4.10 percent in 2019, declines thereafter, but is still up by 0.83 percent by 2030. The effect of the termination of the CP programme after 2023 is very apparent: the level of GDP is higher by 1.76 percent in 2023, but only by 1.11 percent in 2024[137].

Due to the investments, the level of GDP in all three **Baltic States** will be significantly increased - in 2014-2023 it will be higher on average by around 2.5 percent annually.

Figure 54. CP impacts on the level of GDP (percentage increase over the baseline level)

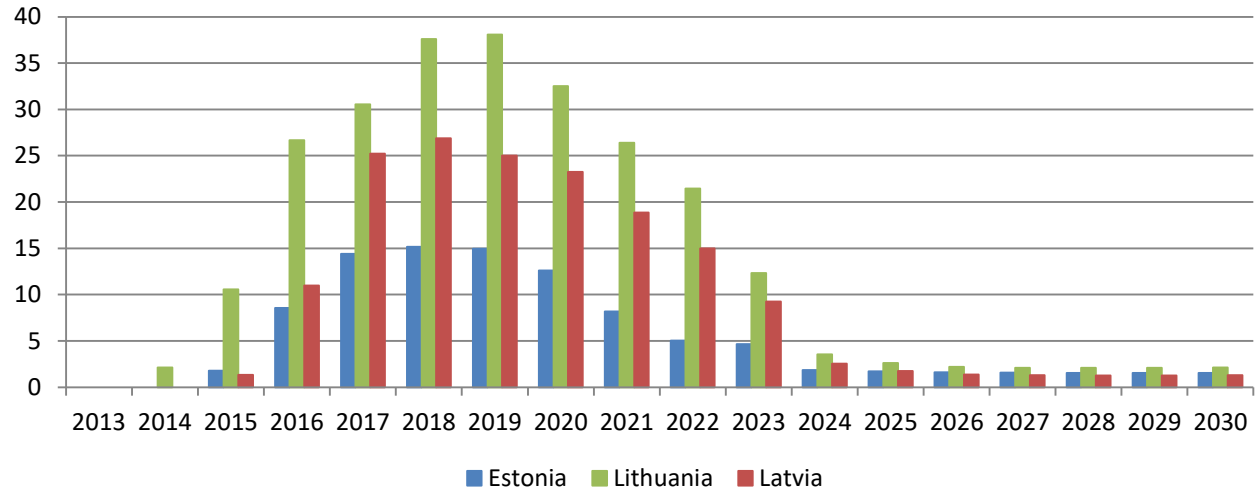


Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Figure 55 shows the net boost to total employment in terms of the differences between the "with-CP" and the "no-CP" simulations. Clearly this measure of CP impact is influenced by the size of the economy as well as by the effectiveness of the CP programmes within each country. The largest increase in total employment numbers occurs in Lithuania, where it peaks at just over 38 000 by 2019. Thereafter, the net increase declines to 12 340 by 2023 and to 3 540 in the first post-CP year, 2024. By 2030 the net increase is down to 2 140. It is important to note however that one of the impacts of the CP investments is to boost labour productivity. This drives a productivity 'wedge' between the boost to GDP and the boost to employment. This is illustrated in Figure 56, where we compare the boosts to GDP and total employment in terms of percentage changes from the baseline.

[137] It should be emphasised that we talk here about the percentage increase in the level of GDP, compared to the baseline level. In other words, it is not a permanent change in the growth rate of GDP.

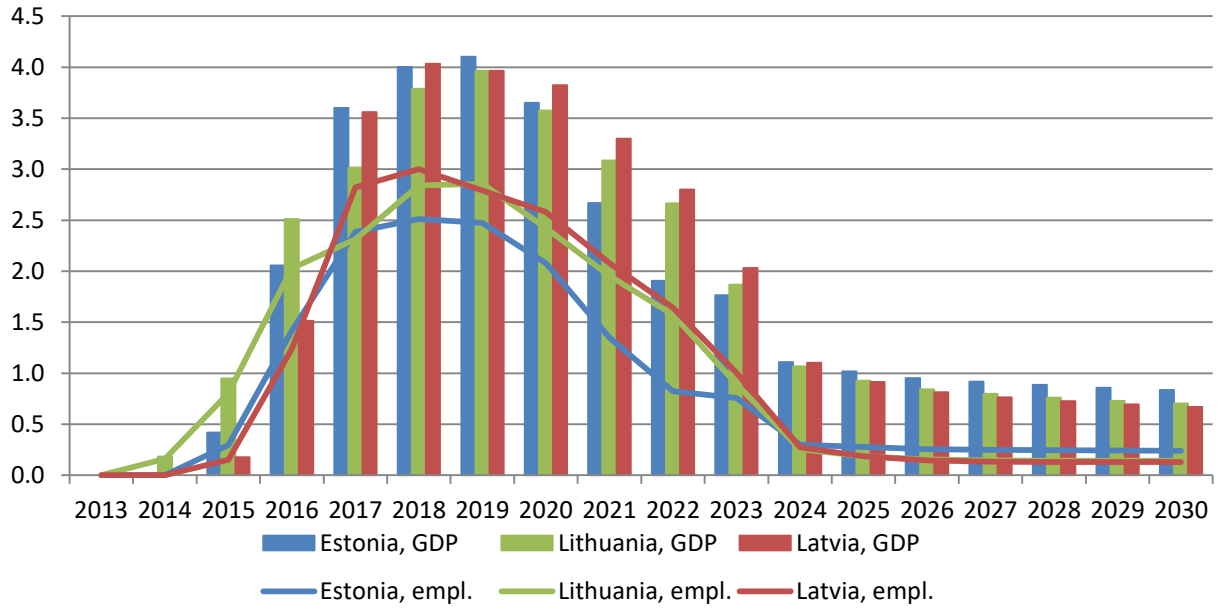
Figure 55. CP impacts on total employment numbers (difference from baseline level, in thousands)



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

It should be borne in mind here that in the simulation we carry out, the only difference between the baseline ("no-CP") case and the "with-CP" case is that the CP investments are positive in the latter simulation, and zero in the former. If we took the "with-CP" simulation and also assumed a more buoyant world economy, then all of the Baltic State economies would stand to gain more from international trade in manufactured goods if they had a high productivity labour force than if they had a low productivity labour force. The role of the CP investments is to 'position' the recipient economy advantageously to benefit from increased intra-EU trade in goods and services.

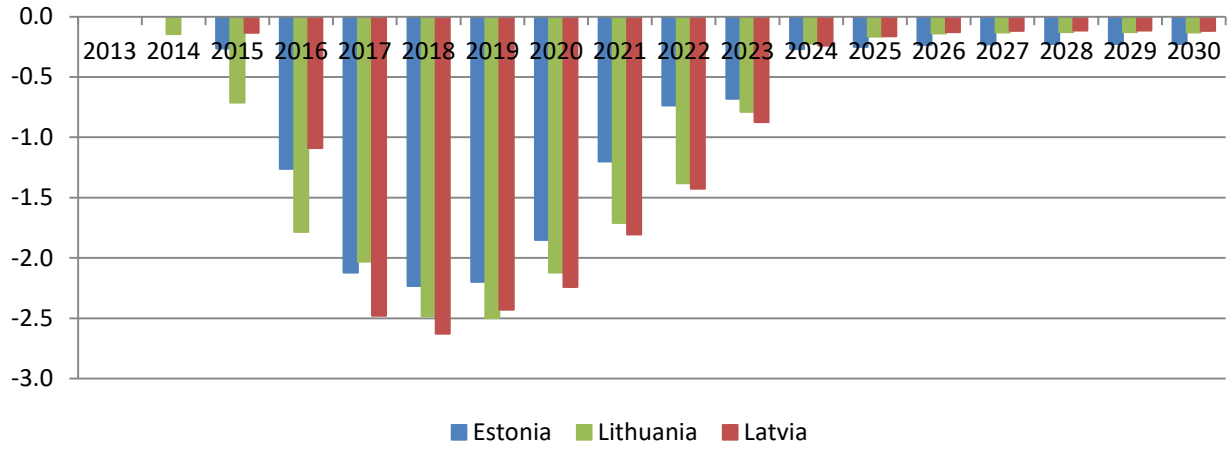
Figure 56. CP impacts on the level of GDP and employment (percentage increase over the baseline level)



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Figure 57 shows the impacts on the rate of unemployment, expressed as the differences between the "with-CP" and "no-CP" simulations. This is measured in percentage points. So, in the case of Latvia, for example, the peak reduction in the rate of unemployment is 2.63 percentage points in 2018. So if the baseline rate of unemployment had been, say, 11 per cent of the labour force in 2018, the CP would reduce it to 8.37 per cent of the labour force.

Figure 57. CP impacts on the rate of unemployment (difference from baseline rate, in percentage points)



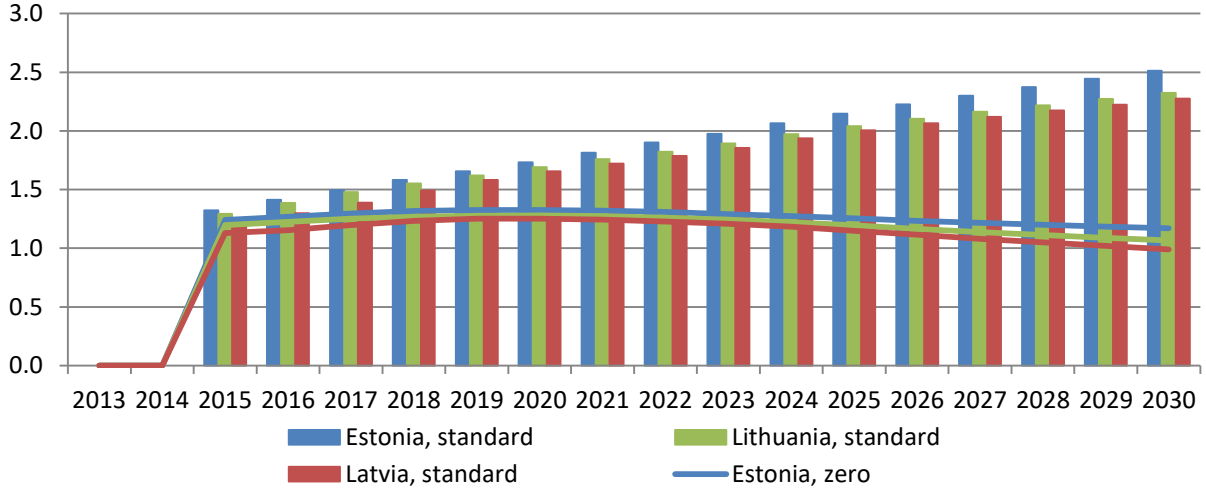
Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The importance of the spill-over effects is demonstrated in

Figure **58** and Figure 59. In these simulations we set all of the spill-over elasticities to zero. In other words, the boosts to the stocks of physical infrastructure, human resources and R&D are assumed to have no beneficial effect of the economy. Only the demand-side Keynesian impacts remain. The cumulative multipliers shown in

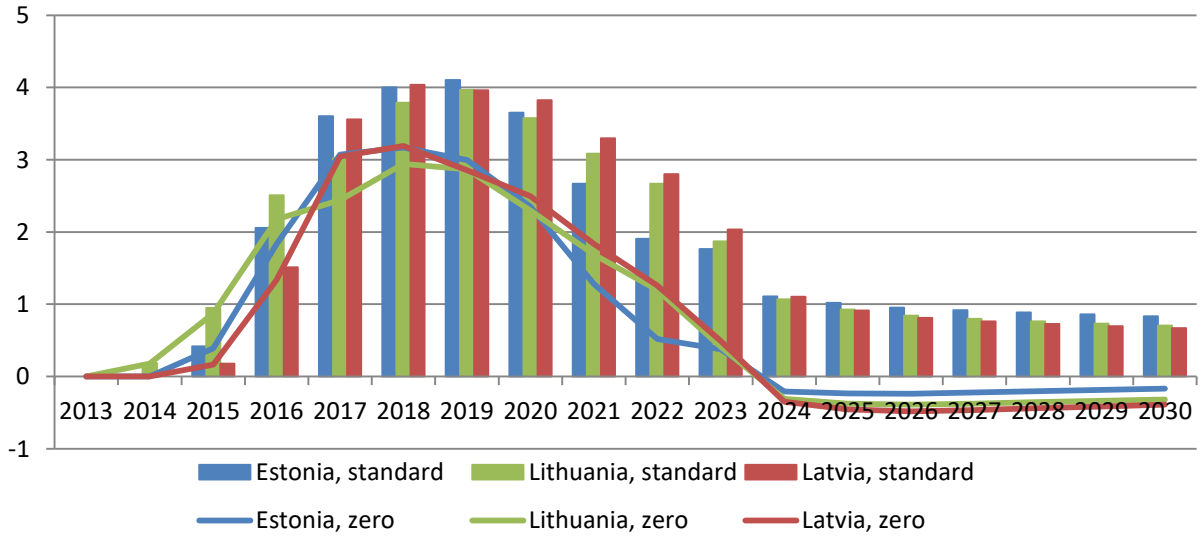
Figure **58** are much lower than in the case where the spill-over elasticities were set at realistic values. In Figure 59 we can see that while there are substantial boosts to the level of GDP during the implementation of the CP programme (2014-2023), these impacts vanish immediately after the programme ends, and there is even a small negative GDP impact, due mainly to minor competitiveness losses induced by the Keynesian impacts of the CP on the internationally traded sectors of the economy.

Figure 58. Cumulative multipliers (using standard and zero spillover elasticities)



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

Figure 59. CP impacts on the level of GDP, percentage increase over the baseline level (using standard and zero spillover elasticities)



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

3.13.3. CP impacts on production branches

Since the primary aim of the CP programmes is to boost the economic performance of the recipient economy, it is important to examine how much of an impact the CP investments have on the production branches. In Figure 60, Figure 61 and Figure 62 we show the impacts on the production branches in aggregate form. In other words, we initially treat manufacturing GDP (OT) as an aggregate and do not look 'inside' it, at its six sub-branches. The same applies to the four sub-branches of market services GDP (OM).

The importance of the Building & Construction branch (OBC) in the CP programme is immediately apparent for all three countries and reflects the high share of investment in physical infrastructure (see Table 32 above). A similar pattern emerges in Mining & Quarrying (OMQ), which feeds into building and construction.

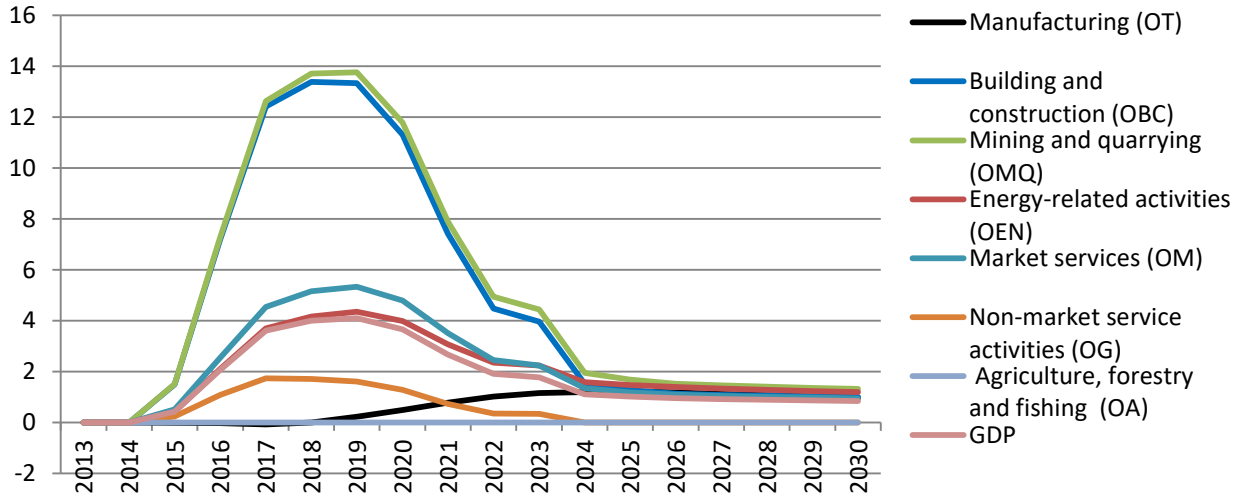
The boost to the market services sector is also apparent, even if it is smaller than that to building & construction. This sector tends to pick up the Keynesian or demand-side impacts of the CP as wages are

earned on CP activities in the BC and MQ sectors and spent on consumer goods and services. However, these impacts diminish after the CP programme terminates.

There is a minor boost to the non-market sector, due mainly to the implementation of training and education schemes through state agencies or with state supervision and control. Of course, these effects drop to zero after the CP programme terminates.

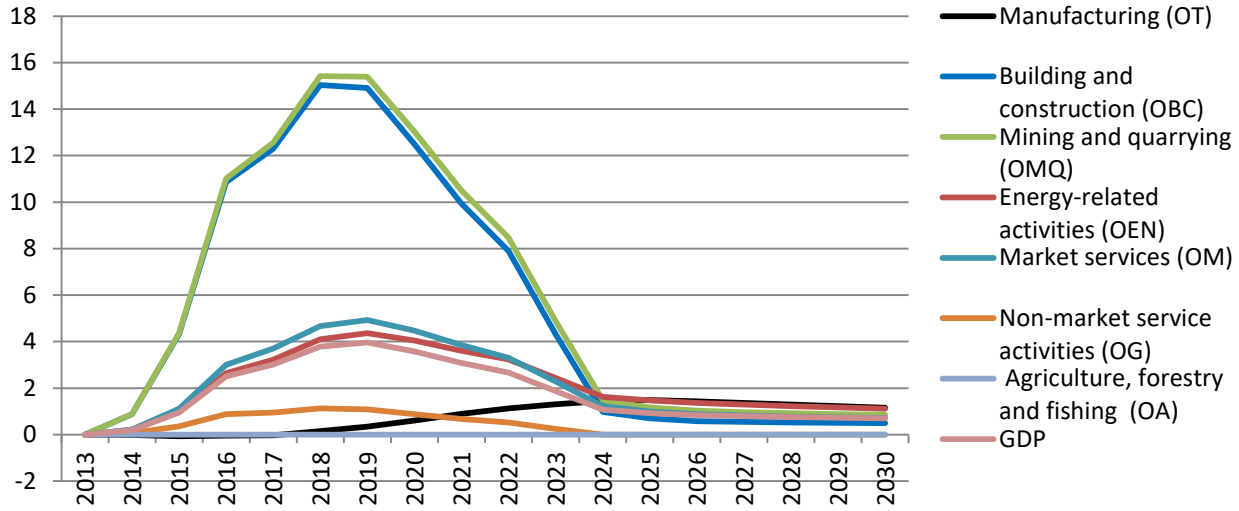
Although the impacts on the manufacturing sector are modest, they are the most relevant to longer-term growth and development. During the implementational stages of the CP programmes, i.e., 2014-2023, there is a small amount of 'crowding out' of manufacturing, since it is most exposed to international competitiveness. But as the spill-over effects kick in, there are longer term gains that endure after the programme terminates.

Figure 60. Estonia: CP impacts on the level of GDP by branches, percentage increase over the baseline level



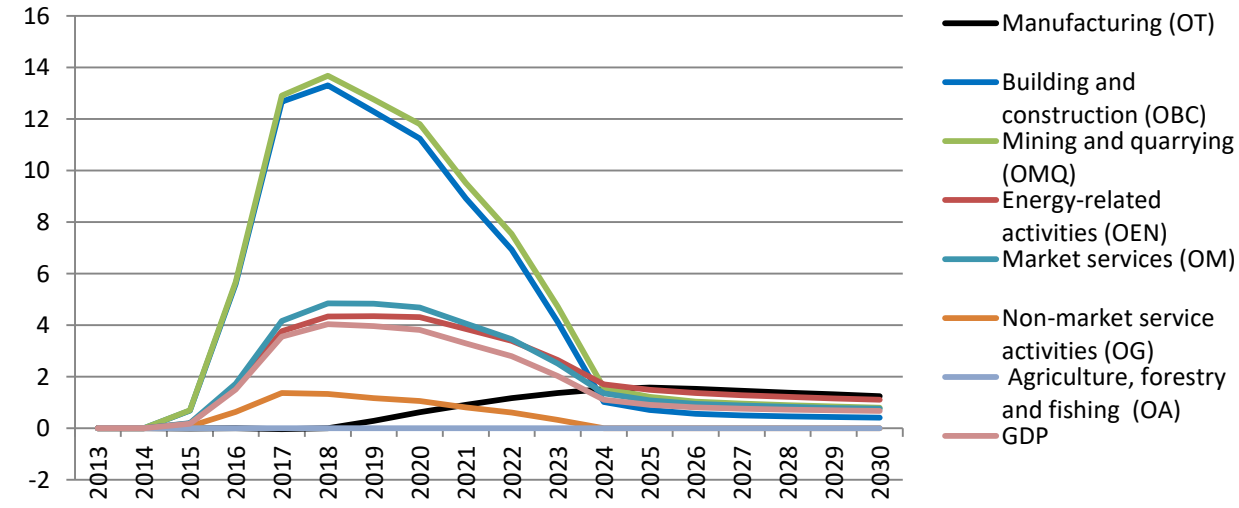
Source: project team analysis based on the HEE16 macro-sectoral model, 2016

Figure 61. Lithuania: CP impacts on the level of GDP by branches, percentage increase over the baseline level



Source: project team analysis based on the HLT16 macro-sectoral model, 2016

Figure 62. Latvia: CP impacts on the level of GDP by branches, percentage increase over the baseline level



Source: project team analysis based on the HLV16 macro-sectoral model, 2016

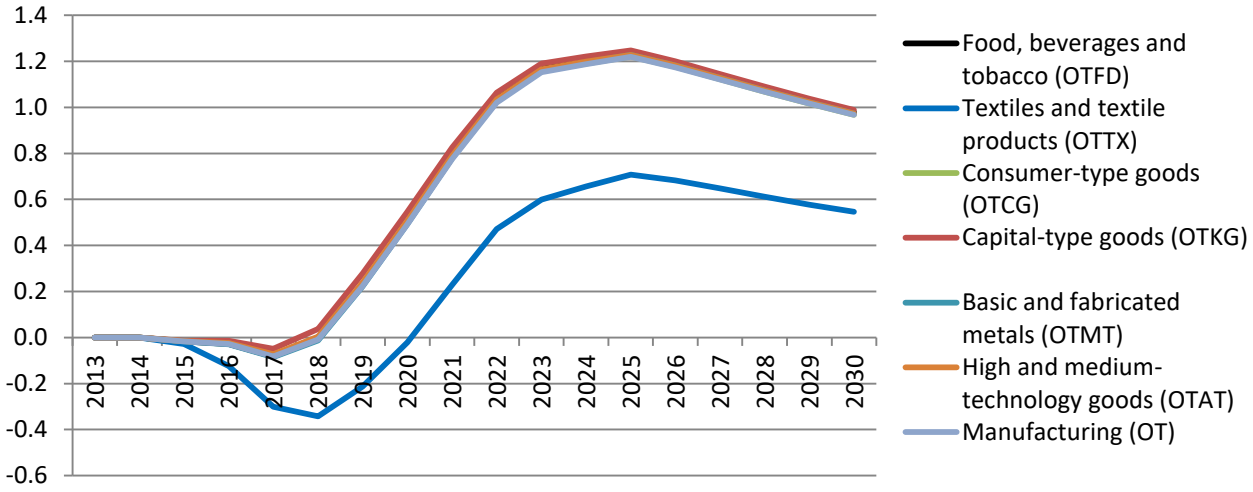
We turn now to the sub-branches of manufacturing. In small, open economies like the three **Baltic States**, manufacturing is usually very exposed to international trade and it is the health of the global economy that drives demand for its goods rather than domestic demand. In modelling the impacts of the CP programmes on the individual manufacturing sub-branches, we face a dilemma. Knowledge of the general nature of the sub-branches will influence how the spill-over mechanisms are likely to operate. For example, the Textiles sector (TX) usually faces systematic decline for its earlier dominance as labour-intensive activities switch to less developed, lower-cost economies, usually located outside the EU. So we anticipate that the CP investment will be likely to have at best weak impacts on the textile sub-branch. On the other hand, the High & Medium-technology goods plus computer services sub-branch (AT) is likely to benefit much more from improved physical infrastructure and training/education programmes.

Available research on the manner in which CP investments impact economies tends to focus on the nature of the different investment shocks rather than on the characteristics and requirements of the target economic branch or sub-branch that is affected by the investment shocks. For example, there is considerable knowledge on the different mechanisms associated with CP investments disaggregated into three broad categories: physical infrastructure, human capital, and R&D.[138]

Our allocation of values to the spillover elasticities was guided by detailed local knowledge of the branch structure of the three Baltic States' economies and how the branch structure is likely to respond to CP investment shocks. The most direct impacts were likely to be experienced by the manufacturing branch although not all sub-branches of manufacturing are likely to be affected in the same way. Thus, declining sub-branches like TTX (Textiles and Textile Products) were likely to be least affected, since investment activity in such sub-branches has been in serial decline. However, more advanced sub-branches such as TKG (Capital intensive goods) and TAT (High & medium-technology goods plus computer services) are likely to be most beneficially affected as these grow and make most demands on new physical infrastructure, skilled human resources, and R&D.

Our assignment of spillover elasticities took these factors into account. However, in view of the absence of country-specific research within the three Baltic State economies, and in the light of some broad similarities in terms of sectoral structure, performance, and stages of development, we applied the same spillover elasticities to corresponding manufacturing and other sub-branches in all three models.

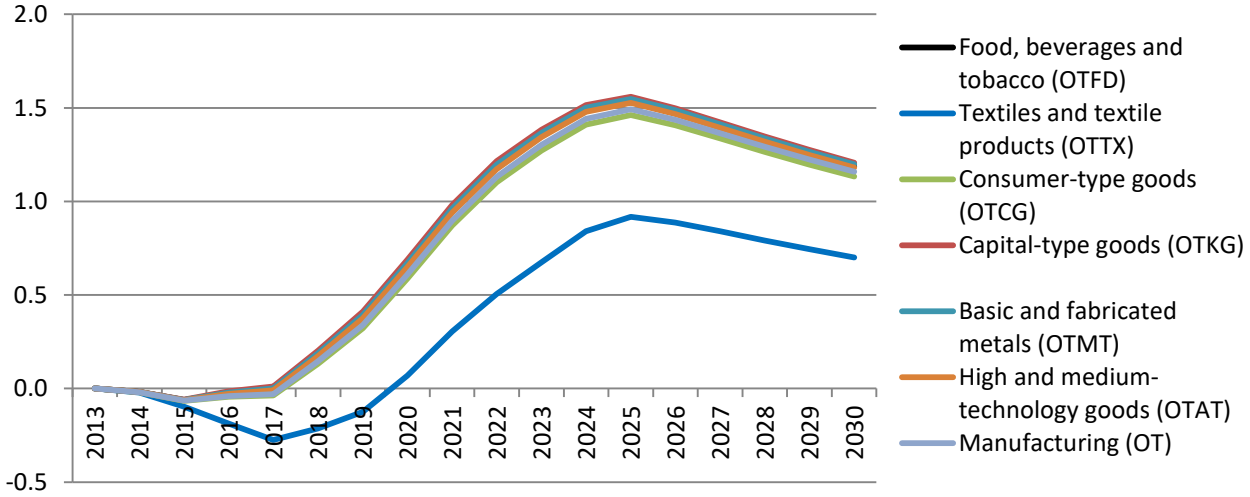
Figure 63. Estonia: CP impacts on the level of manufacturing GDP, percentage increase over the baseline level



Source: project team analysis based on the HEE16 macro-sectoral model, 2016

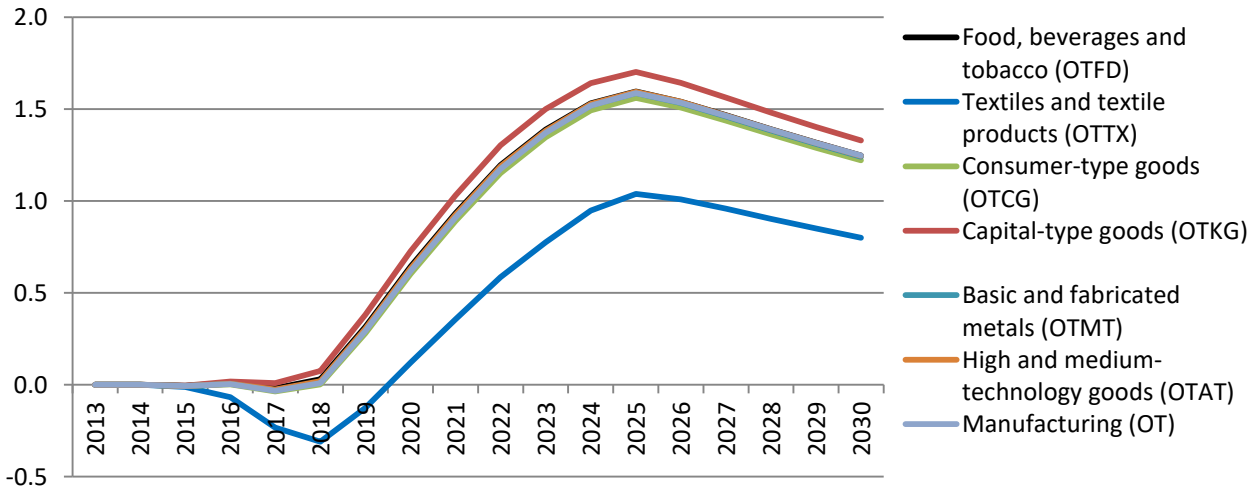
[138] Results in this area were summarised in a research report carried out for DG Regional Policy in 2011 (Tender No. 2009.CE.16.0.AT.013/2009.CE.16.CAT.010: Study on the "Identifying and Aggregating Elasticities for Spill-over Effects due to Linkages and Externalities in the Main Sectors of Investment Co-financed by the EU Cohesion Policy").

Figure 64. Lithuania: CP impacts on the level of manufacturing GDP, percentage increase over the baseline level



Source: project team analysis based on the HLT16 macro-sectoral model, 2016

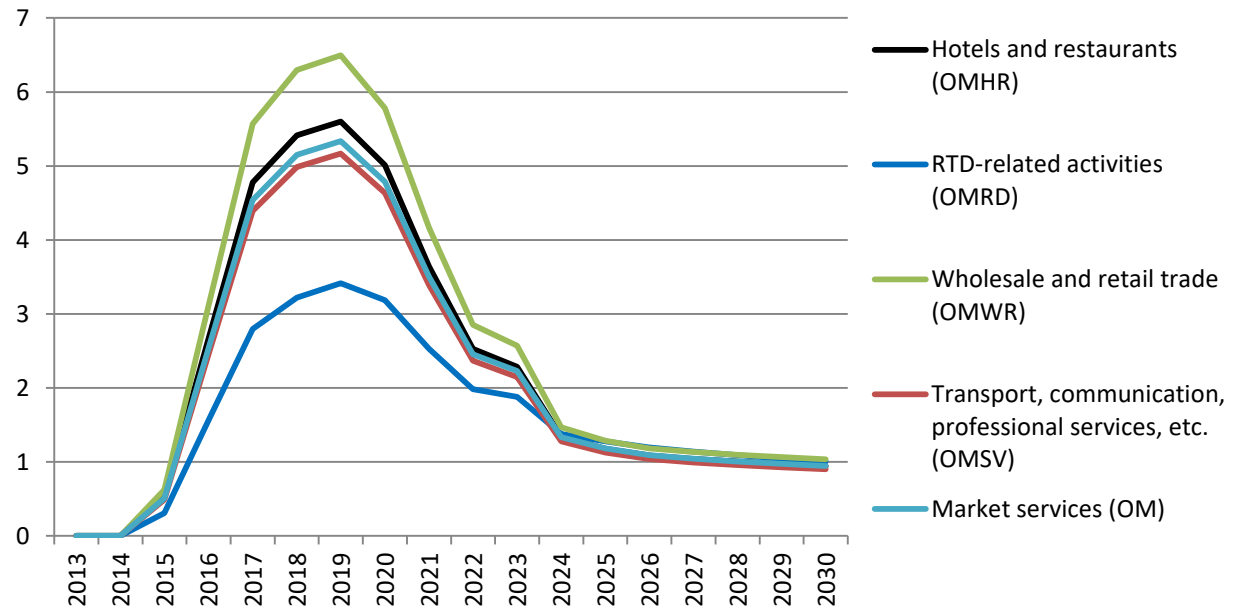
Figure 65. Latvia: CP impacts on the level of manufacturing GDP, percentage increase over the baseline level



Source: project team analysis based on the HLV16 macro-sectoral model, 2016

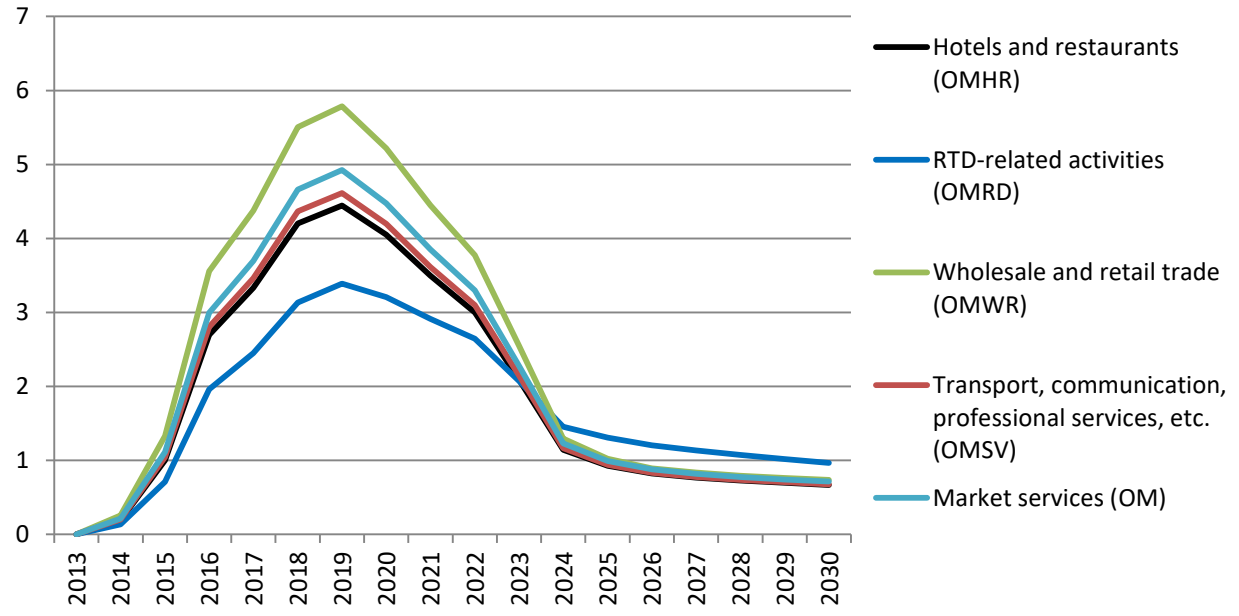
Similar challenges have to be faced when we examine the CP impacts on the four sub-branches of market services. In terms of their relative size, the dominant sub-branches are Wholesale & Retail Trade (WR) and Transport, Communication & Professional Services (SV). Both sub-branches pick up the Keynesian boost that the implementation of the CP programmes generates in the economy. Both sub-branches are assigned similar spill-over elasticities. Consequently, the impacts of the CP on the market services sub-branches follow a similar pattern, as shown in Figure 66, Figure 67 and Figure 68.

Figure 66. Estonia: CP impacts on the level of market services branches GDP, percentage increase over the baseline level



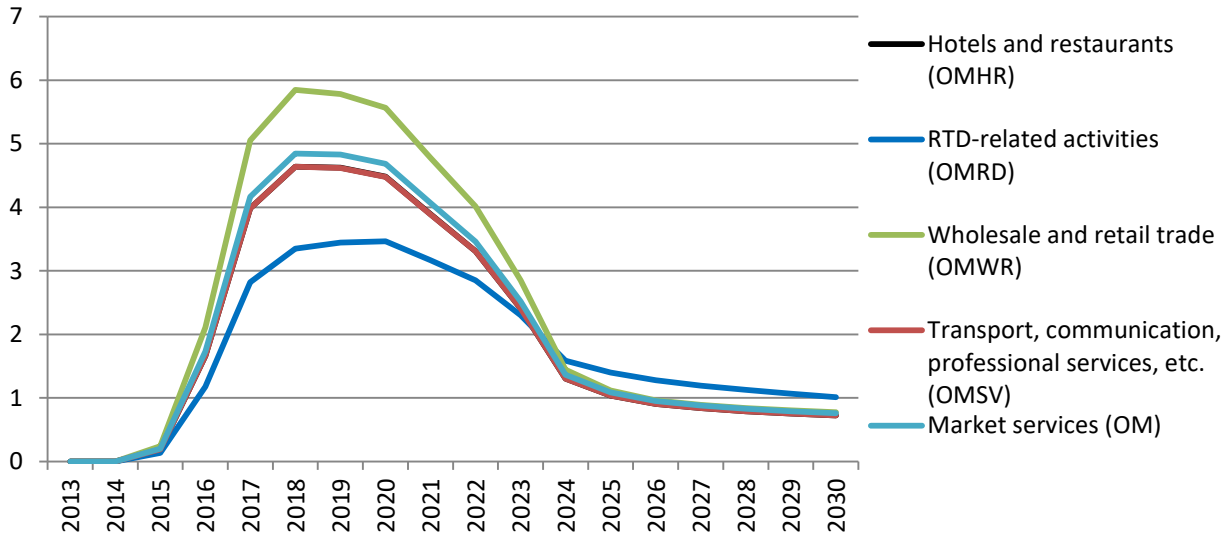
Source: project team analysis based on the HEE16 macro-sectoral model, 2016

Figure 67. Lithuania: CP impacts on the level of market services branches GDP, percentage increase over the baseline level



Source: project team analysis based on the HLT16 macro-sectoral model, 2016

Figure 68. Latvia: CP impacts on the level of market services branches GDP, percentage increase over the baseline level



Source: project team analysis based on the HLV16 macro-sectoral model, 2016

To conclude, CP programmes impacted both macroeconomic and production branch-related indicators. At the macroeconomic level such impacts may be represented by the "cumulative multiplier" (obtained by dividing the accumulated increase in GDP by the accumulated CP expenditure shares of GDP). Based on "cumulative multipliers", **Estonia** demonstrates the highest rate of return on the CP investments (2.51); **Latvia** has a slightly lower rate of return (2.27); and **Lithuania** is an intermediate case (2.33).

In terms of CP impacts on the level of GDP, the pattern is broadly similar for **all three countries**. For example, in the case of Estonia the annual percentage increase in GDP compared to the baseline level of GDP starts in 2015 at only 0.4 percent, rises steadily to a peak of 4.1 percent in 2019, declines thereafter, but is still up by 0.8 percent by 2030.

In terms of CP impacts on total employment numbers, this measure of CP impact is influenced by the size of the economy as well as by the effectiveness of the CP programmes within each country. The largest increase in total employment numbers occurs in Lithuania, where it peaks at just over 38 000 by 2019. Thereafter, the net increase declines to 12 340 by 2023 and to 3 540 in the first post-CP year, 2024. By 2030 the net increase is down to 2 140. It is important to note that one of the impacts of the CP investments is to boost labour productivity. This drives a productivity 'wedge' between the boost to GDP and the boost to employment.

The size of the impact the CP investments have on the production branches was examined. The importance of the building & construction branch in the CP programme is immediately apparent for all three countries and reflects the high share of investment in physical infrastructure. A similar pattern emerges in mining & quarrying, which feeds into building and construction. The boost to the market services sector is also apparent, even if it is smaller than the boost to building & construction. This sector tends to pick up the Keynesian or demand-side impacts of the CP as wages are earned on CP activities in building & construction and mining & quarrying sectors and spent on consumer goods and services. However, these impacts diminish after the OPs terminate.

Although the impacts on the Manufacturing sector are modest, they are the most relevant to longer-term growth and development. During the implementation stages of the CP programmes, i.e., 2014-2023, there is a small amount of 'crowding out' of manufacturing, since it is most exposed to international competitiveness. But as the spill-over effects kick in, there are longer term gains that endure after the OPs terminate.

4. ANNEXES

Annex 1. List of sectors/policy areas of the study

Fund	TO Cd	TO Description	IP Cd	IP Name	EE	LT	LV	Sectors / policy areas
ERDF	01	Strengthening research, technological development and ...	1a	enhancing research and innovation infrastructure ...	x	x	x	RTDI
ERDF	01	Strengthening research, technological development and ...	1b	promoting business RI investment, product and service ...	x	x	x	
ERDF	02	Enhancing access to and use and quality of information ...	2a	extending broadband deployment and the roll-out of ...	x	x	x	ICT
ERDF	02	Enhancing access to and use and quality of information ...	2b	developing ICT products and services, e-commerce and ...		x		
ERDF	02	Enhancing access to and use and quality of information ...	2c	strengthening ICT applications for e-government, ...	x	x	x	
ERDF	03	Enhancing the competitiveness of small and medium sized ...	3a	promoting entrepreneurship, in particular by facilitating...		x	x	SMEs
ERDF	03	Enhancing the competitiveness of small and medium sized ...	3b	developing new business models for SMEs, in particular ...		x		
ERDF	03	Enhancing the competitiveness of small and medium sized ...	3c	supporting the creation and the extension ...			x	
ERDF	03	Enhancing the competitiveness of small and medium sized ...	3d	supporting the capacity of SMEs ...	x	x	x	
ERDF	04	Supporting the shift towards a low-carbon economy in all ...	4b	promoting energy efficiency and renewable energy use in ...		x		Energy
ERDF	04	Supporting the shift towards a low-carbon economy in all ...	4c	supporting energy efficiency and renewable energy use in ...		x	x	
CF	04	Supporting the shift towards a low-carbon economy in all ...	4i	promoting the production and distribution of renewable ...		x	x	
CF	04	Supporting the shift towards a low-carbon economy in all ...	4ii	promoting energy efficiency and renewable energy use in ...			x	
CF	04	Supporting the shift towards a low-carbon economy in all ...	4iii	supporting energy efficiency and renewable energy use in ...	x	x		
CF	04	Supporting the shift towards a low-carbon economy in all ...	4iv	developing smart distribution systems at low voltage ...		x		
ERDF	07	Promoting sustainable transport and removing bottlenecks ...	7e	improving energy efficiency and security of ...		x		

ERDF	05	Promoting climate change adaptation and risk prevention	5a	supporting dedicated investment for adaptation to climate		x	x	Adaptation to climate change
CF	05	Promoting climate change adaptation and risk prevention	5i	supporting dedicated investment for adaptation to climate...		x		
CF	05	Promoting climate change adaptation and risk prevention	5ii	promoting investment to address specific risks, ensuring ...	x			
ERDF	06	Preserving and protecting the environment and promoting ...	6c	protecting, promoting and developing cultural heritage		x	x	Environment and resource efficiency
ERDF	06	Preserving and protecting the environment and promoting ...	6e	action to improve the urban environment, including ...			x	
CF	06	Preserving and protecting the environment and promoting ...	6i	addressing the significant needs for investment in the ...		x	x	
CF	06	Preserving and protecting the environment and promoting ...	6ii	addressing the significant needs for investment in the ...	x	x	x	
CF	06	Preserving and protecting the environment and promoting ...	6iii	protecting and restoring biodiversity, including through ...	x	x	x	
CF	06	Preserving and protecting the environment and promoting ...	6iv	improving the urban environment, including regeneration ...		x		
ERDF	04	Supporting the shift towards a low-carbon economy in all ...	4e	promoting low-carbon strategies for urban areas	x	x	x	Transport
CF	04	Supporting the shift towards a low-carbon economy in all ...	4v	promoting low-carbon strategies for urban areas		x	x	
ERDF	07	Promoting sustainable transport and removing bottlenecks ...	7b	enhancing regional mobility through connecting secondary ...		x	x	
CF	07	Promoting sustainable transport and removing bottlenecks ...	7i	supporting a multi-modal Single European Transport Area ...	x	x	x	
CF	07	Promoting sustainable transport and removing bottlenecks ...	7ii	developing environment-friendly and low-carbon transport ...	x			
CF	07	Promoting sustainable transport and removing bottlenecks ...	7iii	developing comprehensive, high quality and interoperable ...			x	
ERDF	08	Promoting sustainable and quality employment and ...	8b	supporting employment-friendly growth...	x	x		Employment
ERDF	08	Promoting sustainable and quality employment and ...	8d	investing in infrastructure for employment ...		x		
ESF	08	Promoting sustainable and quality employment and ...	8i	Access to employment for job-seekers and inactive people,...	x	x	x	
ESF	08	Promoting sustainable and quality employment and ...	8ii	Sustainable integration of young people not in employment...		x	x	

ESF	08	Promoting sustainable and quality employment and ...	8v	Adaptation of workers, enterprises and entrepreneurs to ...			x	
ERDF	09	Promoting social inclusion and combating poverty	9a	investing in health and social infrastructure which ...	v	v	v	Social inclusion
				SPO 1 - Increase the share of community-based social services through transition from institutional to community-based services		x		
				SPO 2 - Facilitate access to social housing for the most disadvantaged social groups		x		
				SPO 9.3.1. Developing the infrastructure of services for family like care of children and persons with disability for independent life and integration into the community			x	
				SPO 9.3 - Residents of larger urban areas are provided with nursery school and childcare options near home	x			
				SPO 2.5 - Welfare services which are more integrated and of higher-quality support the community living for people with special psychiatric needs and people with disabilities have better opportunities to cope in their home environment	x			
ERDF	09	Promoting social inclusion and combating poverty	9b	support for physical and economic regeneration of ...	x	x		
ESF	09	Promoting social inclusion and combating poverty	9i	Active inclusion	x	x	x	
ESF	09	Promoting social inclusion and combating poverty	9iv	Enhancing access to affordable, sustainable and ...	v	v	v	
				SPO 1 - Improve access to and quality of community-based services, develop services for families		x		
				SPO 9.2.1 - To increase the efficiency of social services, and the professional skills of employees and inter-institutional cooperation for work with persons in risk situation.			x	

				SPO 9.2.2 - To increase the availability of social services at home equivalent to the high-quality services of institutional care and availability of services close to family environment for children and people with disabilities.			x	
				SPO 2.1 - Increased labour market participation of custodians who have received childcare services and support services for children with disabilities	x			
				SPO 2.2 - Increased labour market participation or improved coping of people with special needs, care burden or coping difficulties who have received welfare services	x			
ESF	09	Promoting social inclusion and combating poverty	9v	Promoting the social economy and social enterprises		x		
ESF	09	Promoting social inclusion and combating poverty	9vi	Community-led local development strategies		x		
ERDF	09	Promoting social inclusion and combating poverty	9a	investing in health and social infrastructure which ...		v	v	Health
				SPO 3 - Improve health-care quality and accessibility for target groups and reduce health inequalities		x		
				SPO 9.3.2. - Improving access to quality health care, especially to population subject to the social and territorial exclusion and poverty risk, developing the health care infrastructure			x	
				SPO 2.4 - Regionally accessible, high-quality and sustainable healthcare services	x			
ESF	09	Promoting social inclusion and combating poverty	9iv	Enhancing access to affordable, sustainable and ...	v	v	v	
				SPO 2 - Reduce health inequalities by improving health-care quality and accessibility for target population groups and promoting healthy ageing		x		

				SPO 9.2.3. - To support the development and implementation of prior (cardiovascular, oncology, perinatal and neonatal period care and mental health care) health network development guidelines and quality assurance system, especially for improvement of health of people at risk of social exclusion and poverty			x	
				SPO 9.2.4.: To improve accessibility to health promotion and disease prevention services, especially to persons who are subject to the poverty and social exclusion risk.			x	
				SPO 9.2.5. - To improve accessibility to health care and health care support parsons who provide services in priority health sectors, to inhabitants outside Riga.			x	
				SPO 9.2.6. - To improve accessibility to qualified health care and health care support personnel.			x	
				SPO 2.3 - Reduced alcohol consumption by people who have received services	x			
ERDF	10	Investing in education, training and vocational training ...	10a	investing in education, skills and lifelong learning by ...	x	x	x	Education, skills and lifelong learning
ERDF	10	Investing in education, training and vocational training ...	10a	investing in education, skills and lifelong learning by ...		x		
ESF	10	Investing in education, training and vocational training ...	10i	Reducing early school-leaving and promoting equal access ...	x	x	x	
ESF	10	Investing in education, training and vocational training ...	10ii	Improving the quality, efficiency and openness of ...		x	x	
ESF	10	Investing in education, training and vocational training ...	10iii	Enhancing access to lifelong learning, upgrading the ...	x	x	x	
ESF	10	Investing in education, training and vocational training ...	10iv	Improving the labour market relevance of education ...			x	
ERDF	11	Enhancing institutional capacity of public authorities ...	11a	strengthening of institutional capacity and the ...	x			Institutional capacity of public authorities and administration
ESF	11	Enhancing institutional capacity of public authorities ...	11i	Investment in institutional capacity and in the ...	x	x	x	

Annex 2. Information sources in addition to the OPs for linking financial allocations to output and result indicators

Indicator type	Indicator passports	Justifications prepared on performance framework indicators	Tables prepared by Managing Authorities / Intermediate Bodies	The linkages between output and result indicators (deliverable within the project) and the opinion of sectoral experts
OI: use	Depending on the State, may contain values of financial allocations attributed to output indicators (OI's). If this is the case (for example as regards Latvia), this source may be used as a complementary source to Tables prepared by Managing Authorities / Intermediate Bodies.	Usually contain values of financing attributed to main (relevant to performance framework) OI's. Thus, this may be seen as a complementary source.	Usually such tables contain a list of support measures within each Specific Objective and a number OIs each measure contributes. Depending on the State, each OI may have a financial value already allocated (as for example, with some exceptions, Estonia). In other cases (like Latvia), two tables have to be cross-tabulated: one containing the distribution of funding between measures, and another containing output and result indicators attributed to each measure. In some instances (e.g. Lithuania) no aggregated tables exist, thus tables prepared for each measure have to be used. Summarising, this source may be seen as the main source.	N/a
OI: limitations	Depending on State, may not contain values of financing attributed to OI's or may contain values only for some OI's. Lithuania is an example here, e.g. no information about possible financial allocation for indicator "Households whose territories are covered with broadband access (of at least 30Mbps) during the projects". Furthermore, indicator passports may not reflect the latest amendments, thus financial allocation	Cover only part (usually – the smaller part) of OI's. E.g. in the case of Lithuania it does not cover the indicator "Households whose territories are covered with broadband access (of at least 30Mbps) during the projects".	In numerous cases a support measure has two or more OI, and, depending on the State, the table may not provide information on the financial distribution among OI's (e.g. the Estonian table in some instances does not provide such financial distribution information). Not all support measures may be approved and thus included into the table,	N/a

	may be inaccurate (as was revealed by some validation exercises).		therefore, financial amounts may be not allocated to certain OI's. In such cases draft descriptions of measures may be used to plug the gaps (if available).	
RI: use	None, as they do not contain information on possible financial allocation to RI's.	None, as does not contain information on possible financial allocation to RI's.	As a general rule, such tables do not contain information on possible financial allocation to RI's.	Linkages assessments help to identify which outputs contribute to certain results and their level of contribution. This may help to attribute the financial amounts of OI's to the relevant RI's.
RI: limitations	See above.	See above.	See above.	Some OI's may contribute to more than one RI's. Thus, expert opinion may be required to finalise the attribution of financial amounts to the RI's.

Source: Project team, based on information provided in sources cited, 2016

Annex 3. Government expenditure attribution to sectors/policy areas

http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4	RTDI	ICT	SMEs	Energy	Adaptation to climate change	Environment and resource efficiency	Transport	Employment	Social inclusion	Health	Education, skills and lifelong learning	Institutional capacity of public authorities and administration	None
COFOG99/TIME													
TOTAL - Total													
GF01 - General public services													
GF0101 - Executive and legislative organs, financial and fiscal affairs, external affairs													1.00
GF0102 - Foreign economic aid													1.00
GF0103 - General services		0.15											1.00
GF0104 - Basic research	0.90	0.10											
GF0105 - R&D General public services	0.90	0.10											
GF0106 - General public services n.e.c.												1.00	
GF0107 - Public debt transactions													1.00
GF0108 - Transfers of a general character between different levels of government													1.00
GF02 - Defence													
GF0201 - Military defence													1.00
GF0202 - Civil defence													1.00
GF0203 - Foreign military aid													1.00
GF0204 - R&D Defence	0.90	0.10											
GF0205 - Defence n.e.c.												0.10	0.90
GF03 - Public order and safety													
GF0301 - Police services													1.00
GF0302 - Fire-protection services					0.10								0.90
GF0303 - Law courts												0.10	0.90

http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4	RTDI	ICT	SMEs	Energy	Adaptation to climate change	Environment and resource efficiency	Transport	Employment	Social inclusion	Health	Education, skills and lifelong learning	Institutional capacity of public authorities and administration	None
GF0304 - Prisons									0.33				0.67
GF0305 - R&D Public order and safety	0.90	0.10											
GF0306 - Public order and safety n.e.c.												0.10	0.90
GF04 - Economic affairs													
GF0401 - General economic, commercial and labour affairs			1.00										
GF0402 - Agriculture, forestry, fishing and hunting													1.00
GF0403 - Fuel and energy				1.00									
GF0404 - Mining, manufacturing and construction				0.33									0.67
GF0405 - Transport							1.00						
GF0406 - Communication		1.00											
GF0407 - Other industries			0.50										0.50
GF0408 - R&D Economic affairs	0.90	0.10											
GF0409 - Economic affairs n.e.c.			0.45					0.45				0.10	
GF05 - Environment protection													
GF0501 - Waste management						1.00							
GF0502 - Waste water management						1.00							
GF0503 - Pollution abatement						1.00							
GF0504 - Protection of biodiversity and landscape					0.50	0.50							
GF0505 - R&D Environmental protection	0.90	0.10											
GF0506 - Environmental protection n.e.c.					0.45	0.45						0.10	
GF06 - Housing and community amenities													
GF0601 - Housing development									1.00				

http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4	RTDI	ICT	SMEs	Energy	Adaptation to climate change	Environment and resource efficiency	Transport	Employment	Social inclusion	Health	Education, skills and lifelong learning	Institutional capacity of public authorities and administration	None
GF0602 - Community development									1.00				
GF0603 - Water supply						1.00							
GF0604 - Street lighting				1.00									
GF0605 - R&D Housing and community amenities	0.90	0.10											
GF0606 - Housing and community amenities n.e.c.									0.90			0.10	
GF07 - Health													
GF0701 - Medical products, appliances and equipment										1.00			
GF0702 - Outpatient services										1.00			
GF0703 - Hospital services										1.00			
GF0704 - Public health services										1.00			
GF0705 - R&D Health	0.90	0.10											
GF0706 - Health n.e.c.										0.90		0.10	
GF08 - Recreation, culture and religion													
GF0801 - Recreational and sporting services										1.00			
GF0802 - Cultural services						1.00							
GF0803 - Broadcasting and publishing services													1.00
GF0804 - Religious and other community services									1.00				
GF0805 - R&D Recreation, culture and religion	0.90	0.10											
GF0806 - Recreation, culture and religion n.e.c.									0.45	0.45		0.10	
GF09 - Education													

http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4	RTDI	ICT	SMEs	Energy	Adaptation to climate change	Environment and resource efficiency	Transport	Employment	Social inclusion	Health	Education, skills and lifelong learning	Institutional capacity of public authorities and administration	None
GF0901 - Pre-primary and primary education											1.00		
GF0902 - Secondary education											1.00		
GF0903 - Post-secondary non-tertiary education											1.00		
GF0904 - Tertiary education											1.00		
GF0905 - Education not definable by level											1.00		
GF0906 - Subsidiary services to education											1.00		
GF0907 - R&D Education	0.90	0.10											
GF0908 - Education n.e.c.											0.90	0.10	
GF10 - Social protection													
GF1001 - Sickness and disability									1.00				
GF1002 - Old age									1.00				
GF1003 - Survivors									1.00				
GF1004 - Family and children									1.00				
GF1005 - Unemployment								0.75	0.25				
GF1006 - Housing									1.00				
GF1007 - Social exclusion n.e.c.									1.00				
GF1008 - R&D Social protection	0.90	0.10											
GF1009 - Social protection n.e.c.									0.90			0.10	

Annex 4. National budgetary allocations

National budgetary allocations (from all sources, including EU funding) per sector/policy area (forecast for 2014-2020)

Sector	Million euro (annual average)			Million euro (7 years cycle)		
	EE	LT	LV	EE	LT	LV
RTDI	251,8	276,7	88,8	1 762,5	1 937,1	621,4
ICT	53,6	103,6	29,6	375,2	725,2	207,5
SMEs	142,5	135,0	326,1	997,7	945,3	2 282,9
Energy	558	1745	888	3907	1 2214	6213
Adaptation to climate change	486	424	182	3401	2967	1271
Environment and resource efficiency	3627	5423	4730	2 5387	3 7961	3 3111
Transport	6250	6695	7844	4 3748	4 6862	5 4910
Employment	1973	1958	1240	1 3813	1 3707	8678
Social inclusion	2 6765	4 8028	2 8533	18 7352	33 6195	19 9733
Health	1 2129	2 3353	1 0704	8 4900	16 3469	7 4926
Education, skills and lifelong learning	1 3927	2 1162	1 4460	9 7489	14 8134	10 1219
Institutional capacity of public authorities and administration	400	1319	587	2800	9236	4109
Other sectors / policy areas	1 7881	3 5249	2 0135	12 5170	24 6740	14 0942
Total	8 8303	15 0256	9 3646	61 8122	105 1789	65 5521

Source: Project team estimations based on Eurostat data, 2016.

Annex 5. Sixteen production branches – Based on NACE Rev. 2 data

[A] Agriculture, forestry and fishing
A01 Crop and animal production, hunting and related service activities
A02 Forestry and logging
A03 Fishing and aquaculture

[T] Manufacturing

[FD] Food, beverages and tobacco
C10_TO_C12 Manufacture of food products, beverages and tobacco

[TX] textiles and textile products
C13_TO_C15 Manufacture of textiles, wearing apparel, leather and related products

[CG] Consumer-type goods
C16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
C17 Manufacture of paper and paper products
C18 Printing and reproduction of recorded media
J58 Publishing activities
C31_C32 Manufacture of furniture; other manufacturing

[KG] Capital-type goods
C19 Manufacture of coke and refined petroleum products
C22 Manufacture of rubber and plastic products
C23 Manufacture of other non-metallic mineral products

[MT] Basic and fabricated metals
C24 Manufacture of basic metals
C25 Manufacture of fabricated metal products, except machinery and equipment

[AT] High and medium-technology goods
C20 Manufacture of chemicals and chemical products
C21 Manufacture of basic pharmaceutical products and pharmaceutical preparations
C26 Manufacture of computer, electronic and optical products
C27 Manufacture of electrical equipment
C28 Manufacture of machinery and equipment n.e.c.
C29 Manufacture of motor vehicles, trailers and semi-trailers
C30 Manufacture of other transport equipment
J62_J63 IT services: computer programming, consultancy etc. information service activities
C33 Repair and installation of machinery and equipment

[BC] Building and construction
F Construction

[MQ] Mining and quarrying
B Mining and quarrying

[EN] Energy-related activities
D Electricity, gas, steam and air conditioning supply

M] Market services

[HR] Hotels and restaurants
I Accommodation and food service activities

[RD] RTD-related activities
M72 Scientific research and development
P Education

[WR] Wholesale and retail trade
G45 Wholesale and retail trade and repair of motor vehicles and motorcycles
G46 Wholesale trade, except of motor vehicles and motorcycles
G47 Retail trade, except of motor vehicles and motorcycles
S95 Repair of computers and personal and household goods

[SV] Transport, communication, professional services, etc.
H49 Land transport and transport via pipelines
H50 Water transport
H51 Air transport
H52 Warehousing and support activities for transportation
H53 Postal and courier activities
J59_J60 Motion picture, video, television programme production; programming and broadcasting activities
J61 Telecommunications
K64 Financial service activities, except insurance and pension funding
K65 Insurance, reinsurance and pension funding, except compulsory social security
K66 Activities auxiliary to financial services and insurance activities
L Real estate activities
M69_M70 Legal and accounting activities; activities of head offices; management consultancy activities
M71 Architectural and engineering activities; technical testing and analysis
M73 Advertising and market research
M74_M75 Design, photographic and translation activities; veterinary activities
N77 Rental and leasing activities
N78 Employment activities
N79 Travel agency, tour operator reservation service and related activities
N80_TO_N82 Security and investigation activities; services to buildings and landscape activities; office administrative, office support and other business support activities

[G] Non-market service activities
O Public administration and defence; compulsory social security
Q86 Human health activities
Q87_Q88 Residential care activities; social work activities without accommodation
E36 Water collection, treatment and supply
E37_TO_E39 Sewerage, waste management, remediation activities

[OE] Other economic activity
R90_TO_R92 Creative, arts and entertainment activities; libraries, archives, museums and other cultural activities; gambling and betting activities
R93 Sports activities and amusement and recreation activities
S94 Activities of membership organisations
S96 Other personal service activities
T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use

Source: Project team, 2016

Annex 6. Modelling CP impacts on context indicators

The macroeconomic model of each Baltic State was supplemented with satellite equations allowing for additional modelling of the impact of CP interventions on most of the context indicators. 16 context indicators were included in the model via satellite equations.

In some cases, these context indicators are very closely related to macroeconomic variables that are contained in the models being used for the evaluation. For example, LPRODH (real labour productivity per hour worked (ESA2010)) is closely related to the model variable LPROD (annual economy-wide labour productivity). And EMPRED (Employment rate (15-64 years of at least upper secondary education) is closely related to the model variables L/NWORK (the overall rate of employment).

However, in most cases the indicators were related to proxy model variables that were likely to be useful predictors of movements in the indicators.

For each context indicator the following information is presented: the satellite equation used in the model to predict future movements in the indicator in question, a summary table showing the calibrated elasticities in the equation for all three models.

GERD: Gross domestic expenditure on R&D, % of GDP

Satellite equation: log(GERD)=AGERD1+AGERD2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
GERD	1.86	0.60	0.85

BERD: Business enterprise R&D expenditure, % of GDP

Satellite equation: log(BERD)=ABERD1+ABERD2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
BERD	3.04	0.98	0.38

LPRODH: Real labour productivity per hour worked (ESA2010)

Satellite equation: log(LPRODH)=ALPRODH1+ALPRODH2*log(LPROD);

Elasticities:

	Estonia	Lithuania	Latvia
LPRODH	1.19	0.97	1.38

XWGSP: Exports of goods and services (as % of GDP)

Satellite equation: XWGSP=100*(OT+OM)**AXWGSP2/GDPFC;

Elasticities:

	Estonia	Lithuania	Latvia
XWGSP	0.96	0.99	0.96

TOTENIN: Total final energy intensity

Satellite equation: log(TOTENIN)=ATOTENIN1+ATOTENIN2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
TOTENIN	-0.63	-0.45	-0.58

SHREN: Share of energy from renewable sources

Satellite equation: log(SHREN)=ASHREN1+ASHREN2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
SHREN	0.44	0.35	0.05

GHGINT: GHG emissions intensity of energy consumption

Satellite equation: log(GHGINT)=AGHGINT1+AGHGINT2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
GHGINT	-0.09	-0.17	-0.10

EMP2064: Total employment rate

Satellite equation: log(EMP2064)=AEMP20641+AEMP20642*log(L/NWORK);

Elasticities:

	Estonia	Lithuania	Latvia
EMP2064	0.89	0.92	0.98

NEM1524: % of age 15-24 neither in employment nor education & training

Satellite equation: log(NEM1524)=ANEM15241+ANEM15242*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
NEM1524	-0.55	-0.57	-0.14

SHRRISK: Persons at-risk-of-poverty or social exclusion

Satellite equation: log(SHRRISK)=ASHRRISK1+ASHRRISK2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
SHRRISK	-0.30	-0.58	-0.52

MORTRATE: Standardised rate of mortality - All causes of death

Satellite equation: log(MORTRATE)=AMORTRATE1+AMORTRATE2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
MORTRATE	-0.60	-0.14	-0.26

HEALTHF: Healthy life years [females]

Satellite equation: log(HEALTHF)=AHEALTHF1+AHEALTHF2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
HEALTHF	0.12	0.21	0.07

HEALTHM: Healthy life years [males]

Satellite equation: log(HEALTHM)=AHEALTHM1+AHEALTHM2*log(GDPM/N);

Elasticities:

	Estonia	Lithuania	Latvia
HEALTHM	0.12	0.16	0.05

LFLNGLRN: Lifelong learning

Satellite equation: log(LFLNGLRN)=ALFLNGLRN1+ALFLNGLRN2*log(LPROD);

Elasticities:

	Estonia	Lithuania	Latvia
LFLNGLRN	1.85	0.85	0.39

EDU2024: At least upper secondary educational attainment, age group 20–24

Satellite equation: log(EDU2024)=AEDU20241+AEDU20242*log(LPROD);

Elasticities:

	Estonia	Lithuania	Latvia
EDU2024	0.10	0.20	0.24

EMPRED: Employment rate (15-64 years of at least upper secondary education)

Satellite equation: log(EMPRED)=AEMPRED1+AEMPRED2*log(L/NWORK);

Elasticities:

	Estonia	Lithuania	Latvia
EMPRED	0.75	0.67	0.92

Annex 7. The Baseline projection for 2015-2030

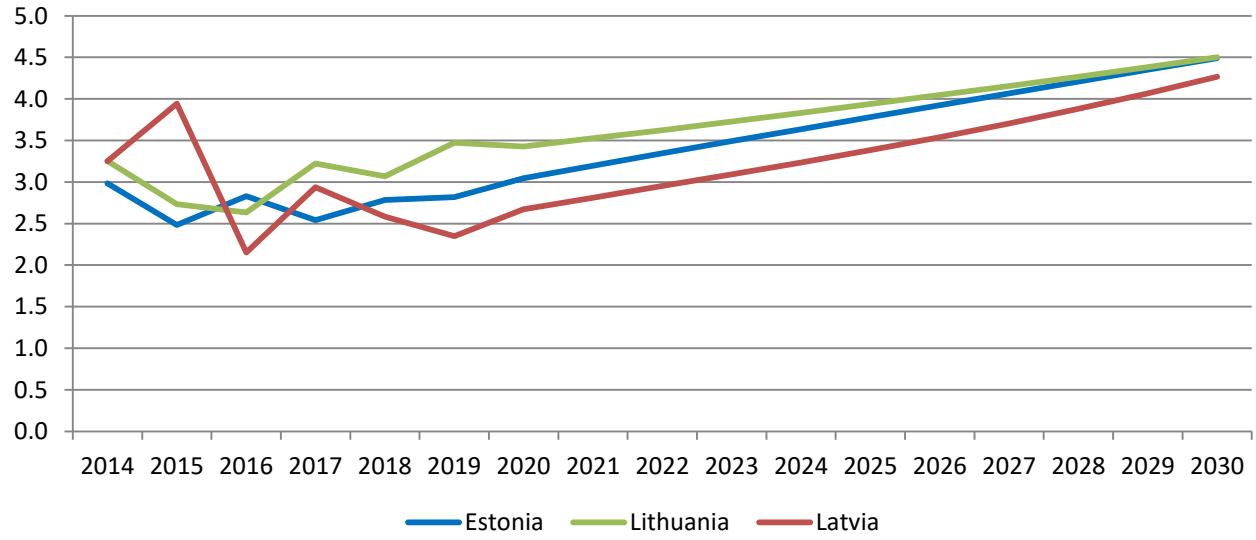
In preparing the baseline projection out to 2030, three phases were considered. First, the immediate past (2015) for which complete national accounting data are lacking but reasonably good preliminary data and 'forecasts' are available. Second, the medium term, i.e., 2016 to 2018, for which some forecasts, and reasonably good international projections from the EC, the IMF and the OECD are available. Finally, the long term, i.e., 2019-2030, for which little or no guidance is available.

For the immediate past, it was kept close to available data. For the medium term, account of available forecasts was taken. For the long term, international economic and domestic policy assumptions were made that generated a baseline pattern of growth that was consistent with the general pattern of gradually improving development in the Baltic States.

The baseline projection for GDP growth prepared using the new models is further presented. This was used to generate the baseline 'no-CP' scenario for the impact evaluation. Currently, the historical data sample extends from the year 2000 to the terminal year 2014. Assumptions made for the exogenous variables in the forecast include a gradual recovery in the global economy and continued restraint on domestic public finances in the Baltic States.

Figure 69 shows the forecast for aggregate GDP growth, in constant base-year prices. On the basis of current views of global economic recovery, the Lithuanian growth rate of GDP benefits from the slow recovery in the EU and continues to grow at between 3.5 and 4.5 percent out to 2030. These are high growth rates compared to the more developed and 'mature' EU member state economies, and higher than the rates envisaged for the older, peripheral economies like Portugal, Spain and Greece. Nevertheless, it would still leave the three Baltic States below the average level of GDP per head by 2020 (the terminal year for the current EU budget planning), even if considerable progress is likely to be made in convergence terms.

Figure 69. Baseline projections of GDP growth: 2014-2030



Source: project team analysis based on the HLT16, HEE16 and HLV16 macro-sectoral models, 2016

The baseline forecast derived using the new models is broadly consistent with other available forecasts for the Baltic States' economies for the near future (years 2016 and 2017). Beyond that the projections are conjectural, but in keeping with evolving knowledge on the Baltic States' economic recovery.

Annex 8. How CP impacts are handled in the models

Over the past three decades there has been renewed interest in the drivers of economic growth and development. The focus of much of this work has been to model more explicitly the factors which impact on a country's growth rate, either in the short run or the long run. This approach stands in contrast to earlier growth models which explained economic growth simply through exogenous technical progress, the sources of which were not specifically modelled (see Solow, 1956)[139]. In these earlier models, growth was essentially exogenously driven, with policy measures changing the transition path but not the long-run steady state growth rates of an economy. These models also predicted convergence among economies which, due to diminishing returns to factors of production, would arise if countries have similar rates of technical progress.

"Endogenous" growth theory has addressed these shortcomings[140]. In particular this literature has focused on the role of spillovers or externalities which arise from particular investments, for example, in infrastructure, human capital, and R&D. These externalities generate additional unintended benefits to the productive capacity of an economy. More specifically, this literature has investigated how technical progress can be affected directly through investments in research and development (R&D). Here, externalities can also arise when innovations in one firm are adopted by other firms, i.e. when such innovations have public good qualities. In contrast to the 'exogenous' growth models, convergence is not automatic in "endogenous" growth models. Absent the "drivers" of growth, the economy can stagnate or fall further behind more dynamic economies where such growth "drivers" operate more effectively.

These theoretical advances have also led to the creation of an extensive empirical literature which investigates the growth effects which have been put forward. As such, an extensive literature now exists on the effect of infrastructure on growth, while that on the impacts of human capital and R&D on growth is less extensive. The empirical results remain somewhat mixed, so it is not yet possible to give precise estimates of these effects.

Modelling the CP programme intervention

In its simplest form, the CP data, as negotiated by the recipient country with the EC, consists of time series for the total Community (EC) funding allocation to each recipient state, usually expressed in millions of current euro. In each model, the notation for these basic data is GECSFEC, and for the budgetary programme period 2014-2020 they are given for the years 2014-2023 inclusive[141].

As part of the negotiations with the European Commission, a domestic co-finance ratio can be agreed. This percentage is designated as RDCOFIN in the formulae below. The total EC and domestic public (EC+DP) expenditure is then split between three main economic categories using the national shares implicit in the detailed sectoral and regional Operational Programmes contained in the national cohesion policy document. These economic categories are physical infrastructure, human resources, and direct aid to the productive sectors. Note that in the present impact evaluation, only the EC CP contribution is analysed.

The further allocation of the direct aid to productive sectors is then carried out using assumed shares (as between manufacturing and market service branches, since it is assumed that no funds will be devoted to agriculture).

The EC total expenditure contribution for each of the years 2014 to 2023 in current euro is input as a datum (GECSFEC). The implied domestic public (DP) co-finance contribution (GECSFDP) is derived using an assumed domestic co-financing ratio (RDCOFIN, the per cent of the total of EC and domestic public finance

[139] Robert Solow (1956): "A Contribution to the theory of economic growth", QJE, Vol. 70, pp. 65-94.
[140] Paul Romer (1990): "Endogenous Technical Change", JPE, Vol 98, pp. S71-S102
[141] The programme expenditures are planned to continue after the year 2020 (under the so-called "n+3" rule).

that is the domestic co-financing). RDCOFIN is defined by us as follows[142]. If GECSFEC is the EU funding contribution and GECSFDP is the domestic public co-financing contribution, then:

RDPCOFIN=100*GECSFDP/(GECSFEC+GECSFDP)

In the model we take the domestic public co-financing ratio (RDPCOFIN) as a datum and transform the above definition to define the level of domestic co-funding, given a specified level of EU funding, i.e., we solve the above equation for GECSFDP:

GECSFDP = (RDPCOFIN/(100-RDPCOFIN)) * GECSFEC

The implied domestic private (PR) co-financing contribution (GECSFPR), is similarly derived using an assumed domestic private co-financing ratio (RPRCOFIN percent), defined as follows. Total EC plus DP financing is taken as the base for calculating the domestic private co-financing ratio.

RPRCOFIN=100*GECSFPR/(GECSFEC+GECSFDP)

In the model we solve the above equation for the level of domestic private co-financing (GECSFPR):

GECSFPR = (RPRCOFIN/100) * (GECSFEC+GECSFDP)

Total (EC+DP+PR) expenditure (GECSF) is then defined as:143

GECSF = GECSFEC + GECSFDP + GECSFPR

This total (GECSF) can then be disaggregated into three main economic categories.

(a) Physical infrastructure (IGVCSFXX)

(b) Human Resources (GTRSFXX), and

(c) Direct Aid to the Productive Sector (TRIXX),

where XX=EC (Community), DP (Domestic Public) and PR (Domestic Private) contribution. The percentage share going to physical infrastructure is RIGVCSF; the share going to human resources is RGTRSF. The residual goes to direct aid to the productive sector.

Physical infrastructure (PI):

[142] We use the term "domestic public co-finance ratio" (RDPCOFIN) strictly according to the definition used above. It should not be confused with other, administrative definitions of the ratio.

[143] We emphasise once again that in the present impact evaluation, the domestic public and private co-finance is not included in the analysis, i.e., is set to zero.

The amounts being spent to fund investment in physical infrastructure are as follows:

IGVCSFEC = (RIGVCSFE/100) * GECSFEC

What this equation does in the model is allocate portions of total cohesion policy expenditure (GECSF) to investment expenditures on physical infrastructure.

Human resources (HR):

The amounts being spent to fund investment in human resource activities are as follows:

GTRSFEC = (RGTRSFE/100) * GECSFEC

What this equation does in the model is allocate portions of total cohesion policy expenditure (GECSF) to investment expenditures on human resources.

Direct aid to the productive sectors (APS, residual):

The amounts being spent on activities to aid the productive sectors are determined residually as follows:

TRIEC = GECSFEC - (IGVCSFEC+GTRSFEC)

Direct aid to the productive sectors (TRIEC) is disaggregated into its three main sectoral allocations (i.e., manufacturing (T), and its six sub-branches; market services (M), and its four sub-branches; building and construction (BC); mining and quarrying (MQ); and energy-related (EN).

Manufacturing (percentage share = RTRITZZ):

TRITZZ = (RTRITZZ/100) * TRIEC

where ZZ designates the six manufacturing sub-branches (FD, TX, CG, KG, MT and AT). What these equations do in the model is allocate portions of cohesion policy expenditure on aid to the productive sectors (TRITXX) to aid expenditures on manufacturing.

Market Services (percentage share = RTRIMZZ):

TRIMZZ = (RTRIMZZ/100) * TRIEC

where ZZ designates the four market services sub-branches (HR, RD, WR and SV). What these equations do in the model is allocate portions of cohesion policy expenditure on aid to the productive sectors (TRIXX) to aid expenditures on market services.

Similar branch allocations are made to building and construction (TRIBC); mining and quarrying (TRIMQ); and energy-related activities (TRIEN):

$$TRIBC = (RTRIBC/100) * TRI$$

$$TRIMQ = (RTRIMQ/100) * TRI$$

$$TRIEN = (RTRIEN/100) * TRI$$

We further disaggregate total aid to the productive sectors (APS) into two main economic categories; R&D and other direct aid. The percentage share of total APS funding (TRI) going to R&D is defined as RRDTCSF, defined as:

$$RRDTCSF = 100*(TRIRD/TRI)$$

In the model, the above equation is used to determine TRIRD, given values for RRDTCSF and TRI:

$$TRIRD = (RRDTCSF/100) * TRI;$$

The accumulation of the constant price version of these funds directed at R&D activities (TRIRD) can be used in the model to derive a measure of a "stock" of R&D (KRTRIRD), and is explained below.

CP physical infrastructure impact analysis

The models assume that any CP expenditure on physical infrastructure that is directly financed by EC aid subvention (IGVCSFEC) can be matched by a domestically financed public expenditure (IGVCSFDP) and a domestic privately financed component (IGVCSFPR)[144]. Hence, the total public and private CP infrastructure expenditure (IGVCSF) is defined in the model as follows (in current prices):

$$IGVCSF = IGVCSFEC + IGVCSFDP + IGVCSFPR$$

Inside the models these CP policy-related expenditures are converted to real terms (by deflating the nominal expenditures by the investment price) and are then added to any existing (non-cohesion policy) real public infrastructure investment, determining total real investment in infrastructure (IGINF). Using the perpetual inventory approach, these investments are accumulated into a notional 'stock' of infrastructure (KGINF):

[144] Only the EC element is included in this impact evaluation.

$$KGINF = IGINF + (1-0.02) * KGINF(-1)$$

where a 2 per cent rate of stock depreciation is assumed. This accumulated stock is divided by the (exogenous) baseline non-CP policy stock (KGINF0) to give the cohesion policy-related relative improvement in the stock of infrastructure (KGINFR):

$$KGINFR = KGINF / KGINF0$$

It is this ratio that enters into the calculation of any spillovers (or externalities) associated with improved infrastructure.

As regards the public finance implications of cohesion policy, the total cost of the increased public expenditure on infrastructure (IGVCSF - IGVCSFPR) is added to the domestic public sector capital expenditure (GK). Any increase in the domestic public sector deficit (GBOR) is limited by the extent of EC cohesion policy-related aid subventions (IGVCSFEC), since such investment expenditures are provided by the EC and are not a cost on the local exchequer. Whether or not the post-cohesion policy public sector deficit rises or falls relative to the no-cohesion policy baseline will depend both on the magnitude of domestic co-financing and the stimulus imparted to the economy by the cohesion policy shock. This will differ from country to country as well as from programme to programme.

In the complete absence of any externality (or spill-over) mechanisms, the models initially determine the demand (or Keynesian) effects of the cohesion policy infrastructure programmes, the supply effects being only included to the extent that they are captured by any induced shifts in relative prices or by any tightening of the labour market. This transitory effect will depend on the size of the policy multipliers, which will be known from the testing results of the models (available on request). For small, open economies like those of the Baltic States, these Keynesian multipliers tend to be smaller than for larger, less open economies, due mainly to trade leakages.

We now implement two spill-over (or externality) effects to augment the conventional demand-side impacts of the cohesion policy infrastructure programmes in order to capture the likely additional supply-side benefits. In each case, the strength of the spill-over effect is defined as a fraction of the improvement of the stock of infrastructure over and above the baseline (no-cohesion policy) projected level (KGINFR), i.e.,

$$\text{Externality effect} = KGINFR^{\eta}$$

where η is the spill-over elasticity. The spill-over elasticity can be approximately calibrated numerically, drawing on the empirical growth theory research literature. In any model-based simulations, the externality effects can be phased in over an extended period, reflecting the implementation stages of the cohesion policy programmes and the fact that benefits from improved infrastructure may only be exploited with a lag by the private sector in terms of increased activity[145].

Externality effects associated with improved infrastructure are introduced into the following areas of the models:

a) The <u>direct</u> influence on manufacturing output (six branches); market services output (four branches); building and construction; mining and quarrying; and energy-related, of improved infrastructure (KGINF), i.e. any rise in the stock of infrastructure relative to the no-cohesion policy baseline

[145] For example, if a motorway is being constructed between city A and city B, and no parts are opened until it is fully complete, then there will be no spill-over benefits until after completion. In such a case, the "phase-in" process would only start operating after completion, and would be zero during the implementation phase.

(KGINFR) will be reflected in a directly induced rise in output, by an amount that will depend on the size of the spill-over elasticity.

b) Total factor productivity (TFP) in manufacturing, market services, building and construction; mining and quarrying; and energy-related, is increased, once again by an amount that will depend on the size of the spill-over elasticity.

The first type of externality is an unqualified benefit to the economy, and directly enhances its performance in terms of increased manufacturing and market services output for given inputs. However, the second type is likely to have a negative downside, in that labour is shed as total factor productivity improves, unless output can be increased to offset this loss. Inevitably production will become less labour-intensive in a way that may differ from the experience of more developed economies in the EU core.

CP human resources impact analysis

The models assume that any cohesion policy expenditure on human resources directly financed through the European Social Fund (ESF) by the EU (GTRSFEC) can be matched by domestically financed public and private expenditure (GTRSFDP and GTRSFPR). Hence, the total expenditure on human resources (GTRSF) is defined in the model as follows (in current prices):

$$GTRSF = GTRSFEC + GTRSFDP + GTRSFPR$$

As regards the public finance implications, the total cost of the increased expenditure on human resources (GTRSFEC+GTRSFDP) is added to public expenditure on income transfers (GTR). However, the increase in the domestic public sector deficit (GBOR) is limited by the extent of CP aid subventions (GTRSFEC).

Since the complex institutional detail of the many ESF human resource (HR) training and education programmes cannot be handled in a stylised macroeconomic model like those used in the present exercise, one needs to simplify drastically if these mechanisms are to be included in the model. Each trainee or participant in a training course is assumed to be paid an average annual income (WTRAIN), taken to be a specified fraction of the average industrial wage (WT). Each instructor is assumed to be paid the average annual wage appropriate to the aggregate market service sector (WM). We assume an overhead on total wage costs to take account of buildings, equipment, materials, etc (OVERHD), and a trainee-instructor ratio (TRATIO)[146]. Hence, total HR expenditure (GTRSF) can be written as follows (in nominal terms):

$$GTRSF = (1+OVERHD) * (SFTRAIN*WTRAIN + LINS*WN)$$

where SFTRAIN is the number of trainees being supported and LINS is the number of instructors, defined as SFTRAIN/TRATIO[147]. In other words, the wage bill for trainers and trainees, plus the mark up to cover building, machinery and equipment, exhausts the funding. This formula is then inverted in the models and used to estimate the approximate number of extra trainees per year that can be funded from cohesion policy for a given total expenditure GTRSF on human resources, i.e.,

[146] Standard parameter values of OVERHD=0.30, TMUP=0.30 and TRATIO=15 are initially assumed, but these can be modified as more detailed information becomes available. In other words, a building/equipment overhead of 30%, an income support payment to trainees of 30% of the average industrial wage, and a trainee-instructor ratio of 15:1. Obviously, these can be varied, to reflect specific country Social Fund preferences.

[147] Even if we were able to obtain full details of the inputs and outputs of the ESF training schemes, the model simplification would still be of use since it "endogenises" the ESF schemes in the macro impact simulations in a way that would be very difficult to do with the ex-post ESF data.

SFTRAIN = (GTRSF/(1+OVERHD)) / (WTRAIN + WN/TRATIO)

The wage bill of the HR programme (SFWAG) is as follows:

SFWAG = SFTRAIN*WTRAIN + LINS*WN

The number of cohesion policy-funded trainees (measured in trainee-years) is accumulated into a 'stock' (KSFTRAIN) by means of a perpetual inventory-like formula, with a 'depreciation' rate of 5 per cent:[148]

KSFTRAIN = SFTRAIN + (1-0.05) * KSFTRAIN(-1)

In order to quantify the increase in the stock of human capital (measured in trainee years), we need to define the initial pre-cohesion policy stock of human capital, KTRAIN0. This is a conceptually difficult challenge, and we are again forced to simplify drastically. We base our measure of human capital on the average number of years of formal education and training that the labour force has achieved prior to the implementation of cohesion policy. We can cut through the complex details of the education system and stylise it as follows:

$$KTRAIN_0 = YPLS*FPLS*DPLS + YHS*FHS*DHS + YNUT*FNUT*DNUT + YUT*FUT*DUT$$

where the notation is as follows:

YPLS = standardised number of years in primary and lower secondary cycle
FPLS = fraction of population with primary and lower secondary cycle education
DPLS = "discount" factor for years of primary and lower secondary cycle[149]

YHS = standardised number of years higher secondary cycle
FHS = fraction of population with higher secondary education
DHS = "discount" factor for years of higher secondary cycle

YNUT = standardised number of years in non-university tertiary cycle
FNUT = fraction of population with non-university tertiary education
DNUT = "discount" factor for years of non-university tertiary cycle

YUT = standardised number of years in university tertiary cycle
FUT = fraction of population with university tertiary cycle
DUT = "discount" factor for years university tertiary cycle

[148] If the HR programmes are badly designed and ineffective, obviously the raw stock proxy, KSFTRAIN will be a poor guide to future benefits. However, that can be handled by imposing low, or zero spill-over benefits.

[149] The reason for including a "discount" factor is as follows. Although many studies assume that a single year of primary cycle education adds as much to human capital (and is as valuable a contribution as an input to productive working activity), as one year of university education, this is very unlikely to be true in practice. Adding up the years of education without weighting them is likely to bias the level of human capital upwards. For example, since primary and lower secondary level education are becoming the norm throughout the EU, we might discount these years relative to years of higher secondary, tertiary non-university and tertiary university education. If one sets the discount factor to zero, this is equivalent to assuming that primary and lower secondary education is a prerequisite for acquiring human capital, and not a part of productivity-enhancing human capital. However, this is a rather extreme assumption.

The accumulated stock of trainees (KSFTRAIN) is added to the exogenous baseline stock of trained workers (KTRAIN0) and is divided by the baseline stock to give the relative improvement in the proportion of trained workers associated with the cohesion policy-funded HR programmes:

$$KTRNR = (KTRAIN0+KSFTRAIN) / KTRAIN0$$

and it is this ratio (KTRNR) that enters into the calculation of spillovers (or externalities) associated with improved human resources.

In the absence of any externality mechanisms, the models calculate the income-expenditure effects of the cohesion policy human resource programmes. These effects are limited in magnitude. In addition, a sizeable fraction of the HR policy payments to trainees may simply replace existing unemployment transfers. The 'overhead' element of these programmes (equal to OVERHD*SFWAG) is assumed to boost non-wage public consumption directly.

The models introduce spill-over (or externality) effects to augment the demand-side impacts of the CP policy human resource programmes. In each case, the strength of the spill-over effect is defined as a fraction of the improvement of the stock of 'trained' workers over and above the baseline (no-cohesion policy) projected level, i.e.,

$$\text{Externality effect} = KTRNR^{\eta}$$

here η is the spill-over (or externality) elasticity. The externality elasticity can be approximately calibrated numerically, drawing on the empirical growth theory research literature. In the model-based simulations, the externality effects can be phased in over an extended period, reflecting the implementation stages of the cohesion policy programmes and the fact that benefits from improved human resources may only be exploited with a lag by the private sector in terms of increased activity.

Two types of spill-over effects associated with human capital are introduced into the models[150]:

a) The direct influence on manufacturing output (six branches); market services output (four branches); building and construction; mining and quarrying; and energy-related, of improved human capital, i.e. any rise in the "stock" of human capital relative to the no-cohesion policy baseline (proxied by KTRNR) will be reflected in an induced rise in output.

b) Labour embodied technical change in manufacturing, market services, building and construction; mining and quarrying; and energy-related, is increased, where a given output can now be produced by less workers or where any increased level of sectoral output can become more skill intensive but less employment intensive.

[150] It is well known that untrained and/or unskilled workers compete in the labour market in a very ineffective way, and are much more likely to end up as long-term unemployed than are skilled/trained workers (Layard, Nickell and Jackman, 1991). We assume that all HR/ESF trainees are in the unskilled or semi-skilled category, and that their temporary removal from the labour force for the duration of their training scheme has almost no effect on wage bargaining behaviour through the Phillips curve 'pressure' effect in the model's wage equation.

CP R&D impact analysis

Using published data on R&D expenditures, we can construct a pre-CP policy stock of R&D (KRTRIRD). We generate a total stock of pre-CP R&D by accumulating pre-CP real expenditures on R&D (i.e. deflated nominal expenditures), using the perpetual inventory formula. The value of real R&D (RRandD) in 2000 is assumed to be 0.5 per cent of GDP in 2000. To initialise the stock KRTRIRD for 2000, we set it at 10 years accumulated RRandD (2000). Given the somewhat ephemeral nature of R&D, we assume an 8% rate of depreciation. The necessary data generations are carried out in TSP, and are shown below for the programming period 2014-2023:

```
SMPL 2000 2000;
KRTRIRD=10.0*(0.5/100)*GDPFC;
SMPL 2001 2014;
GENR KRTRIRD=RRandD+(1-0.08)*KRTRIRD(-1);
```

The models assume that any CP policy-based expenditure on R&D that is directly financed by EC aid subvention can be matched both by domestically financed public expenditure and a (possibly significantly large) domestic privately financed component. The APS (direct aid to productive sectors) injection of EU funding (TRIEC) is accompanied by a national public counterpart (TRIDP) and a private sector counterpart (TRIPR). Only part of total APS (i.e., TRI) consists of R&D expenditures (i.e., TRIRD).

Hence, the total public and private cohesion policy R&D expenditure (TRIRD) is defined in the model as follows (in current prices):

$$TRIRD = (RRDTCSF/100) * (TRIEC+TRIDP+TRIPR)$$

Inside the models, these CP policy-related expenditures are converted to real terms (by deflating the nominal expenditures by an appropriate price) and are then added to any existing (non-CP policy) real R&D investment, determining total real investment in R&D (RTRIRD).

We accumulate the real TRIRD expenditures (RTRIRD) to obtain a real stock of R&D (KRTRIRD).151 However, when it comes to the public sector accounts, we exclude private transfers TRIPR from public NSRF capital expenditure (GEKCSF).

We define total "real" R&D investment expenditures as the sum of real non-cohesion policy R&D investments (RRANDD) and additional APS R&D investments (TRIRD/PCONS, where the deflator was used in the consumption price)

$$RTRIRD = RRANDD+TRIRD/PCONS$$

R&D investment is accumulated into a notional stock (KRTRIRD) by a perpetual inventory formula, assuming an 8% depreciation rate.

$$KRTRIRD = RTRIRD + (1-0.08)*KRTRIRD_{-1}$$

[151] If the R&D programmes are badly designed and ineffective, obviously the raw stock proxy, KRTRIRD will be a poor guide to future benefits. However, that can be handled by imposing low, or zero spill-over benefits.

The new (augmented) stock of R&D (KRTRIRD) is related to a baseline ex-ante stock (KRTRIRD00). Spillovers are associated with increases in this ratio (KRTRIRDR).

$$KRTRIRDR = KRTRIRD / KRTRIRD_0$$

It is this ratio that enters into the calculation of any externalities (spillovers) associated with an improved stock of R&D, as described above. The remainder of aid to productive sectors (APS), i.e., the element that is not devoted to R&D activities, is assumed to have only transitory Keynesian impacts, and no long-term spill-over impacts.

As regards the public finance implications of the APS expenditure, the total cost of the increased public expenditure on R&D is added to the domestic public sector capital expenditure (GK). Any increase in the domestic public sector deficit (GBOR) is limited by the extent of EC APS-related aid subventions. Whether or not the post-cohesion policy public sector deficit rises or falls relative to the no-cohesion policy baseline will depend both on the magnitude of domestic co-financing and the stimulus imparted to the economy by the cohesion policy shock.

In the complete absence of any externality (or spillover) mechanisms, the models calculate the demand (or Keynesian) effects of the APS-funded R&D programmes, the supply effects being only included to the extent that they are captured by any induced shifts in relative prices. This transitory effect will depend on the size of the policy multipliers, which will be known from the testing results of any specific country model.

We can now incorporate two spillover (or externality) effects to augment the conventional demand-side impacts of the APS-funded R&D programmes in order to capture likely additional supply-side benefits. In each case, the strength of the spillover effect is defined as a fraction of the improvement of the stock of R&D over and above the baseline (no-cohesion policy) projected level (KRTRIRDR), i.e.,

$$\text{Externality effect} = KRTRIRDR^{\eta}$$

where η is the spillover elasticity. The externality elasticity can be approximately calibrated numerically, drawing on the empirical growth theory research literature. In any model-based simulations, the spillover effects can be phased in over an extended period, reflecting the implementation stages of the ALS R&D programmes and the fact that benefits from improved R&D may only be exploited with a lag by the private sector in terms of increased activity.

Spillover effects associated with improved R&D are introduced into the following areas of the models:

a) The direct influence on manufacturing output (six branches); market services output (four branches); building and construction; mining and quarrying; and energy-related, of improved R&D (KRTRIRD), i.e. any rise in the stock of R&D relative to the no-cohesion policy baseline (KRTRIRDR) will be reflected in an induced rise in output.

b) Total factor productivity (TFP) in manufacturing, market services, building and construction; mining and quarrying; and energy-related, is increased

As in the case of the other spillovers (from enhanced stocks of physical infrastructure and human capital), the first type of spillover above is an unqualified benefit to the economy, and directly enhances its performance in terms of increased manufacturing sub-sector output for given inputs. However, the second type is likely to have a negative downside, in that labour is shed as total factor productivity improves, unless output can be increased to offset this loss. Inevitably production will become less labour intensive in a way that may differ from the experience of more developed economies in the EU core.

Selection of default spillover elasticities

In the previous three sections we have described the mechanisms through which improved stocks of physical infrastructure, human resources and R&D can create benefits for the economy in terms of increased output and higher productivity. We set out below the default values that we have assigned to the spillovers associated with these improved "stock" levels which determine how these mechanisms feed into the output and factor demand systems in the models.

The following spill-over parameters are imposed (with values based on international literature) and not estimated using specific national country data.

"ETA" denotes a spill-over elasticity, with the following qualifiers, where default values of the elasticities are shown in brackets. We attribute CP-related spillovers to manufacturing (T), market services (M), mining & quarrying (MQ) and energy-related (EN) branches.

Building & construction has no associated spillover elasticities and CP-related investments only have transient Keynesian impacts.

Manufacturing output (six branches: FD, TX, CG, KG, MT, AT)

Food, beverages & tobacco

ETATFDQI = Output spill-over - infrastructure (0.10)
ETATFDQH = Output spill-over - human capital (0.10)
ETATFDQR = Output spill-over - R&D (0.03)

Textiles & textile products

ETATTXQI = Output spill-over - infrastructure (0.05)
ETATTXQH = Output spill-over - human capital (0.05)
ETATTXQR = Output spill-over - R&D (0.03)

Consumer-type goods

ETATCGQI = Output spill-over - infrastructure (0.10)
ETATCGQH = Output spill-over - human capital (0.10)
ETATCGQR = Output spill-over - R&D (0.03)

Capital intensive goods

ETATKGQI = Output spill-over - infrastructure (0.10)
ETATKGQH = Output spill-over - human capital (0.10)
ETATKGQR = Output spill-over - R&D (0.03)

Basic & fabricated metals

ETATMTQI = Output spill-over - infrastructure (0.10)
ETATMTQH = Output spill-over - human capital (0.10)
ETATMTQR = Output spill-over - R&D (0.03)

High & medium-technology goods plus computer services

ETATATQI = Output spill-over - infrastructure (0.10)
ETATATQH = Output spill-over - human capital (0.10)
ETATATQR = Output spill-over - R&D (0.03)

Manufacturing productivity (six branches: FD, TX, CG, KG, MT, AT)

Food, beverages & tobacco

ETATFDPI = Productivity spill-over - infrastructure (0.10)
ETATFDPH = Productivity spill-over - to human capital (0.10)

ETATFDPR = Productivity spill-over - R&D (0.03)

Textiles & textile products

ETATTXPI = Productivity spill-over - infrastructure (0.10)
ETATTXPH = Productivity spill-over - to human capital (0.10)
ETATTXPR = Productivity spill-over - R&D (0.03)

Consumer-type goods

ETATCGPI = Productivity spill-over - infrastructure (0.10)
ETATCGPH = Productivity spill-over - to human capital (0.10)
ETATCGPR = Productivity spill-over - R&D (0.03)

Capital intensive goods

ETATKGPI = Productivity spill-over - infrastructure (0.10)
ETATKGPH = Productivity spill-over - to human capital (0.10)
ETATKGPR = Productivity spill-over - R&D (0.03)

Basic & fabricated metals

ETATMTPI = Productivity spill-over - infrastructure (0.10)
ETATMTPH = Productivity spill-over - to human capital (0.10)
ETATMTPR = Productivity spill-over - R&D (0.03)

High & medium-technology goods plus computer services

ETATATPI = Productivity spill-over - infrastructure (0.10)
ETATATPH = Productivity spill-over - to human capital (0.10)
ETATATPR = Productivity spill-over - R&D (0.03)

Market services output (four branches: HR, RD, WR, SV)

Hotels & Restaurants

ETAMHRQI = Output spill-over - infrastructure (0.03)
ETAMHRQH = Output spill-over - human capital (0.03)
ETAMHRQR = Output spill-over - R&D (0.03)

RTD & education-related services

ETAMRDQI = Output spill-over - infrastructure (0.03)
ETAMRDQH = Output spill-over - human capital (0.03)
ETAMRDQR = Output spill-over - R&D (0.03)

Wholesale & retail trade

ETAMWRQI = Output spill-over - infrastructure (0.03)
ETAMWRQH = Output spill-over - human capital (0.03)
ETAMWRQR = Output spill-over - R&D (0.03)

Transport, communication & professional services

ETAMSVQI = Output spill-over - infrastructure (0.03)
ETAMSVQH = Output spill-over - human capital (0.03)
ETAMSVQR = Output spill-over - R&D (0.03)

Market services productivity (four branches: HR, RD, WR, SV)

Hotels & Restaurants

ETAMHRPI = Productivity spill-over - infrastructure (0.03)
ETAMHRPH = Productivity spill-over - human capital (0.03)
ETAMHRPR = Productivity spill-over - R&D (0.03)

RTD & education-related services

ETAMRDPI = Productivity spill-over - infrastructure (0.03)
ETAMRDPH = Productivity spill-over - human capital (0.03)
ETAMRDPR = Productivity spill-over - R&D (0.03)

Wholesale & retail trade

ETAMWRPI = Productivity spill-over - infrastructure (0.03)
ETAMWRPH = Productivity spill-over - human capital (0.03)
ETAMWRPR = Productivity spill-over - R&D (0.03)

Transport, communication & professional services

ETAMSVPI = Productivity spill-over - infrastructure (0.03)
ETAMSVPH = Productivity spill-over - human capital (0.03)
ETAMSVPR = Productivity spill-over - R&D (0.03)

Mining & quarrying output (one branch: MQ)

ETAMQQI = Output spill-over - infrastructure (0.03)
ETAMQQH = Output spill-over - human capital (0.03)
ETAMQQR = Output spill-over - R&D (0.01)

Mining & quarrying productivity (one branch: MQ)

ETAMQPI = Productivity spill-over - infrastructure (0.03)
ETAMQPH = Productivity spill-over - human capital (0.03)
ETAMQPR = Productivity spill-over - R&D (0.01)

Energy-related output (one branch: EN)

ETAENQI = Output spill-over - infrastructure (0.03)
ETAENQH = Output spill-over - human capital (0.03)
ETAENQR = Output spill-over - R&D (0.01)

Energy-related productivity (one branch: EN)

ETAENPI = Productivity spill-over - infrastructure (0.03)
ETAENPH = Productivity spill-over - human capital (0.03)
ETAENPR = Productivity spill-over - R&D (0.01)

Annex 9. Main macroeconomic modelling results

The main macroeconomic modelling results, including both CP macroeconomic impacts and CP impacts on context indicators, are provided in the table below.

Table 34. Main macroeconomic modelling results

Notation	Indicator	Unit	State	Implementation years (2014-2023) annual average	Peak year of impact	2024-2030 annual average
Macroeconomic indicators						
GDPM	Gross Domestic Product (chain-linked volume)	Percentage change	EE	2,4	4,1	0,9
			LT	2,6	4,0	0,8
			LV	2,5	4,0	0,8
L	Total employment numbers (in thousands)	Change in thousands	EE	8,5	15,2	1,6
			LT	23,8	38,1	2,4
			LV	15,6	26,9	1,5
L	Total employment numbers	Percentage change	EE	1,4	2,5	0,3
			LT	1,8	2,9	0,2
			LV	1,7	3,0	0,2
UR	Rate of unemployment	Change in percentage points	EE	-1,3	-2,2	-0,2
			LT	-1,6	-2,5	-0,2
			LV	-1,5	-2,6	-0,1
OT	Manufacturing GDP	Percentage change	EE	0,4	1,2	1,1
			LT	0,4	1,5	1,3
			LV	0,4	1,6	1,4
OM	Market services branches GDP	Percentage change	EE	3,1	5,3	1,1
			LT	3,2	4,9	0,9
			LV	3,1	4,8	1,0
Context indicators						
GERD	Gross domestic expenditure on R&D (GERD), % of GDP	Percentage change	EE	4,6	7,8	1,8
			LT	1,5	2,4	0,5
			LV	2,1	3,4	0,7
BERD	Business enterprise R&D expenditure (BERD), % of GDP	Percentage change	EE	7,6	13,0	2,9
			LT	2,5	3,9	0,8
			LV	0,9	1,5	0,3
LPRODH	Real labour productivity per hour worked (ESA2010)	Percentage change	EE	1,1	1,7	0,9
			LT	0,7	1,1	0,7
			LV	1,0	1,6	1,0
XWGSP	Exports of goods and services (as % of GDP)	Percentage change	EE	-0,2	0,1	0,1
			LT	-0,3	0,2	0,1
			LV	-0,1	0,2	0,1
TOTENIN	Total final energy intensity	Percentage change	EE	-1,5	-2,5	-0,6
			LT	-1,1	-1,7	-0,4
			LV	-1,4	-2,3	-0,5
SHREN	Share of energy from renewable sources	Percentage change	EE	1,1	1,8	0,4
			LT	0,9	1,4	0,3
			LV	0,1	0,2	0,0

Notation	Indicator	Unit	State	Implementation years (2014-2023) annual average	Peak year of impact	2024-2030 annual average
GHGINT	GHG emissions intensity of energy consumption	Percentage change	EE	-0,2	-0,4	-0,1
			LT	-0,4	-0,7	-0,1
			LV	-0,3	-0,4	-0,1
EMP2064	Total employment rate	Percentage change	EE	1,3	2,2	0,2
			LT	1,6	2,6	0,2
			LV	1,7	2,9	0,2
NEM1524	Young people neither in employment nor in education and training (15-24 years) - % of the total population in the same age group	Percentage change	EE	-1,3	-2,2	-0,5
			LT	-1,4	-2,2	-0,5
			LV	-0,4	-0,6	-0,1
SHRRISK	Persons at-risk-of-poverty or social exclusion	Percentage change	EE	-0,7	-1,2	-0,3
			LT	-1,4	-2,2	-0,5
			LV	-1,3	-2,0	-0,4
MORTRATE	Standardised rate of mortality - All causes of death	Percentage change	EE	-1,4	-2,4	-0,6
			LT	-0,3	-0,5	-0,1
			LV	-0,6	-1,0	-0,2
HEALTHF	Healthy life years [females]	Percentage change	EE	0,3	0,5	0,1
			LT	0,5	0,8	0,2
			LV	0,2	0,3	0,1
HEALTHM	Healthy life years [males]	Percentage change	EE	0,3	0,5	0,1
			LT	0,4	0,6	0,1
			LV	0,1	0,2	0,0
LFLNGLRN	Lifelong learning	Percentage change	EE	1,7	2,7	1,3
			LT	0,6	0,9	0,6
			LV	0,3	0,5	0,3
EDU2024	At least upper secondary educational attainment, age group 20–24	Percentage change	EE	0,1	0,1	0,1
			LT	0,1	0,2	0,1
			LV	0,2	0,3	0,2
EMPRED	Employment rate (15-64 years of at least upper secondary education)	Percentage change	EE	1,1	1,9	0,2
			LT	1,2	1,9	0,1
			LV	1,6	2,7	0,1

Annex 10. The concept of the “cumulative” multiplier

The interpretation of impacts of CP policies on identified macroeconomic indicators (e.g. GDP, employment numbers, productivity, etc.) is fairly straightforward, even if judgements about how good or bad these impacts can be more complex.

The use of "multipliers" assists with aspects of the evaluation of impacts of CP policies. There are two basic types of multipliers - the "standard" multiplier and the "cumulative" multiplier.

The "standard" multiplier can be interpreted as follows, using the impact on aggregate GDP for Estonia as an illustration. The table below shows the "standard" GDP multiplier for Estonia, for the years 2014 to 2030, the year when all of the CP simulations terminate. It is calculated by shocking the baseline by a 10 percent permanent increase in the baseline level of public investment (IG).

Table 35. “Standard” multiplier (example of Estonia)

Date	del(IG)	del(GDP)	Std Mult
2013	0	0	0
2014	59.88	66.41	1.11
2015	58.49	69.76	1.19
2016	57.71	70.31	1.22
2017	57.23	67.26	1.18
2018	56.84	64.1	1.13
2019	56.51	60.86	1.08
2020	56.11	57.79	1.03
2021	55.69	54.87	0.99
2022	55.25	52.17	0.94
2023	54.81	49.57	0.90
2024	54.36	47.12	0.87
2025	53.91	44.79	0.83
2026	53.45	42.57	0.80
2027	52.99	40.47	0.76
2028	52.52	38.48	0.73
2029	52.05	36.22	0.70
2030	51.58	34.39	0.67

Source: Project team calculations, 2016

As shown in the table above, the standard investment multiplier is less than unity. In other words, increasing public investment in Estonia by 1 million EUR increases Estonian GDP by less than 1 million EUR (all in constant prices). This is because the Estonian economy is very open to the world economy and imports much of its capital goods and some services. This low multiplier is very similar to the multiplier for the other Baltic States, as well as for Ireland.

The "cumulative" multiplier is designed to take account of the fact that the magnitude of the CP shock varies from year to year over the full implementation period 2014-2023, and is zero thereafter. So a "standard" multiplier cannot be calculated, where the magnitude of the shock has to be fixed over the implementation period. It is more relevant to evaluate, as the CP programme is progressively implemented, how the

accumulating investments give a return in terms of accumulating increments in GDP. In other words, if, say, by the year 2023 X million EUR is spent, how much is got in terms of accumulated increments of GDP? The calculations can be best illustrated in the table below, using the Estonian CP simulation.

Table 36. "Cumulative" multiplier (example of Estonia)

Date	CumCP	CumGDP	CumMult
2013	0.00	0.00	0.00
2014	0.00	0.00	0.00
2015	0.32	0.42	1.32
2016	1.75	2.47	1.41
2017	4.07	6.08	1.49
2018	6.37	10.08	1.58
2019	8.56	14.18	1.66
2020	10.30	17.83	1.73
2021	11.29	20.50	1.81
2022	11.78	22.40	1.90
2023	12.24	24.17	1.97
2024	12.24	25.28	2.07
2025	12.24	26.30	2.15
2026	12.24	27.25	2.23
2027	12.24	28.17	2.30
2028	12.24	29.05	2.37
2029	12.24	29.91	2.44
2030	12.24	30.75	2.51

Source: Project team calculations, 2016

No CP funding was spent in the year 2014. In 2015 the expenditure amounted to 0.32 percent of GDP. The increment to GDP was 0.42 percent. For this year, and this year only, the "standard" and the "cumulative" multipliers are the same (1.32), reflecting the fact that the import propensity from CP investments are lower than for aggregate public and private investments. As the years go by the CP injections are accumulated (expressed as a percentage of GDP) and the increments to GDP are accumulated as well. Dividing the latter by the former gives the evolution of the "cumulative" multiplier.

CP expenditures cease on December 2023. But there are long-tailed benefits from the now-completed CP investments. By the year 2030 an accumulated expenditure of CP funds equal to 12.24 percent of GDP (and frozen since end 2023) and have generated an accumulated increase in GDP of 30.73 percent. So the "cumulative" multiplier in 2030 is 2.51. This methodology has the advantage that it permits both comparisons with other non-CP domestic investment programmes as well as international comparisons with other CP programmes. The report showed that there were only modest differences between the cumulative multipliers for the three Baltic States.

How can one judge whether or not such a result represents a good return on public investment? In this case, a cumulative investment of 1 million EUR generates a return of 2.51 million EUR, i.e., a rate of return of 151 percent over 16 years, approximately 9.4 percent per year on average. In view of the assumptions that we are necessary to make in constructing the CP impact mechanisms in the models, it would be unwise to take these returns as a single truth. But they do give a rough estimate of the returns from CP investments. In an ideal world, these mechanisms would be refined and upgraded as the preliminary results from the CP programmes become available.

Annex 11. Country factsheets

ESTONIA - RTDI sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	3 percent GERD as a percentage of GDP
Country Specific Recommendations	Promote private investment in research, development and innovation, including by strengthening cooperation between academia and businesses.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Research and innovation capacity	R&D is of a high level, and Estonia is active and visible in international RDI cooperation
RTDI activities in the private sector	The RD&I makes the structure of the economy more knowledge-intensive and addresses societal challenges
	Innovative solutions increase resource productivity of enterprises
	Estonian enterprises offer innovative products and services with high value-added

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
642.3	1st	1762.5	489	1342	36%
			EE, LV, LT (highest on the left)	EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
GERD as a percentage of GDP	1.44 (2014)	EU-28, EE, LT, LV	↑ 34.6% (2007-2014)	EE, LT, LV, EU-28	2.4	EE, LT, LV
BERD as a percentage of GDP	0.63 (2014)	EU-28, EE, LT, LV	↑ 26.0% (2007-2014)	LV, LT, EE, EU-28	1.5	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
GERD as a percentage of GDP	4.6%	EE, LV, LT	1.8%	EE, LV, LT
BERD as a percentage of GDP	7.6%	EE, LT, LV	2.9%	EE, LT, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	
Low-medium	+
Low	

ESTONIA - ICT sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Accessibility to broadband and high-speed internet	Whole population of Estonia has access to high-speed Internet
Development of electronic public administration services and reuse of public sector information	The basic service infrastructure supports the take up of e-services in Estonia and cross-border

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
84.6	11th	375.2	64	286	23%
			LV, LT, EE (highest on the left)	EE, LT, LV (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of households with broadband internet connection type	89% (2015)	EE, EU, LV, LT	↑ 58.9% (2007-2015)	LV, EU, EE, LT	Quantitative estimation is not available	-
Share of households with a broadband internet connection type (sparsely populated areas)	84% (2015)	EE, EU, LV, LT	↑ 127% (2007-2015)	LV, LT, EU, EE	Quantitative estimation is not available	-
Share of individuals using the internet to interact with the public authorities	81% (2015)	EE, LV, EU, LT	↑ 119% (2007-2015)	LV, EE, LT, EU	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Share of individuals using the internet to interact with the public authorities	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

ESTONIA - SMEs sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
SMEs productivity and export	SMEs are growth and export oriented
Entrepreneurship and regional growth	

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
301.3	5th	997.7	229	760	30%
			EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Real labour productivity per hour worked	43 percent of EU-28 average (2013)	EU-28, EE, LT, LV	↑ 48.1% (2002-2013)	LV, LT, EE, EU-28	55 percent of EU-28 average	EE, LT, LV
			↑ 10.7% (2007-2013)	LT, EE, LV, EU-28		
Total export as a share of GDP	79.8% (2015)	EE, LT, LV, EU-28	↑ 26.2% (2007-2015)	LT, LV, EE, EU-28	87.2%	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Real labour productivity per hour worked	1.1%	EE, LV, LT	0.9%	LV, EE, LT
Total export as a share of GDP	-0.2%	LV, EE, LT	0.1%	All three equal

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	
Low-medium	**+**
Low	

ESTONIA - Energy sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Greenhouse gas emissions not more than 11 percent higher, compared to 2005 levels. Renewable energy (in % of gross final energy consumption): 25 percent. Energy efficiency (primary energy consumption levels in 2020 expressed in Mtoe): 6.5.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Energy consumption and renewable energy	Energy-efficient housing sector and street lighting[152]

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
247.1	7th	390.7	188	298	63%
			LT, EE, LV (highest on the left)	LT, LV, EE (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Total final energy intensity (kgoe/EUR 1000 of GDP)	160.8 (2014)	EU-28, LT, EE, LV	↓ -7.6% (2007-2014)	LT, EU-28, EE, LV	136	LT, EE, LV
Share of renewable energy in gross final energy consumption	26.5% (2014)	LV, EE, LT, EU-28	↑ 55% (2007-2014)	EE, EU-28, LT, LV	30%	LV, EE, LT

[152] The SPO in Estonian OP also encompasses some renewable energy related actions and GHG emissions reduction targets.

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[153])	3.24 (2013)	LV, EU-28, LT, EE	↓ -4.8% (2007-2013)	EU-28, EE, LV, LT	3.2	LV, LT, EE

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Total final energy intensity (kgoe/EUR 1000 of GDP)	-1.5%	EE, LV, LT	-0.6%	EE, LV, LT
Share of renewable energy in gross final energy consumption	1.1%	EE, LT, LV	0.4%	EE, LT, LV
GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[154])	-0.2%	LT, LV, EE	-0.1%	All three equal

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

[153] Tonnes of oil equivalent (TOE).
[154] Tonnes of oil equivalent (TOE).

ESTONIA – Adaptation to climate change sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Greenhouse gas emissions not more than 11 percent higher, compared to 2005 levels.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Prevention of climate change induced threats	Increased capability to react to emergencies caused by climate change and extensive pollution

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
56.3	12th	340.1	43	259	17%
			EE, LT, LV (highest on the left)	EE, LT, LV (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
N/A[155]	-	-	-	-	-	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
N/A	-	-	-	-

[155] No appropriate indicator was available. The policy area is closely associated with the volume of emitted greenhouse gas. This indicator is used in the Energy and Transport sectors/policy areas. In addition, OPs in the "Adaptation to climate change" sector/policy area are focused on prevention to avoid floods and other natural disasters, but not on activities reducing greenhouse gas emissions.

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	**+**
Medium-high	
Medium	
Low-medium	
Low	

ESTONIA – Environment and resource efficiency sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Water supply and wastewater treatment	Compliant water management infrastructure in agglomerations with over 2000 p.e.
Biodiversity	Improved status of protected species and habitats
Surface waters and rehabilitation of contaminated sites	Rehabilitated contaminated areas, bodies of water and wetlands

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
254.3	7th	2 538.7	194	1 933	10%
			LV, LT, EE (highest on the left)	EE, LV, LT (highest on the left)	LT, LV, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Recycling rate of municipal waste	31.3% (2014)	EU-27, EE, LT, LV	↑ 32.0% (2007-2014)	LT, LV, EE, EU-28	Quantitative estimation is not available	-
Sufficiency index (terrestrial sites) of habitats directive	96% (2012)	EE, LV, EU-27, LT	↑ 14.3% (2006-2012)	EE, LT, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Recycling rate of municipal waste	Quantitative estimation is not available	-	Quantitative estimation is not available	-
Sufficiency index (terrestrial sites) of habitats directive	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

ESTONIA - Transport sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Sustainable / public transport	The share of users of sustainable means of mobility has grown
	Improved sustainable transport, including rail transport on TEN-T network
TEN-T network	Improved connections on TEN-T
	Improved sustainable transport, including rail transport on TEN-T network

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
524.8	2nd	4374.8	400	3331	12%
			LV, EE, LT (highest on the left)	EE, LV, LT (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)	0.92 (2013)	LV, LT, EU-28, EE	↓ -8.0% (2007-2013)	LV, LT, EU-28, EE	Quantitative estimation is not available	-
Passenger cars (%) in total inland passenger-km	84 (2013)	LV, EU-28, EE, LT	↑ 5.7% (2007-2013)	LV, EU-28, LT, EE	Quantitative estimation is not available	-
Number of people killed in road accidents (per 100 000 inhabitants)	5 (2015)	EE, LT, LV	↓ -65.8% (2007-2015)	LT, EE, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)	Quantitative estimation is not available	-	Quantitative estimation is not available	-
Passenger cars (%) in total inland passenger-km	Quantitative estimation is not available		Quantitative estimation is not available	
Number of people killed in road accidents (per 100 000 inhabitants)	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	**+**
Medium-high	
Medium	
Low-medium	
Low	

ESTONIA - Employment sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	76 percent employment rate
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Opportunities for employers	Business activity has grown outside the urban areas of Tartu and Tallinn
Capacities of the unemployed and vulnerable groups	Increased labour market participation and employment of people with reduced ability to work; slowing the decline in the working-age population's ability to work
	Increased employment of the target groups of lower employability who have participated in active labour market measures

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
394.4	4th	1 381.3	300	1052	29%
			EE, LT, LV (highest on the left)	EE, LT, LV (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Total employment rate	76.5% (2015)	EE, LT, LV, EU-28	↓ 0.5% (2007-2015)	LT, EU-28, EE, LV	75.3%	EE, LT, LV
Share of young people neither in employment nor in education and training	10.8% (2015)	LT, LV, EE, EU-28	↑ 18.0% (2007-2015)	LV, EU-28, EE, LT	10.1%	LT, EE, LV
Financing to labour market policy measures as percentage of GDP	0.1% (2014)	LT, LV, EE	↑ 500% (2007-2014)	EE, LV, LT	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Total employment rate	1.3%	LV, LT, EE	0.2%	All three equal
Share of young people neither in employment nor in education and training	-1.3%	LT, EE, LV	-0.5%	EE and LT equal, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	
Low-medium	+
Low	

ESTONIA – Social inclusion sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Reduction of the at risk of poverty rate after social transfers to 15 percent, equivalent to an absolute decrease by 36,248 persons
Country Specific Recommendations	Ensure the provision and accessibility of high quality public services, especially social services, at local level, inter alia by adopting and implementing the proposed local government reform. Adopt and implement measures to narrow the gender pay gap, including those foreseen in the Welfare Plan.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Social services for socially disadvantaged groups	Welfare services which are more integrated and of higher quality support the community living for people with special psychiatric needs and people with disabilities have better opportunities to cope in their home environment
	Improved competitiveness for participation in Estonian society, incl. labour market, lifelong learning and civil society, among people who have received adaptation and integration services
	Increased labour market participation of custodians who have received childcare services and support services for children with disabilities
	Increased labour market participation or improved coping of people with special needs, care burden or coping difficulties who have received welfare services
	Residents of larger urban areas are provided with nursery school and childcare options near home
Integration into the labour market	Inclusion and improvement of the employability of young people, incl. those at risk of exclusion
Revival of underused/disadvantaged areas	Major underused districts in larger urban areas of Ida-Viru County have been revived

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
238.1	8th	18 735,2	181	14 266	1.3%
			EE, LV, LT (highest on the left)	EE, LT, LV (highest on the left)	EE, LV, LT, (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
The share of people at risk of poverty or social exclusion	26% (2014)	EU, EE, LT, LV	↑ 18.2% (2007-2014)	LV, LT, EU, EE	24%	LT, EE, LV
Unemployment of persons less than 25 years old	13.1% (2015)	EE, LT, LV, EU	↑ 23.6% (2007-2015)	EE, EU, LV, LT	Quantitative estimation is not available	-
Employment of persons 55–64 years old	68.7% (2015)	EE, LT, LV, EU	↑ 10.4% (2007-2015)	EU, LT, EE, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
The share of people at risk of poverty or social exclusion	-0.7%	LT, LV, EE	-0.3%	LT, LV, EE

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

ESTONIA – Health sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Regionally available, high-quality healthcare services	Regionally accessible, high-quality and sustainable healthcare services
Healthy lifestyle	Reduced alcohol consumption by people who have received services

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
150	9th	8490	114	6465	1,8%
			LV, EE, LT (highest on the left)	EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Standardised death rate (all causes of death) per 100 000 persons	1283.7 (2013)	EU, EE, LT, LV	↓ 26% (2007-2013)	EE, LV, LT, EU	1089	EE, LT, LV
Healthy life years (absolute value at birth) of females	57.1 (2014)	EU, LT, EE, LV	↑ 4% (2007-2014)	LT, EE, LV, EU	59	LT, EE, LV
Healthy life years (absolute value at birth) of males	53.2 (2014)	EU, LT, EE, LV	↑ 6.8% (2007-2014)	LT, EE, LV, EU	56	LT, EE, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Standardised death rate (all causes of death) per 100 000 persons	-1.4%	EE, LV, LT	-0.6%	EE, LV, LT
Healthy life years (absolute value at birth) of females	0.3%	LT, EE, LV	0.1%	LT, EE and LV equal
Healthy life years (absolute value at birth) of males	0.3%	LT, EE, LV	0.1%	EE and LT equal, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

ESTONIA – Education, skills and lifelong learning sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	9.5 percent early school leaving. 40 percent of 30-34-year-olds have completed tertiary education.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Improve early and general education	Improving the teaching competence of teaching staff, principals and youth workers in order to implement a teaching approach that supports the personal and social development and develops the learning skills, creativity and entrepreneurial ability of each learner at all levels and in all forms of education
	Modern and innovative study materials have been introduced
	A general education school network that takes into account demographic changes, is based on the principles of inclusive education and ensures equal access to high-quality education in all regions of Estonia
Improve career and educational guidance, consistency between studies and the needs of the labour market	Reducing school and education drop-out rates and supporting career choices through high-quality educational support services
	Studies in vocational and higher education institutions are more in line with labour market needs and support entrepreneurial ability
Improve lifelong learning	Increased share of adults with professional and occupational qualifications, improved key competences for lifelong learning, and improved employability

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
412.8	3rd	9 784.9	314	7 423	4.2%
			EE, LV, LT (highest on the left)	EE, LV, LT (highest on the left)	LV, EE and LT equal (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of early leavers from education and training	11.2% (2015)	LT, LV, EU, EE	↓ 22.2% (2007-2015)	LV, LT, EU, EE	Quantitative estimation is not available	-

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Tertiary educational attainment in the 30-34 year-olds age group	45.3% (2015)	LT, EE, LV, EU	↑ 35.2% (2007-2015)	LV, LT, EE, EU	Quantitative estimation is not available	-
Employment rate of 15-64 year-olds with at least an upper secondary education	75.8% (2014)	EE, LT, EU, LV	↓ 4.2% (2007-2014)	EU, LT, EE, LV	76.7%	EE, LT, LV
At least an upper secondary educational attainment in the age group of 20-24 year olds	82.6% (2015)	LT, LV, EE, EU	↑ 2% (2007-2015)	LV, EU, LT, EE	85.7%	LT, LV, EE
Level of lifelong learning	12.5% (2015)	EE, EU, LT, LV	↑ 78.6% (2007-2015)	EE, EU, LT, LV	18.6%	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Employment rate of 15-64 year-olds with at least an upper secondary education	1.1%	LV, LT, EE	0.2%	EE, LT, LV
At least an upper secondary educational attainment in the age group of 20-24 year olds	0.1%	LV, EE and LT equal	0.1%	LV, EE and LT equal
Level of lifelong learning	1.7%	EE, LT, LV	1.3%	EE, LT, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

ESTONIA – Institutional capacity of public authorities and administration sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	Ensure the provision and accessibility of high quality public services, especially social services, at local level, inter alia by adopting and implementing the proposed local government reform.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Knowledge-based public administration	Improve policy development process through introducing mechanisms and tools for more holistic, inclusive and knowledge-based polices
Development of human resources	Professional competence and management of general government has increased
Quality of public services	Public services are provided accessibly, uniformly and in a user-centred and smart manner

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
119.3	10th	280	91	213	43%
			EE, LT, LV (highest on the left)	LT, EE, LV (highest on the left)	EE, LT, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
N/A	-	-	-	-	-	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
N/A	-	-	-	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	**+**
Medium	
Low-medium	
Low	

LITHUANIA - RTDI sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	1.9 percent GERD as a percentage of GDP
Country Specific Recommendations	Take measures to strengthen productivity and improve the adoption and absorption of new technology across the economy. Improve the coordination of innovation policies and encourage private investment, inter alia by developing alternative means of financing.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Research and innovation capacity	Promoting more active use of the existing and new research, development and innovation infrastructure
RTDI activities in the private sector	Increasing the intensiveness of research, development and innovation activities in the private sector
	Increasing the extent of knowledge commercialisation and technology transfer

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
638.1	4th	1973.1	218	663	33%
			EE, LV, LT (highest on the left)	EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
GERD as a percentage of GDP	1.01 (2014)	EU-28, EE, LT, LV	↑ 26.3% (2007-2014)	EE, LT, LV, EU-28	1.2	EE, LT, LV
BERD as a percentage of GDP	0.3 (2014)	EU-28, EE, LT, LV	↑ 30.4% (2007-2014)	LV, LT, EE, EU-28	0.4	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
GERD as a percentage of GDP	1.5%	EE, LV, LT	0.5%	EE, LV, LT
BERD as a percentage of GDP	2.5%	EE, LT, LV	0.8%	EE, LT, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	+
Low-medium	
Low	

LITHUANIA - ICT sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Accessibility to broadband and high-speed internet	Increasing the availability and use of broadband electronic communication networks in areas where the market is not able to ensure the development of next generation access infrastructure and the provision of services
Development of electronic public administration services and reuse of public sector information	Increasing the efficiency of the protection of state information infrastructure and resources
	Increasing the reuse of public sector information for business and public needs
	Increasing the demand for ICT among the population
	Increasing the accessibility and quality of public and administrative services

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
229.4	9th	725.2	79	248	32%
			LV, LT, EE (highest on the left)	EE, LT, LV (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of households with broadband internet connection type	74% (2015)	EE, EU, LV, LT	↑ 42.3% (2007-2015)	LV, EU, EE, LT	Quantitative estimation is not available	-
Share of households with a broadband internet connection type (sparsely populated areas)	60% (2015)	EE, EU, LV, LT	↑ 161% (2007-2015)	LV, LT, EU, EE	Quantitative estimation is not available	-

Share of individuals using the internet to interact with the public authorities	44% (2015)	EE, LV, EU, LT	↑100% (2007-2015)	LV, EE, LT, EU	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Share of individuals using the internet to interact with the public authorities	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	+
Low-medium	
Low	

LITHUANIA - SMEs sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	Take measures to strengthen productivity and improve the adoption and absorption of new technology across the economy.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
SMEs productivity and export	Increasing the internationalisation of SMEs
	Increasing the productivity of SMEs
Entrepreneurship and regional growth	Increasing the level of entrepreneurship
Eco-innovations	Increasing investments of SMEs in eco-innovation and other resource-efficient technologies

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
499.7	7th	945.3	171	324	53%
			EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Real labour productivity per hour worked	39 percent of EU-28 average (2013)	EU-28, EE, LT, LV	↑ 63.1% (2002-2013)	LV, LT, EE, EU-28	46 percent of EU-28 average	EE, LT, LV
			↑ 21.8% (2007-2013)	LT, EE, LV, EU-28		
Total export as a share of GDP	77.3%	EE, LT, LV, EU-28	↑ 53.4% (2007-2015)	LT, LV, EE, EU-28	84.9%	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Real labour productivity per hour worked	0.7%	EE, LV, LT	0.7%	LV, EE, LT
Total export as a share of GDP	-0.3%	LV, EE, LT	0.1%	All three equal

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	
Low-medium	+
Low	

LITHUANIA - Energy sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Greenhouse gas emissions not more than 15 percent higher, compared to 2005 levels. Renewable energy (in % of gross final energy consumption): 23 percent. Energy efficiency (primary energy consumption levels in 2020 expressed in Mtoe): 6.485.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Energy consumption and renewable energy	Reduce energy consumption in public infrastructures and multi-apartment houses
	Enhance energy efficiency in the heat supply sector and households
	Reduce intensity of energy consumption in industrial enterprises
	Increase the use of renewable energy
Quality of energy supply	Test the prospects of introducing smart grid technologies
Integration into the EU internal energy market	Strengthen integration into the European Union's internal energy market

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
1 047.2	1st	1 221.4	358	418	86%
			LT, EE, LV (highest on the left)	LT, LV, EE (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Total final energy intensity (kgoe/EUR 1000 of GDP)	145.8 (2014)	EU-28, LT, EE, LV	↓ -11.6% (2007-2014)	LT, EU-28, EE, LV	129	LT, EE, LV
Share of renewable energy in gross final energy consumption	23.9% (2014)	LV, EE, LT, EU-28	↑ 43% (2007-2014)	EE, EU-28, LT, LV	26%	LV, EE, LT
GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[156])	2.98 (2013)	LV, EU-28, LT, EE	↑ 8.8% (2007-2013)	EU-28, EE, LV, LT	2.9	LV, LT, EE

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Total final energy intensity (kgoe/EUR 1000 of GDP)	-1.1%	EE, LV, LT	-0.4%	EE, LV, LT
Share of renewable energy in gross final energy consumption	0.9%	EE, LT, LV	0.3%	EE, LT, LV
GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[157])	-0.4%	LT, LV, EE	-0.1%	All three equal

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

[156] Tonnes of oil equivalent (TOE).
[157] Tonnes of oil equivalent (TOE).

LITHUANIA – Adaptation to climate change sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Greenhouse gas emissions not more than 15 percent higher, compared to 2005 levels.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Prevention of climate change induced threats	Minimise climate change-induced damage

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
108.6	12th	296.7	37	102	37%
			EE, LT, LV (highest on the left)	EE, LT, LV (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
N/A[158]	-	-	-	-	-	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
N/A	-	-	-	-

[158] No appropriate indicator was available. The policy area is closely associated with the volume of emitted greenhouse gas. This indicator is used in the Energy and Transport sectors/policy areas. In addition, OPs in the "Adaptation to climate change" sector/policy area are focused on prevention to avoid floods and other natural disasters, but not on activities reducing greenhouse gas emissions.

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	**+**
Medium-high	
Medium	
Low-medium	
Low	

LITHUANIA – Environment and resource efficiency sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Water supply and wastewater treatment	Enhance accessibility of water supply and wastewater treatment services and improve efficiency of the system
Biodiversity	Improve the status of native plant and animal species, habitats and landscape
Cultural and natural heritage	Enhance relevance, number of visits and visibility of cultural and natural heritage, including public awareness on the surrounding environment
Waste management	Reduce municipal waste disposal in landfills and ensure proper storage of radioactive waste
Surface waters and rehabilitation of contaminated sites	Improve the status of the Baltic Sea and other surface waters
Pollution in urban areas	Reduce the level of threat to health and environment, caused by urban air pollution by particulate matter and soil pollution by chemical substances

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
675.0	4th	3 796.1	231	1 299	18%
			LV, LT, EE (highest on the left)	EE, LV, LT (highest on the left)	LT, LV, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Recycling rate of municipal waste	30.5% (2014)	EU-27, EE, LT, LV	↑ 406.7% (2014-2007)	LT, LV, EE, EU-28	Quantitative estimation is not available	-
Sufficiency index (terrestrial sites) of habitats directive	63% (2012)	EE, LV, EU-27, LT	↑ 3.3% (2006-2012)	EE, LT, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Recycling rate of municipal waste	Quantitative estimation is not available	-	Quantitative estimation is not available	-
Sufficiency index (terrestrial sites) of habitats directive	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	**+**
Medium	
Low-medium	
Low	

LITHUANIA - Transport sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Sustainable / public transport	Promote sustainable mobility and develop environment-friendly transport to reduce carbon dioxide emissions
TEN-T network	Improve interoperability between national multimodal transport system and trans-European transport networks
Mobility in other neworks	Enhancing regional mobility through developing regional connections to the main transport network of the country and implementing traffic safety measures

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
1028.3	2nd	4686.2	352	1604	22%
			LV, EE, LT (highest on the left)	EE, LV, LT (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)	0.84 (2013)	LV, LT, EU-28, EE	↓ -15.9% (2007-2013)	LV, LT, EU-28, EE	Quantitative expression is not available	-
Passenger cars (%) in total inland passenger-km	91 (2013)	LV, EU-28, EE, LT	↑ 0.4% (2007-2013)	LV, EU-28, LT, EE	Quantitative expression is not available	-
Number of people killed in road accidents (per 100 000 inhabitants)	8 (2015)	EE, LT, LV	↓ -67.4% (2007-2015)	LT, EE, LV	Quantitative expression is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)	Quantitative expression is not available	-	Quantitative expression is not available	-
Passenger cars (%) in total inland passenger-km	Quantitative expression is not available	-	Quantitative expression is not available	-
Number of people killed in road accidents (per 100 000 inhabitants)	Quantitative expression is not available	-	Quantitative expression is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	**+**
Medium	
Low-medium	
Low	

LITHUANIA - Employment sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	72.8 percent employment rate
Country Specific Recommendations	Strengthen investment in human capital and address skills shortages, by improving the labour market relevance of education, raising the quality of teaching and pursuing more active labour market policies and adult learning. Strengthen the role of social dialogue mechanisms.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Opportunities for employers	Diversify economic activities and improve conditions for attracting investment in support of job creation in target territories (urban areas)
	Increase labour demand by promoting entrepreneurship of the population, in particular those who face difficulties on the labour market
	Raise understanding of the society, business and public sector on the application of principles of equality between men and women and non-discrimination ...
Capacities of the unemployed and vulnerable groups	Increase employment, especially among the long-term and unskilled unemployed and people with disabilities
	Reduce the number of young people between 15 and 29 years of age not in employment, education or training
Capabilities of labour market services	Improve the quality and accessibility of services provided by labour market institutions
	Improving the effectiveness of a public employment service and making it more results-oriented

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
688.3	3rd	1 370.7	236	469	50%
			EE, LT, LV (highest on the left)	EE, LT, LV (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Total employment rate	73.4% (2015)	EE, LT, LV, EU-28	↑ 0.9% (2007-2015)	LT, EU-28, EE, LV	71.5%	EE, LT, LV

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of young people neither in employment nor in education and training	9.2% (2015)	LT, LV, EE, EU-28	↑ 29.6% (2007-2015)	LV, EU-28, EE, LT	8.5%	LT, EE, LV
Financing to labour market policy measures as percentage of GDP	0.18% (2013)	LT, LV, EE	↓ 18.2% (2007-2014)	EE, LV, LT	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Total employment rate	1.6%	LV, LT, EE	0.2%	All three equal
Share of young people neither in employment nor in education and training	-1.4%	LT, EE, LV	-0.5%	EE and LT equal, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LITHUANIA – Social inclusion sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Reducing the number of persons at risk of poverty or social exclusion to 814 000
Country Specific Recommendations	Improve the coverage and adequacy of unemployment benefits and social assistance.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Social services for socially disadvantaged groups	Increase the share of community-based social services through transition from institutional to community-based services
	Improve access to and quality of community-based services, develop services for families
Integration into the labour market	Enhance integration of persons most distant from the labour market into the labour market
	Increase participation by older working-age persons in the labour market and volunteering
	Improve local employability and enhance social integration of communities, by making use of relationship among local communities, businesses and local governments
Social housing	Facilitate access to social housing for the most disadvantaged social groups
Revival of underused/disadvantaged areas	Reduce disparities in the quality of life caused by geographical conditions and demographic processes
Social responsibility	Promote the emergence of initiatives enhancing social entrepreneurship and social responsibility

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
256.1	8th	33 619,5	88	11 509	0.8%
			EE, LV, LT (highest on the left)	EE, LT, LV (highest on the left)	EE, LV, LT, (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
The share of people at risk of poverty or social exclusion	27.3% (2014)	EU, EE, LT, LV	↓ 4.9% (2007-2014)	LV, LT, EU, EE	23.4%	LT, EE, LV

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Unemployment of persons less than 25 years old	16.3% (2015)	EE, LT, LV, EU	↑ 94% (2007-2015)	EE, EU, LV, LT	Quantitative estimation is not available	-
Employment of persons 55–64 years old	66.2% (2015)	EE, LT, LV, EU	↑ 19.7% (2007-2015)	EU, LT, EE, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
The share of people at risk of poverty or social exclusion	-1.4%	LT, LV, EE	-0.5%	LT, LV, EE

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LITHUANIA – Health sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	Improve the performance of the healthcare system by strengthening outpatient care, disease prevention and health promotion.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Regionally available, high-quality healthcare services	Improve health-care quality and accessibility for target groups and reduce health inequalities
Healthy lifestyle	Reduce health inequalities by improving health-care quality and accessibility for target population groups and promoting healthy ageing

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
209.5	10th	16346.9	72	5596	1.3 %
			LV, EE, LT (highest on the left)	EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Standardised death rate (all causes of death) per 100 000 persons	1510.9 (2013)	EU, EE, LT, LV	↓ 13% (2007-2013)	EE, LV, LT, EU	1456	EE, LT, LV
Healthy life years (absolute value at birth) of females	61.7 (2014)	EU, LT, EE, LV	↑ 6.2% (2007-2014)	LT, EE, LV, EU	65	LT, EE, LV
Healthy life years (absolute value at birth) of males	57.8 (2014)	EU, LT, EE, LV	↑ 8.4% (2007-2014)	LT, EE, LV, EU	59	LT, EE, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Standardised death rate (all causes of death) per 100 000 persons	-0.3%	EE, LV, LT	-0.1%	EE, LV, LT
Healthy life years (absolute value at birth) of females	0.5%	LT, EE, LV	0.2%	LT, EE and LV equal
Healthy life years (absolute value at birth) of males	0.4%	LT, EE, LV	0.1%	EE and LT equal, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LITHUANIA – Education, skills and lifelong learning sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	< 9 percent early school leaving. 48.7 percent of 30-34-year-olds have completed tertiary education.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Improve early and general education	Improving the teaching competence of teaching staff, principals and youth workers in order to implement a teaching approach that supports the personal and social development and develops the learning skills, creativity and entrepreneurial ability of each learner at all levels and in all forms of education
	Modern and innovative study materials have been introduced
	A general education school network that takes into account demographic changes, is based on the principles of inclusive education and ensures equal access to high-quality education in all regions of Estonia
Improve career and educational guidance, consistency between studies and the needs of the labour market	Reducing school and education drop-out rates and supporting career choices through high-quality educational support services
	Studies in vocational and higher education institutions are more in line with labour market needs and support entrepreneurial ability
Improve lifelong learning	Increased share of adults with professional and occupational qualifications, improved key competences for lifelong learning, and improved employability

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
623.4	6th	14 813.4	213	5 071	4.2%
			EE, LV, LT (highest on the left)	EE, LV, LT (highest on the left)	LV, EE and LT equal (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of early leavers from education and training	5.5% (2015)	LT, LV, EU, EE	↓ 29.5% (2007-2015)	LV, LT, EU, EE	Quantitative estimation is not available	-

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Tertiary educational attainment in the 30-34 year-olds age group	57.6% (2015)	LT, EE, LV, EU	↑ 58.2% (2007-2015)	LV, LT, EE, EU	Quantitative estimation is not available	-
Employment rate of 15-64 year-olds with at least an upper secondary education	74.5% (2014)	EE, LT, EU, LV	↓ 1.3% (2007-2014)	EU, LT, EE, LV	74.3%	EE, LT, LV
At least an upper secondary educational attainment in the age group of 20-24 year olds	91.3% (2015)	LT, LV, EE, EU	↑ 3.4% (2007-2015)	LV, EU, LT, EE	96.4%	LT, LV, EE
Level of lifelong learning	5.1% (2015)	EE, EU, LT, LV	↑ 5.8% (2007-2015)	EE, EU, LT, LV	6.3%	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Employment rate of 15-64 year-olds with at least an upper secondary education	1.2%	LV, LT, EE	0.1%	EE, LT, LV
At least an upper secondary educational attainment in the age group of 20-24 year olds	0.1%	LV, EE and LT equal	0.1%	LV, EE and LT equal
Level of lifelong learning	0.6%	EE, LT, LV	0.6%	EE, LT, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LITHUANIA – Institutional capacity of public authorities and administration sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in Lithuanian OP
Knowledge-based public administration	Strengthen result-orientation of governance
	Improve business regulation environment
	Increase transparency and openness of the public administration processes
Development of human resources	Improve management of human resources in the public service
Quality of public services	Improve the quality of services and make them more customer-oriented

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
141.1	11th	923.6	48	316	15%
			EE, LT, LV (highest on the left)	LT, EE, LV (highest on the left)	EE, LT, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
N/A	-	-	-	-	-	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
N/A	-	-	-	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	**+**
Medium	
Low-medium	
Low	

LATVIA - RTDI sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	1.5 percent GERD as a percentage of GDP
Country Specific Recommendations	Pursue the consolidation of research institutions and provide incentives for private investment in innovation

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Research and innovation capacity	Improve research and innovation capacity and the ability of Latvian research institutions to attract external funding, by investing in human capital and infrastructure
RTDI activities in the private sector	To increase investments of private sector in R&D

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
301.3	4th	997.7	229	760	30%
			EE, LV, LT (highest on the left)	EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
GERD as a percentage of GDP	0.69 (2014)	EU-28, EE, LT, LV	↑ 25.4% (2007-2014)	EE, LT, LV, EU-28	0.8	EE, LT, LV
BERD as a percentage of GDP	0.25 (2014)	EU-28, EE, LT, LV	↑ 38.9% (2007-2014)	LV, LT, EE, EU-28	0.3	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
GERD as a percentage of GDP	2.1%	EE, LV, LT	0.7%	EE, LV, LT
BERD as a percentage of GDP	0.9%	EE, LT, LV	0.3%	EE, LT, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	**+**
Low-medium	
Low	

LATVIA - ICT sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Accessibility to broadband and high-speed internet	To improve accessibility of the electronic communication infrastructure in rural areas
Development of electronic public administration services and reuse of public sector information	To ensure increase in the re-use of public data and efficient interaction of the public administration and the private sector

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
172.8	9th	207.5	87	104	83%
			LV, LT, EE (highest on the left)	EE, LT, LV (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of households with broadband internet connection type	79% (2015)	EE, EU, LV, LT	↑ 88% (2007-2015)	LV, EU, EE, LT	Quantitative estimation is not available	-
Share of households with a broadband internet connection type (sparsely populated areas)	67% (2015)	EE, EU, LV, LT	↑ 191% (2007-2015)	LV, LT, EU, EE	Quantitative estimation is not available	-
Share of individuals using the internet to interact with the public authorities	52% (2015)	EE, LV, EU, LT	↑160% (2007-2015)	LV, EE, LT, EU	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Share of individuals using the internet to interact with the public authorities	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LATVIA - SMEs sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
SMEs productivity and export	To increase export proportion of high value added products and services
	Facilitate formation and development of SME's in particular in manufacturing and RIS3 priority industries
	To increase number of high growth enterprises
Entrepreneurship and regional growth	To increase the amount of private investment in the regions, by making investment for entrepreneurship development according to the economic specialization of territories set in the municipal development programs, as well as based on the local entrepreneurs' needs

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
296.5	6th	2 282.9	149	1 149	13%
			EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Real labour productivity per hour worked	32 percent of EU-28 average (2013)	EU-28, EE, LT, LV	↑ 78.7% (2002-2013)	LV, LT, EE, EU-28	40 percent of EU-28 average	EE, LT, LV
			↑ 6.3% (2007-2013)	LT, EE, LV, EU-28		
Total export as a share of GDP	58.8% (2015)	EE, LT, LV, EU-28	↑ 52.7% (2007-2015)	LT, LV, EE, EU-28	61.4%	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Real labour productivity per hour worked	1.0%	EE, LV, LT	1.0%	LV, EE, LT
Total export as a share of GDP	-0.1%	LV, EE, LT	0.1%	All three equal

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	
Low-medium	+
Low	

LATVIA - Energy sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Greenhouse gas emissions not more than 17 percent higher, compared to 2005 levels. Renewable energy (in % of gross final energy consumption): 40 percent. Energy efficiency (primary energy consumption levels in 2020 expressed in Mtoe): 5.37.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Energy consumption and renewable energy	To promote the increase of energy efficiency in public and residential buildings
	According to the integrated development programme of the municipality, to facilitate the increase of energy efficiency in municipal buildings
	To promote effective use of energy resources, reduction of energy consumption and transfer to RES in manufacturing industry
	To promote energy efficiency and use of local RES in district heat supply

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
368.6	5th	621.3	186	313	59%
			LT, EE, LV (highest on the left)	LT, LV, EE (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Total final energy intensity (kgoe/EUR 1000 of GDP)	188.4 (2014)	EU-28, LT, EE, LV	↓ -4.2% (2007-2014)	LT, EU-28, EE, LV	165	LT, EE, LV

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of renewable energy in gross final energy consumption	38.7% (2014)	LV, EE, LT, EU-28	↑ 31% (2007-2014)	EE, EU-28, LT, LV	39%	LV, EE, LT
GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[159])	2.44 (2013)	LV, EU-28, LT, EE	↓ -0.4% (2007-2013)	EU-28, EE, LV, LT	2.4	LV, LT, EE

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Total final energy intensity (kgoe/EUR 1000 of GDP)	-1.4%	EE, LV, LT	-0.5%	EE, LV, LT
Share of renewable energy in gross final energy consumption	0.1%	EE, LT, LV	0.04%	EE, LT, LV
GHG emissions intensity of energy consumption (Thousand tonnes / Thousand TOE[160])	-0.3%	LT, LV, EE	-0.1%	All three equal

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	
Medium	
Low-medium	+
Low	

[159] Tonnes of oil equivalent (TOE).
[160] Tonnes of oil equivalent (TOE).

LATVIA – Adaptation to climate change sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Greenhouse gas emissions not more than 17 percent higher, compared to 2005 levels.
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Prevention of climate change induced threats	To prevent the threat of flood and coastal erosion risks in urban areas
	To reduce flood risks in rural areas

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
63.0	11th	127.1	32	64	50%
			EE, LT, LV (highest on the left)	EE, LT, LV (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
N/A[161]	-	-	-	-	-	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
N/A	-	-	-	-

[161] No appropriate indicator was available. The policy area is closely associated with the volume of emitted greenhouse gas. This indicator is used in the Energy and Transport sectors/policy areas. In addition, OPs in the "Adaptation to climate change" sector/policy area are focused on prevention to avoid floods and other natural disasters, but not on activities reducing greenhouse gas emissions.

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	**+**
Medium	
Low-medium	
Low	

LATVIA – Environment and resource efficiency sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Water supply and wastewater treatment	To develop and upgrade the quality of water supply and sewerage system services and to ensure connection possibilities
Biodiversity	To preserve and restore biodiversity and to protect ecosystems
Cultural and natural heritage	To preserve, protect and develop important cultural and natural heritage, as well as to develop related services
Waste management	To increase re-using, recycling and regeneration of various sorts of waste
Complex revitalisation of areas	Promotion of revitalisation of urban areas in Riga, ensuring efficient socioeconomic use of the area
	Revitalisation of territories through regeneration of degraded territories according to municipal integrated development programmes
Environmental monitoring	To ensure the development of environmental monitoring control system and timely prevention of environmental risks, as well as participation of the society in environmental management

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
560.1	2nd	3 311.1	282	1 667	17%
			LV, LT, EE (highest on the left)	EE, LV, LT (highest on the left)	LT, LV, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Recycling rate of municipal waste	8% (2014)	EU-28, EE, LT, LV	↑ 60.0% (2014-2007)	LT, LV, EE, EU-28	Quantitative estimation is not available	-
Sufficiency index (terrestrial sites) of habitats directive	90% (2012)	EE, LT, LV, EU-28	↑ 1.1% (2006-2012)	EE, LT, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Recycling rate of municipal waste	Quantitative estimation is not available	-	Quantitative estimation is not available	-
Sufficiency index (terrestrial sites) of habitats directive	Quantitative estimation is not available	-	Quantitative estimation is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LATVIA - Transport sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	No recommendation relevant

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Sustainable / public transport	To develop EV charging infrastructure in Latvia
	To develop the infrastructure of environmentally friendly public transport
	To promote security and compliance with environmental requirements at Riga International Airport
TEN-T network	To ensure a competitive and environmentally friendly TEN-T network promoting its safety, quality and capacity
	To connect infrastructure of major cities with the TEN-T network
Mobility in other neworks	To increase security level in large ports and improve the mobility of the transport network
	To ensure necessary infrastructure on main flyovers of Riga and to prevent fragmentary nature of main streets
	To reconstruct the pavement of state main roads increasing bearing capacity
	To increase regional mobility through improvement of the quality of state regional roads

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
1271.7	1st	5491.0	640	2765	23%
			LV, EE, LT (highest on the left)	EE, LV, LT (highest on the left)	LV, LT, EE (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)	0.73 (2013)	LV, LT, EU-28, EE	↓ -26.5% (2007-2013)	LV, LT, EU-28, EE	Quantitative expression is not available	-
Passenger cars (%) in total inland passenger-km	77 (2013)	LV, EU-28, EE, LT	↓ -2.6% (2007-2013)	LV, EU-28, LT, EE	Quantitative expression is not available	-
Number of people killed in road accidents (per 100 000 inhabitants)	10 (2015)	EE, LT, LV	↓ -55.1% (2007-2015)	LT, EE, LV	Quantitative expression is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Greenhouse gas emissions from transport in Baltic States and EU (2007 = 1)	Quantitative expression is not available	-	Quantitative expression is not available	-
Passenger cars (%) in total inland passenger-km	Quantitative expression is not available	-	Quantitative expression is not available	-
Number of people killed in road accidents (per 100 000 inhabitants)	Quantitative expression is not available	-	Quantitative expression is not available	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	
Medium-high	+
Medium	
Low-medium	
Low	

LATVIA - Employment sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	73 percent employment rate
Country Specific Recommendations	Improve the adequacy of social assistance benefits and step up measures supporting recipients in finding and retaining work, including through increased coverage of activation measures.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Opportunities for employers	To improve labour safety, especially in enterprises of hazardous industries.
Capacities of the unemployed and vulnerable groups	To raise the qualification of the unemployed and improve their skills according to the demand of labour market.
	To increase employment of young people not in employment, education or training and to facilitate their participation in education within the framework of the Youth Guarantee
	To prolong preservation of capacity for labour and employment of elderly employees.
Capabilities of labour market services	To create a system of anticipation and management restructuring in labour market, ensuring its connection to the Employment barometer.

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
164.4	10th	867.8	83	437	19%
			EE, LT, LV (highest on the left)	EE, LT, LV (highest on the left)	LT, EE, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Total employment rate	72.5% (2015)	EE, LT, LV, EU-28	↓ 3.6% (2007-2015)	LT, EU-28, EE, LV	70.4%	EE, LT, LV
Share of young people neither in employment nor in education and training	10.5% (2015)	LT, LV, EE, EU-28	↓ 11.7% (2007-2015)	LV, EU-28, EE, LT	11.6%	LT, EE, LV

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Financing to labour market policy measures as percentage of GDP	0.14% (2013)	LT, LV, EE	↑ 40% (2007-2014)	EE, LV, LT	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Total employment rate	1.7%	LV, LT, EE	0.2%	All three equal
Share of young people neither in employment nor in education and training	-0.4%	LT, EE, LV	-0.1%	EE and LT equal, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

LATVIA – Social inclusion sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	Reduction of population at risk of poverty or social exclusion (in number of persons) by 121,000 (at risk of poverty after social transfers and/or living in households with very low work intensity)
Country Specific Recommendations	Improve the adequacy of social assistance benefits and step up measures supporting recipients in finding and retaining work, including through increased coverage of activation measures.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Social services for socially disadvantaged groups	To increase the efficiency of the re-socialization system
	To increase the efficiency of social services, and the professional skills of employees and inter-institutional cooperation for work with persons in risk situation
	To increase the availability of social services at home equivalent to the high-quality services of institutional care and availability of services close to family environment for children and people with disabilities
	Developing the infrastructure of services for family like care of children and persons with disability for independent life and integration into the community
Integration into the labour market	To facilitate inclusion of disadvantaged unemployed people in the labour market
	To facilitate integration of people at risk of discrimination into society and labour market
	To increase the integration of former prisoners into society and labour market

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
187.6	8th	19 973,3	94	10 057	0.9%
			EE, LV, LT (highest on the left)	EE, LT, LV (highest on the left)	EE, LV, LT, (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
The share of people at risk of poverty or social exclusion	32.7% (2014)	EU, EE, LT, LV	↓ 6.9% (2007-2014)	LV, LT, EU, EE	29%	LT, EE, LV
Unemployment of persons less than 25 years old	16.3% (2015)	EE, LT, LV, EU	↑ 50,1% (2007-2015)	EE, EU, LV, LT	Quantitative estimation is not available	-
Employment of persons 55–64 years old	65.5% (2015)	EE, LT, LV, EU	↑ 7.9% (2007-2015)	EU, LT, EE, LV	Quantitative estimation is not available	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
The share of people at risk of poverty or social exclusion	-1.3%	LT, LV, EE	-0.4%	LT, LV, EE

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

LATVIA – Health sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	Improve the accessibility, quality and cost-effectiveness of the healthcare system.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Regionally available, high-quality healthcare services	To support the development and implementation of prior (cardiovascular, oncology, perinatal and neonatal period care and mental health care) health network development guidelines and quality assurance system, especially for improvement of health of people at risk of social exclusion and poverty
	To improve accessibility to health care and health care support persons who provide services in priority health sectors, to inhabitants outside Riga
	Improving access to quality health care, especially to population subject to the social and territorial exclusion and poverty risk, developing the health care infrastructure
	To improve accessibility to qualified health care and health care support personnel
Healthy lifestyle	To improve accessibility to health promotion and disease prevention services, especially to persons who are subject to the poverty and social exclusion risk

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
230.9	7th	7492.6	116	3773	3.1 %
			LV, EE, LT (highest on the left)	EE, LT, LV (highest on the left)	LV, EE, LT (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Standardised death rate (all causes of death) per 100 000 persons	1549 (2013)	EU, EE, LT, LV	↓ 16.1% (2007-2013)	EE, LV, LT, EU	1460	EE, LT, LV

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Healthy life years (absolute value at birth) of females	55.3 (2014)	EU, LT, EE, LV	↑ 0.7% (2007-2014)	LT, EE, LV, EU	55	LT, EE, LV
Healthy life years (absolute value at birth) of males	51.5 (2014)	EU, LT, EE, LV	↑ 0.2% (2007-2014)	LT, EE, LV, EU	52	LT, EE, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Standardised death rate (all causes of death) per 100 000 persons	-0.6%	EE, LV, LT	-0.2%	EE, LV, LT
Healthy life years (absolute value at birth) of females	0.2%	LT, EE, LV	0.1%	LT, EE and LV equal
Healthy life years (absolute value at birth) of males	0.1%	LT, EE, LV	0.0%	EE and LT equal, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

LATVIA – Education, skills and lifelong learning sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	10 percent early school leaving. 34-36 percent of 30-34-year-olds have completed tertiary education.
Country Specific Recommendations	Speed up the curricula reform in vocational education, establish with the involvement of social partners a regulatory framework for apprenticeship-type schemes and increase their offer.

SPOs of the OP

Thematic group of SPOs	SPOs in the OP
Improve early and general education	To improve study environment of general education institutions
	To develop competency- based general education curriculum
	To increase support for general education institutions to develop students' individual competences
	To introduce education quality monitoring system
Improve vocational training	To increase number of fully modernised vocational education institutions
	To increase number of qualified VET students through participation in work-based learning and practice in enterprise
	To ensure conformity of vocational education to European qualifications framework
	To ensure efficient management of VET institutions and improve professional competencies of the involved personnel
Improve higher education	Increase number of modernized study programs of STEM, including medicine and creative industries
	To improve the learning environment of the first level professional higher education STEM, incl. medicine and creative industry, programs
	Reduce fragmentation of study programs and strengthen resource sharing
	To strengthen academic personnel of HEI in strategic specialisation areas
	To ensure better governance in HEI
	To provide support for implementation of requirements of EQAR agency
Improve career and educational guidance, consistency between studies and the needs of the labour market	To improve access to career support for students in general and vocational education institutions
	To increase not registered in SEA NEET youth's skills and promote their involvement into education, measures implemented by SEA within the framework of Youth Guarantee, and NGOs or youth centres
Improve lifelong learning	To develop professional competence of employees

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
516.0	3rd	10 121.9	260	5 096	5.1%
			EE, LV, LT (highest on the left)	EE, LV, LT (highest on the left)	LV, EE and LT equal (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
Share of early leavers from education and training	9.9% (2015)	LT, LV, EU, EE	↓ 36.5% (2007-2015)	LV, LT, EU, EE	Quantitative estimation is not available	-
Tertiary educational attainment in the 30-34 year-olds age group	41.3% (2015)	LT, EE, LV, EU	↑ 60.7% (2007-2015)	LV, LT, EE, EU	Quantitative estimation is not available	-
Employment rate of 15-64 year-olds with at least an upper secondary education	73.2% (2014)	EE, LT, EU, LV	↓ 5.8% (2007-2014)	EU, LT, EE, LV	73%	EE, LT, LV
At least an upper secondary educational attainment in the age group of 20-24 year olds	86.2% (2015)	LT, LV, EE, EU	↑ 8.3% (2007-2015)	LV, EU, LT, EE	91.6%	LT, LV, EE
Level of lifelong learning	5.1% (2015)	EE, EU, LT, LV	↓ 27.1% (2007-2015)	EE, EU, LT, LV	6%	EE, LT, LV

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Employment rate of 15-64 year-olds with at least an upper secondary education	1.6%	LV, LT, EE	0.1%	EE, LT, LV
At least an upper secondary educational attainment in the age group of 20-24 year olds	0.2%	LV, EE and LT equal	0.2%	LV, EE and LT equal

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
Level of lifelong learning	0.3%	EE, LT, LV	0.3%	EE, LT, LV

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	+
Medium-high	
Medium	
Low-medium	
Low	

LATVIA – Institutional capacity of public authorities and administration sector/policy area

Relevance to EU 2020 and Country Specific Recommendations

EU 2020 national targets	No direct targets for the sector/policy area
Country Specific Recommendations	Strengthen the conflict of interest prevention regime and set up a common legal framework for all public employees. Increase the accountability and public oversight of insolvency administrators.

SPOs of the OP

Thematic group of SPOs	SPOs in Latvian OP
Development of human resources	To improve the competence of the staff of courts and law enforcement authorities promote improvement of business environment
	Professional development of public administration for development of better legal regulation in the fields of support to small and medium-sized enterprises, anti-corruption and mitigation of the shadow economy

Financial allocations

CP contribution (EU funding), million EUR	…largest contribution among sectors/policy areas of the OP	Total national investments (from all sources, including EU funding), million EUR	CP contribution (EU funding), EUR per capita	Total national investments (from all sources, including EU funding), EUR per capita	Share of CP funding in comparison to total national investments
17.8	12th	410.9	9	207	4%
			EE, LT, LV (highest on the left)	LT, EE, LV (highest on the left)	EE, LT, LV (highest on the left)

Trends and forecasts of context indicators

Indicator	Value	Ranking (value) (best on the left)	Dynamics	Ranking (dynamics) (best on the left)	Estimations for 2023	Ranking (2023) (best on the left)
N/A	-	-	-	-	-	-

CP impact on context indicators

Indicator	Annual average impact 2014-2023	Ranking (2014-2023) (best on the left)	Annual average impact 2024-2030	Ranking (2024-2030) (best on the left)
N/A	-	-	-	-

Overall CP contribution to attaining the target values of the result indicators in the sector/policy area

	Contribution assessment
High	**+**
Medium-high	
Medium	
Low-medium	
Low	

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