

ANNEX V

Template for programmes supported from the ERDF (Investment for Jobs and growth goal), ESF+, the Cohesion Fund and the EMFF – Article 16(3)

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1. PROGRAMME STRATEGY: MAIN DEVELOPMENT CHALLENGES AND POLICY RESPONSES

Reference: Article 17(3)(a)(i)-(vii) and 17(3)(b)

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A primary objective of the accelerated economic development policy until 2030, set out in the *National Development Programme Bulgaria 2030 (NDP Bulgaria 2030)*, is to accelerate economic convergence within the EU through targeted and focused government support to increase **specialisation in higher technology and research intensive products and sectors**, allowing better and more prestigious positions in global value chains. The

¹ Numbers in square brackets refer to number of characters.

timely technological transformation of the economy and increasing resource efficiency have the potential to shift it to a higher growth path, bringing the standard of living of the Bulgarian citizen closer to the European average.

The implementation of the strategic objectives is foreseen through targeted policies and interventions grouped into five interconnected and integrated development axes, with the first axis “*Innovative and Smart Bulgaria*”. The main focus of this development axis is to **increase the competitiveness of the Bulgarian economy and transform it into an economy based on knowledge and smart growth**.

A basis for innovative and smart development of Bulgaria is the provision of **quality and inclusive education for all**, proactively aimed at evolving **labour market** trends, with a view to enhancing the **quality of skills** and the formation of highly educated, innovative and active individuals capable of being successful as professionals and citizens and thus contributing to their personal well-being, development of society and the sustainable development of all social fields.

Enhancing the role of science in the country’s economy, while providing a favourable environment for realising new products and markets and developing innovative businesses, has the potential to create a high-tech industrial base and to bring the economy to a new and higher growth path. The national priorities set out in the Bulgarian NDP 2030 targeted by OPSE are *PO1. Education and skills* and *PO2. Science and science infrastructure*.

Pre-primary and school education

The EC Report on Bulgaria 2019 in the framework of the European Semester (EC Report on Bulgaria 2019) calls on Bulgaria to **improve the quality, labour market relevance and inclusiveness of education** and training, in particular for Roma and other disadvantaged groups.

The report points out that significant labour force and skills shortages point to the need to **invest more in training and re-qualification**, aligning education with the needs of the labour market. The persistently high level of early school leaving and low educational outcomes underline the need for significant investment, **especially in early childhood education, school and vocational education and training**.

The UN Sustainable Development Goals, and in particular Objective 4 “Quality Education”, indicate that a key priority should be to **ensure inclusive and equitable quality education** and to stimulate **lifelong learning opportunities for all**. In this regard, the findings for Bulgaria are that there is still inadequate education system that does not meet the current requirements: **outdated curricula based on unification and needs from the time of the industrial revolution**, not taking into account the dynamics of the emergence of new professions and specialties, low uptake of non-formal learning opportunities, **a one-size-fits-all approach, non-recognition of the specifics of each child** — every child is a special, undeveloped system of inclusive education for children with special educational needs and minorities, **insufficient level of integration of educational institutions in the market economy**, late career orientation. It is also pointed out that there is a misunderstanding of the term ‘equitable’ — **there is no distinction between equal opportunities and equal/equitable education for all**, regardless of the abilities and the social and educational background and family status of parents, and that young people choose the most attractive or easy specialty, rather than choosing professions according to their personal achievements and interests and employability. According to the findings in Bulgaria, there are unrealistic

expectations for the large and independent role of the education system in forming education, values and culture.

Given the country's negative demographic trends, the level of educational characteristics of the population is a key prerequisite for the quality of human resources. *The EC Report on Bulgaria 2019* states that Bulgaria has invested insufficient resources in pre-school and primary education, which are crucial to laying the foundations for equal opportunities. In 2016, expenditures for these levels of education amounted to only 0.7 % of GDP, less than half the EU average of 1.5 %. In general, expenditures on education as a percentage of GDP is among the lowest in the EU (3.4 % vs 4.7 %).

The *analysis of the socio-economic development of Bulgaria 2007-2017 for the definition of the national priorities for the period 2021-2027, adopted by virtue of Decision No 196/11.04.2019 of the Council of Ministers of the Republic of Bulgaria*, shows the worrying trend, in the last five years, of constantly reducing the scope of pre-primary education. The group **net enrolment rate** for children aged 3-6 is decreasing steadily from the highest figure reached in 2013 (83.6 %) and reaches **78.4 % for the 2018-2019 academic year**. There is a negative trend despite recent reforms in the field, which make pre-primary education compulsory for all children between the ages of 5 and 6. The explanation could partly be sought in the **unregistered external migration of children** in compulsory pre-primary and school age, as well as the inability of the most vulnerable groups to secure the inclusion of their children in early childhood programmes on **purely financial grounds**, due to the fees and hidden costs. Among the likely causes is the limitation of children's physical access linked, on the one hand, to the **closure of kindergartens in small and remote areas, as well as to the scarcity of places in kindergartens in big cities**, as a result of their population concentration. The number of kindergartens in the country decreased by 11.4 % over the last five years, **with 283 closed kindergartens in small and medium-sized municipalities and 47 new kindergartens were opened** (24 in Sofia City). Only the South-Western region, due to the influence of the capital, notes a net increase (+ 3.4 %) in the number of kindergartens in the period, while the opposite is the North-Central Region (-22 %). Participation in early childhood education is crucial, especially for children with low socio-economic status and those, who speak different language from Bulgarian language in home environment. EU Fundamental Rights Agency's survey shows that **only 66 % of Roma children in 4-6 years visit a kindergarten in 2016**. The results of PISA 2012 for Bulgaria show that participation in at least two years of pre-primary education before entering school increases the mathematical results in PISA with an average of 7, reaching 10 for children with lower socio-economic status and 19 points for children speaking other language than Bulgarian in home environment.

The *Analysis of the socio-economic development of Bulgaria 2007-2017* also outlines other significant negative trends, such as: the group net enrolment rate of **grade I to IV pupils** has been steadily decreasing in the last 10 years and over, with **each tenth child not covered** by (otherwise compulsory) primary education in the 2017-2018 school year. Even lower is the scope of **lower secondary and secondary education, reaching 82.6% in the 2017-2018 academic year**, or 17.4% of children in school age are not covered/dropped out of **lower secondary and secondary education**. The demographic challenges and reforms underway in the field of education have led to the closure of more than 1 000 schools since the beginning of the century. The number of pupils during the same period fell by just over 1/3 or around 300 people. **The closure of educational institutions**, especially in small towns, together with other factors such as **social and family reasons, negative attitudes to**

education and lack of motivation, learning difficulties in mastering the school subjects, etc., reflects also on a significant proportion of early leavers from education and training. In 2017, for the first time since 2013, the value of the indicator shows a positive change, reducing to 12.7 % or 1.1 percentage points compared to 2016. This is due both to effective policies of earlier years to reduce drop-out from school and to effective policies taking place in order to include those, who have not completed secondary education, into education and training forms. For the year 2018, the value of ESL rates remains at the level of year 2017— 12.7 %, i.e. no progress is noted in 2018. The highest values of the ESL rate in 2018 were observed in the North-Western Region — 19 % and in the South-Eastern — 22.6 % (these two areas were the same for the whole period 2013-2018).

The share of school dropouts in large cities in Bulgaria is **3.9 % and almost 2.5 times lower than the EU average (9.7 %)**, while the value of the **indicator in rural regions of Bulgaria reaches 27.9 % while it is 10.9 % on average in the EU**. EU Fundamental Rights Agency's survey shows that **7 % of Roma do not visit any level of education and about 45 % of Roma do not complete secondary education**. Although the problem of leaving education and training is addressed with targeted interventions during the period considered, including a special focus on vulnerable groups, where the problem is particularly acute, the evolution of the indicator value and its still high level indicates a need to refine the measures taken and/or to expand their scope. It is still too early to assess the effectiveness of the recent changes in the government's policy in this area.

In recent years there has been a steady trend towards improving the population's educational structure, with an increase in the share of tertiary graduates and a reduction in the number of people with primary and lower education, but the country is still lagging behind the EU average. In **2018, 28.2 % of the population had a tertiary level of education (31.4 % in the EU)** and the relative share of the population with basic and lower education reached 17.4 %. Due to the capital's influence, the best educational characteristics of the population in the country are in the **South-Western region, where the population with tertiary education reaches 39.2 %**. Relatively good indicators for higher education shows the North-Eastern region (26.9 %). **The most disadvantaged in terms of the educational characteristics of the population are North-Western (19.9 %) and South-Eastern (21.7 %) regions**. According to the latest national census, the **relative share of the population in the villages with at least secondary education (40.1 %) is almost twice as lower than the value of the indicator in the towns and cities**. The educational structure of the Roma and the Turkish ethnic communities is a reason for concern, with 93 % and 70 % respectively of the representatives of these ethnic groups not completing their secondary education, compared to about 30 % for ethnic Bulgarians, according to the 2011 census data. Every fourth Roma child and every ninth Turkish child aged 7-15 have never attended school, compared with 5.6 % of children in the Bulgarian ethnic group.

According to the *EC Report on Bulgaria 2019 in the framework of the European Semester (EC Report on Bulgaria 2019)*, despite recent improvements, the early school leaving rate remains high – 12.7 %. It is estimated to **be significantly above the national average among Roma (67 %), in rural areas (27.9 %) and in the North-Western (21.6 %) and South-Eastern (22 %) regions**.

The concentration of disadvantaged students in schools with low performance is relatively high in Bulgaria, driving further the skills gap. Several international surveys confirm that socio-economic status has a significant impact on students' performance. **According to the**

estimations 60 % of Roma pupils study in Roma-majority or Roma-only schools (FRA, 2016). As the most significant factors for educational outcomes indicate the duration of the child being included in pre-primary education, the educational status of parents and language, spoken in the family. The longer the child has visited pre-primary education, the better their educational outcomes are at school. Children who grow up in a low educated parents' environment, and when the language spoken by the family is not Bulgarian, mostly drop out of school. Despite a change in the funding model for kindergartens and schools with concentrated children from vulnerable groups and other measures taken for inclusive education of children and pupils from vulnerable groups, the promotion of ethnic joint schools and desegregation measures remains a challenge. Further investment could help to offset this phenomenon.

The *EC Report on Bulgaria 2019* also states that, in 2016, the level of poverty and social exclusion among people with disabilities was 55.9 %, i.e. 18.4 percentage points higher than for people without disabilities. More than half of people with disabilities drop out of education early and only 34 % have jobs. Their tertiary education attainment rate – 13.5 %, is also very low. Social transfers have a low impact on poverty reduction. Major challenges for the education and training system remain, including **providing quality inclusive education and tackling early school leaving.**

Despite the improvement of the educational structure of the population, there are still worrying signs of the quality of education. In the *Global Competitiveness Report 2017-2018 study of the Global Economic Forum* Bulgaria is ranked 83 in the world (and 26 in the EU, surpassing only Hungary and Croatia) according to the quality of the education system. In addition in the last ten years, the country has declined 19 positions down. **Between 2001 and 2011, Bulgaria falls from the 4th to 22nd place in the International Reading Skills Survey of the 4th grade students PIRLS**, and is between only the four countries showing a net decrease in results in the decade. Although the performance of Bulgarian students is improving in the last survey in 2016, when the country moves up to the 14th place, the achievements of the beginning of the century cannot yet be reached. Similar trends are also observed in the presentation of the country in the International Study “Trends in International Mathematics and Science Study”, **TIMSS**. The average mathematical result of the Bulgarian students notes a sharp decrease in the period 1999-2007, partly compensated in the latest edition of the survey (2015). The results of the Organisation for Economic Cooperation and Development (OECD) Programme for International Student Assessment (**PISA**) survey conducted in 2018 show **that 47 % of 15-year-olds are functionally illiterate, 46.5 % are with achievements below the critical threshold in the field of science and 44.4 % are under-skilled in mathematics, and the gap compared to the EU is more than double in all areas of the survey. Moreover, the achievements of Roma students and Turkish ethnic backgrounds shows a significant gap with ethnic Bulgarians equal to 3 education years in terms of reading and 2 years in terms of mathematics and sciences.**

In the *2019 Education and Training Monitoring*, the *EC* indicates that the workforce in the education sector is ageing, which generates a shortage of teachers. **Almost half of the teachers are over the age of 50** and are likely to reach the retirement age within the next 10 years; **10% are already older than 60.** A shortage is emerging and it is expected to deepen. **This applies in particular to teachers in kindergartens and primary teachers, language teachers, ICT, mathematics, physics and some VET subjects.** The specific need of replacement by subject and educational level is not known, since only recently (with the support of the EU) in Bulgaria has started the creation of an instrument for predictions

regarding the teaching profession. However, even in a declining number of pupils, an acute need to replace large groups of retiring teachers is expected to arise. In addition, **the number of professionals in charge (such as resource teachers, school psychologists, speech therapists, etc.) is also insufficient**, and with the progress of the reform in the field of inclusive education the unsatisfied demand is expected to increase.

A serious problem characterising human resources in the country is the **low level of computer and digital skills**, which hinders the widespread use of ICT and their own services and the achievement of digital growth. Bulgaria continues to lag behind the EU average. According to the Digital Economy and Society Index **DESI in 2017 only 29 % of the population has at least basic digital skills (57 % EU average)**, ranking the country 27th in the EU. **Only 62 % of the population aged 16-74 used the internet at 81 % on average for the EU.** Interventions at all levels of the education system, as well as of the system of qualification and re-qualification of employed, unemployed, disadvantaged people and disadvantaged groups, are necessary to enhance citizens' digital literacy and to avoid so-called digital exclusion.

Despite some slight increase over the last few years, participation in **lifelong learning** remains extremely low and covers only 2.3 % of people aged 25-64 in 2017, while the EU average is 10.9 %, and in the most developed in this respect Nordic countries between 1/4 and 1/3 of the population in this age group are involved in some form of lifelong learning (LLL) every year. The poor participation in the LLL — and hence the low effective offering of LLL opportunities — is an important obstacle to economic growth. On the one hand, almost one in five adults does not have any or has low qualification, and that means low productivity. The absence of adequate opportunities for LLL does not allow to compensate for the weaknesses of the education system to build up the necessary cognitive skills in the newly appointed at work, which — at best — is being caught up at the expense of the employer. Last but not least, there is a significant gap in time between structural changes in the economy and the reaction of the relatively cumbersome general education system. According to a popular study², by 2030, 60 % of the graduates would be employed in professions, which have not even existed at the time when they started their education. In the medium term, this weakness of the general education system is most easily addressed through different forms of LLL, which are far more flexible and, while providing the right incentives for training providers — in due course are addressing the needs of the market.

A problem with LLL is the lack of training systems in **soft skills**, which have a positive impact on the labour process and effectiveness. According to an Eurostat survey, in Bulgaria, people have mainly basic skills in this field, and they are seriously lagging behind the average in the Community. For example, only 45 % (2017) of the population has above the basic level of knowledge and processing skills, while the EU average is 68%. Although these figures are higher in the case of young people aged 16-24, the gap remains more than 20 percentage points of the EU average, which most probably makes it difficult to find suitable work or training in the higher education system.

In recent years, attempts have been made to integrate modern technology into the learning process, but the experience is contradictory. For example, from the academic 2018-2019 year, electronic textbooks are available to pupils of first to seventh grades, but electronic books are

² McLeod, Scott and Karl Fisch, "Shift Happens".

themselves scanned copies of paper books and are free of charge, however the e-readable versions of the textbooks which, in addition to the learning material, include interactive games and exercises, which remain paid, with all the ensuing negative consequences in terms of equal access to quality education. In 2019, a major ESF funded project on the introduction of digital education in a school started — “**Education for tomorrow**”, which aims at creating a single cloud environment in the education process with an implemented platform for educational services and content, the creation of digital educational content and the upskilling of teachers and pupils for its use.

Although measures have been taken in recent years to modernise the education system (such as the successive inclusion of information technology training into pupils’ curricula in the first, fifth and seventh grades), there are still no concrete results in the overall performance of the country, which calls for a thorough critical analysis of the effectiveness of the reform undertaken, with a focus on its results.

According to the *EC Report on Bulgaria 2019*, the introduction of a revised curriculum focusing on digital skills is underway. However, available data show that there are **still significant gaps in the acquisition of basic and digital skills and knowledge of the Bulgarian language**. These circumstances call for additional investments and policy measures in improving basic and digital skills. Career guidance centres were set up with European Social Fund support but the provision of career guidance and individual approaches to every school student require strengthening.

Vocational education

Social and economic analysis data on NUTS Level 2³ regions show that vocational education and training (VET) in the school year 2018/2019 takes place in 21 art schools, 25 sport schools, 359 vocational and 25 vocational colleges with post-secondary education. The total number of schools is 430 and the total number of school students in them is 136 229. In comparison with the school year 2014/2015, vocational schools have fallen by 51, with at the most a reduction in the vocational secondary schools. In 2018, secondary education in the arts, sports and vocational schools with a diploma graduated 23 thousand people. Vocational secondary schools are mainly located in the regional centres and in larger municipalities, where the higher number of pupils is concentrated.

The number of trainees in vocational education and training is higher than that of learners in the general education system. In 2017, VET learners are 117 130 learners, which represents 51.7 % of the total number of students in the secondary education system. But this is a decrease compared to 52.5 % in 2012.⁴

The NDP 2030 states that the **trend of a decrease in the relative share of VET learners**, although still higher than the EU average, continues. **Every fourth school student in the last grade in vocational schools does not complete secondary education at the ordinary or corrective session of the national university examinations, as well as each second school student, studied in programmes to acquire the second degree of professional qualification. One out of three school students graduate without the acquired**

³ See: <httpswww.eufunds.bg/bg/oprd/node/2816>

⁴ According to Cedefop in cooperation with the Bulgarian team of ReferNet (2018). Vocational training in Bulgaria, <http://data.europa.eu/doi/10.2801/728903>

professional qualification and the employment rate of recent VET graduates (64.2 %) is 10.8 percentage points below the EU average.

The analysis of the effectiveness of the existing state of the VET system, BG051PO001-3.2.03 “Management for effective vocational education”, the MES shows that vocational education appears to be the subject of educational attainment in general and in profiled secondary education with regard to several key factors: overall, it is increasingly less prestigious and increasingly difficult to complete.

In Bulgaria, VET is mainly implemented in the school education system. Since 2015, as well as many other EU Member States, Bulgaria focuses on promoting learning through work (dual learning system), enabling learners to gain real work experience, familiarising them with skills demanded by employers and with skills that would facilitate their realisation on the labour market. The availability of dedicated and competent teachers, trainers, mentors and other VET professionals is essential to ensure its high quality.

Although legislation promotes dual learning and new curricula and dual vocational education curricula for school year 2017/18, the implementation of dual training at this stage is mainly realised within different projects.⁵

In the 2017/2018 school year, 1 742 pupils in 79 classes in 45 vocational schools were involved in a dual training system.

The main challenges for VET in Bulgaria have traditionally been linked to: **insufficient compliance of VET with business requirements and needs; insufficient flexibility of the system to address early school leaving** prior to obtaining a professional qualification; **lack of flexible opportunities to re-enter vocational training**, lack of a system to increase the competences of professional teachers to work in an increasingly digitalised and technology-enabled environment. A positive trend of the last two years is the active participation and commitment of representative employers’ organisations at national level, as well as a number of industry organisations to increase the profile of VET. In this regard, social partners will be recognised as a key partner in the development of policies and measures to improve the recognition and enforceability of VET, including the dual form of training.

According to the findings of the *2019 EC Report on Bulgaria*, **the employability of graduates with vocational education and training remains a challenge**. While the share of students in vocational education and training in Bulgaria is slightly above the EU average (51.3 % compared to 49.3 % in 2016), their employability is 17.1 percentage points lower. This may be partly due to **low participation in work-based learning schemes** (only 22 % of vocational education and training graduates aged 15-34), the lack of universal career guidance from the earliest age and the slow uptake of vocational education and training, **only 1 % of students in vocational secondary schools participated in such dual programmes in the school year 2017/2018**.

Most learners go to a vocational education programme at the age of 14 (7th grade). Since for general and vocational education currently the same compulsory matriculation exam should be passed, the main factors in the choice of VET are family traditions and personal preferences. Career guidance is still evolving and does not have a real influence on the choice of learners. On the other hand, the choice of a profession must be responsible and informed.

⁵ According to Cedefop in cooperation with the Bulgarian team of ReferNet (2018). Vocational training in Bulgaria, <http://data.europa.eu/doi/10.2801/728903>

For that purpose, children should be given the opportunity to familiarise themselves with different professions and recognise their future development path.⁶

In the *Education and Training Monitoring 2019*, the EC points out that the employment rate of recent VET graduates has increased significantly in 2018 (66.4 % compared to 2017 (59.1 %), however in 2018 it is well below the EU average of 79.5 %.

According to the *Council Recommendation (2019/C 301/02)*, the relevance of vocational education and training to the labour market and the availability of dual vocational education and training remain insufficient.

Tertiary education

According to data from the Analysis of the socio-economic development of Bulgaria 2007-2017 in 2018, **24.9 % of the working age population has attained a tertiary level of education, increasing by 6.4 percentage points since 2007**, however, the country is increasing its lag towards the Community, because the recorded improvement of the EU average is 8 percentage points reaching 28.5 %. The achievement of the national target for 2020 of 36 % of tertiary graduates in the 30-34 age group is still a challenge, **with a value of 33.7 % in 2017**. At the same time, **the relative proportion of the low educated working-age population decreased from 28.7 % (in 2007) to 21.3 % (provisional data for 2018), remaining significantly lower than the European average (25.6 %).**

The best educational characteristics of the population in the country are the **South-Western region, where the population with tertiary education reached 39.2 % in 2017**, significantly surpassing the EU average. The **North-Eastern region** is with relatively good indicators for higher education (**26.9 %**). The worst performing indicators are in **North-Western and South-Eastern region, respectively, where only 19.9 % and 21.7 %** of the population aged 25-64 have completed tertiary education by 2017.

The working-age population in **predominantly rural areas is characterised by a declining share of higher education (from 11.1 % in 2007 to 8.1 % in 2017)**, while at EU level the proportion of the high-educated population in predominantly rural areas is increasing (by 4.9 percentage points over the period) and up to 20 %. At the same time, the **low educated labour force in the villages increased its share to 39.4 % (compared to 38.3 % in 2007), with a clear reduction in EU of up to 27.6 %.**

Also, according to the *Education and Training Monitoring 2019*, *the enrolment of disadvantaged students is still low.*

The tertiary education system in Bulgaria covers 51 higher education institutions, the vast majority of which are relatively small and highly specialised. **Fewer than 1/2 of students develop career in the profession concerned. There is a shortage of skilled ICT staff, pedagogical and engineering and health professionals in the labour market.** The number of graduates in science, technology, engineering and mathematics or related studies is 13.730 per 1 000 inhabitants aged 20-29, compared to 18.7 per 1 000 inhabitants in the EU on average in the EU. The reasons for this are to some extent due to the initiation of many economic and humanitarian specialties over the past 10 years, which are more attractive to

⁶ According to Cedefop in cooperation with the Bulgarian team of ReferNet (2018). Vocational training in Bulgaria, <http://data.europa.eu/doi/10.2801/728903>

students because of the traditional prestige of the profession or for other reasons. This trend has led to an increase in the number of students in the ‘humanitarian sciences’ and ‘social, economic and legal sciences’ fields, for which there is no demand on the labour market, at the expense of the number of professional backgrounds in the field of ‘Natural sciences, mathematics and computing’ and ‘Technical science’.

QS World University Ranking 2019, one of the most prestigious global rankings of the world’s best schools, **includes only one Bulgarian university, Sofia University “St. Kliment Ohridski”** with a drop in its ranking registered for the last 6 years from the Group of Universities ranked at 650-700th place, down to the last university group ranked at **800-1 000th place**.

The highly fragmented system of tertiary education has low and decreasing efficiency of investment in the sector, in the absence of real incentives to improve the quality and relevance of the offered educational programmes .

As stated in the *2019 EC Report on Bulgaria*, higher education is not sufficiently tailored to the needs of the labour market. **In the period 2012-2017, the number of students in higher education dropped by 17 %** as a result of demographic factors and students’ preference to study abroad. Tertiary education graduates share is increasing but remains below the EU average (**33 % in 2017 compared to 40 %**). Enrolment of students in ICT-related fields is increasing, but the overall **attractiveness of science, technology, engineering and mathematics has not increased significantly** and tertiary education attainment rates remain low (**19.7 % in 2016**). Employers often identify knowledge and skills deficiencies, in particular the lack of soft skills among graduates (*CEDEFOP, 2018*).

According to the *NDP Bulgaria 2030*, increasing coherence between the needs of businesses and society on the one hand and programmes in higher education and vocational education and training on the other will remain a key aspect of policies. Closer cooperation and communication between the private and public sectors in the learning process and research activities will be encouraged. These activities will also be key to improving the quality of higher education, enhancing their role in generating innovative research and stimulating the relevance of curricula in a global context.

Science and research

The primary objective of the policy on science and science infrastructure in the *NDP Bulgaria 2030* is to build high quality research infrastructure and to step up the research ecosystem, stimulate and accelerate the process of developing and deploying innovation in the various sectors of the economy, with the key role of education and scientific institutions, research centres and business and the relationship between them. The focus will be on cooperation between industry and research units, the career development of high-tech professionals and researchers, the stimulation of applied scientific development and measures for their commercialisation and their transformation into high value added market products.

The *Analysis of the socio-economic development of Bulgaria in the years following its accession to the European Union (EU) approved by Decision No 196/2019 of the Council of Ministers (SEA)* shows that the Bulgarian research system is extremely fragmented, especially in comparison with systems in the EU. **Fragmentation is most visible in the tertiary education sector. Out of the total number of 51 tertiary schools, on average some ¼ tertiary education institutions are active in research** and promote it with measures

and activities at institutional level or participate in national and international research programmes.

State support in the form of R&D expenditure during the first 10 years following Bulgaria's accession to the EU **has steadily decreased from 0.29 % to 0.2 % of GDP**, three times lower than the EU average (0.64 %). In 2017 Bulgaria ranks 27th in the EU.

R&D resources and expenditures are unevenly distributed across the country and a **significant R&D resource (69 % of the costs in the business sector) is concentrated in the South-Western region in 2016**. On the opposite pole is the North-Western region, where only 3.5 % of total R&D expenditure is spent in the public sector, and the funding by enterprises for scientific products is 4.5 % of the total costs of enterprises in the country. In the North-Central Region, 0.2 % of the costs of the public sector and 5.3 % of the costs of the enterprises are concentrated; in the South-Eastern region 2.7 % of the costs to the public sector and 4.9 % of the costs of the enterprises are concentrated.

The 2017 review of the necessary equipment for carrying out research in Bulgaria shows: **uneven territorial and thematic distribution of the research units in the absence of enough modern research infrastructures; low participation of universities therein; inefficient management of existing research facilities, lack of workload and maintenance, including from business and international organisations and lack of resources and lack of skilled staff** to support scientific equipment; financial instability and **inadequate involvement of the private sector**.

The *NDP Bulgaria 2030* states that in 2017 the **researchers were almost twice as low as a share of the workforce in Bulgaria compared to the EU**, placing the country 23rd. The country ranks 23rd in the EU on the ability to retain and attract talent to the *Global Competitiveness Index*. In the *Global Innovation Index*, Bulgaria ranks second to last in the EU in human capital and research, with problematic areas in this regard being quality of higher education (26th place), research and gross expenditure for research (24th place), as well as the ranking by prestige of universities (25th place). The quality of the research infrastructure is assessed in a similar way by the *Global Competitiveness Index*, ranking the country 24th in the EU. The conclusion of the *European Commission's Research and Innovation Observatory* in its 2017 Annual Report on Bulgaria is that the **normal functioning of the sector requires a doubling of the employed staff and further optimisation of its structure towards an increased presence of the private sector and universities**.

According to the *Web of Science* data in recent years, Bulgaria continues to have weak positions in terms of the number of internationally visible scientific publications. **The share of scientific publications from Bulgaria included in the top 10 % of the most cited publications has decreased almost twice from 2008 to 2015, from 6.5 % to 3.5 % respectively**. The *European Innovation Scoreboard* places Bulgaria, as the last place in the EU on **international scientific co-publications** and 26th on the indicator public-private co-publications. The *Global Competitiveness Report* assesses the interconnection between higher education institutions and the industry in Bulgaria, putting the country 21st in the EU with a marked positive trend for improvement over the last decade.

In the *NDP Bulgaria 2030* it is indicated that Bulgaria is still ranked in the “**modest innovators**” group. According to the 2017 *Global Innovation Index*, Bulgaria ranks 23rd in relation to the other EU Member States. The sub-indicators in which the country presents the

weakest are “**Human Capital and Research**” and “**Institutions**” (27th and 26th place respectively). Between 2006 and 2016, investment in fundamental research fell from 0.12 % of GDP to 0.07 %. Applied development increases its funding from 0.23 % to 0.5 % of GDP, driven mainly by the private sector. The European Commission’s *European Innovation Scoreboard* for 2017 ranks Bulgaria in the penultimate place in the EU after Romania.

According to the assessments made in the *SEA (CMD No 196/2019)* as a result of the poor conditions for the development of the potential of researchers in Bulgaria, **the country’s participation in the Seventh Framework Programme is relatively limited, calling the country of the 20th position in the EU on a number of participants (700) and a share of the budget under this programme as of 2014.** The country profile as regards the **Horizon 2020 FP is improved, where the participation of Bulgarian researchers is the penultimate place in Central and Eastern Europe by number and scientific contribution and at 24th place by allocations.**

According to the *NDP Bulgaria 2030* there is a **need to provide institutional support to both the public and private sectors to fully involve them in programmes and projects co-financed by the EU, especially Horizon 2020 and Horizon Europe.** There is still low participation of young people in scientific projects, there is a lack of incentives to encourage young scientists and measures to develop interest in science among children in order to build capacity and interest from early childhood. There is a strong need to further support the integration of Bulgarian science and research into the European Research Area. Specific measures should be developed aimed at training companies to participate in research projects and subsequent framework programmes. The country should also support the inclusion of more Bulgarian evaluators under the programmes directly financed by the European Services. OPSE should also support the strengthening of the capacity of the newly created State Agency for Research and Innovation, which can be actively involved in the process to support the development of the scientific potential of young scientists and enterprises.

The *National Strategy for the Development of Research in the Republic of Bulgaria 2017-2030* sets out the 2030 vision for Bulgaria to deploy a modern and sustainable research infrastructure to deliver high quality research and training, focusing on the RIS3 priority areas, to ensure that researchers have access to a key unique scientific infrastructure. A key instrument for concentrating resources on the development of strategic infrastructure for the country is the **National Roadmap for Scientific Infrastructure**, which provides co-financing for the establishment and development of major scientific complexes.

Council Recommendation for Bulgaria 2019 (2019/C 301/02) indicates that despite the increase in the public budget for research in 2018, expenditure on research and development (R&D) remains very low both in the private and public sector. **Private investment in R&D is a monopoly of large multinational companies and is concentrated in the capital region. The slow pace of implementation of reforms and the large fragmentation of the R&D and innovation system** do not allow R&D investment to contribute to productivity and growth. A large number of universities and research institutes are still underrepresented in high quality research. **Cooperation between science and business remains very limited and the lack of human capital in the R&D system is a source of serious concern.** Country Specific Recommendation 3 recommends Bulgaria to focus the economic policy related to investment, **research and innovation**, transport, in particular its sustainability, water, waste and energy infrastructure and energy efficiency, **taking into account regional differences and improving the business environment.**

Over the period 2014-2020, under the ERDF, OPSESG established and funded six centres of excellence (CoEs), including two CoEs with joint funding under Horizon 2020 and ten centres of competence (CoCs). One of the main challenges on administrative capacity and governance is the need to continue the support for building capacity to manage financed research infrastructure in the CoEs and CoCs, to develop applied research, to achieve commercialisation of research results, to enhance cooperation with business.

The results of the interim evaluation of the RIS3 2014-2020 show that most companies tend to cooperate with universities in Bulgaria (70 %) and abroad (52 %), BAS (52 %) and university science complexes (52 %). Willingness to cooperate with science and technology parks in the country or abroad, as well as with centres of excellence and centres of competence, is also high (expressed as between 40 % and 50 % of the companies for each category). The data show the potential available to foster cooperation between universities, research institutions and enterprises by supporting technology transfer and commercialisation of research results.

The experience of the 2014-2020 programming period shows that a competitive approach should focus on short-term applied research and the choice of strategic investments should not be based on market principles and current competitive advantages, but should take into account long-term needs and trends in order to take into account the ability of a research ecosystem to function in a network and achieve economies of scale. On the basis of lessons learned in the next programming period, key, strategically defined research infrastructures need to be supported. This will build on the achievements of the 2014-2020 programming period, including by building on the established CoEs and CoCs and support the development of applied research, commercialisation of research results, a link to regional innovation potential, as well as increased cooperation with business will be ensured.

A strategic starting point for interventions in support of research infrastructure and research should be the priorities of the Innovation Strategy for Smart Specialisation 2021-2027. Within the priority thematic areas, including: “Mechatronics and Clean Technologies”, “Informatics and ICT”, “Healthy Life and Biotechnology Industry” and “New technologies in creative and recreative industries” will be to support strategically defined research infrastructures. In the field of applied research and strengthening cooperation between universities, scientific institutions and businesses, it is necessary to reflect the new horizontal areas, including the circular economy, industrial transition and the extension of measures to promote the digitalisation of enterprises, with a focus on technologies introducing Industry 4.0 and measures targeting healthcare.

Programme strategy:

Based on the identified needs, the programme will focus on:

- A more comprehensive coverage of children in pre-primary education and the primary stage of school education, including a more comprehensive coverage of children in kindergartens from the age of 4;
- Comprehensive inclusive education in basic and secondary education, through general and additional support for personal development, early diagnosis of learning difficulties and a tailored approach focusing on the support of children and pupils from vulnerable groups, including those whose mother tongue is different from Bulgarian, and measures aimed at reducing the rate of early school leavers;

- Equality and the creation of equal opportunities for quality education, by ensuring mobility and transition between the different stages of education, prevention of harassment, reduction of aggression in schools and desegregation and anti-discrimination measures;
- Enabling access to education by addressing regionally specific demographic, social and cultural barriers, including increased work with parents of children and pupils from vulnerable groups;
- Ensuring the quality of inclusive education, through the modernisation of learning content, introduction of a competence-model and the upgrading of skills, digital transformation of education, with opportunities to broaden the range of distance learning, promoting excellence in education, supporting talented children and school students with outstanding talents, innovative curricula, innovative classrooms and innovative schools, programmes to introduce intercultural education in school and pre-school education;
- Promoting creativity and innovation and the use of digital tools and devices in early age education;
- Providing access to career guidance for children and adolescents, including as a means of preventing school failure, absenteeism, dropping out of school, anti-social behavior of children and students;
- Ensuring flexible planning of vocational education and training, adequately reflecting changing labour market trends, including the development of digitalisation and technology, the future of occupations and new forms of organisation and the development of the labour market, demographic trends and trends towards a green economy and sustainable development;
- Improving the quality and relevance of vocational training and education with regard to labour market needs, and its link to specific regional characteristics, taking into account global, national and sectoral trends, by modernising the content, introducing flexible pathways and forms of learning, increasing participation in work-based learning, increasing the share of dual learning in VET, addressing the link between education and sport, including dual careers, and the creation of graduate tracking schemes, adult literacy, inclusion in education and training for those who have not completed secondary education, and the validation of knowledge, skills and competences, taking into account local needs and economy. Strengthening the link between VET and higher education and science and the creation of common learning spaces — VET, HE and science – business as well as participation in regional, sectoral, national and European networks;
- Enhancing the attractiveness and accessibility of VET for all ages, including by developing individual training pathways and opportunities for online trainings;
- There will be a horizontal support to increase the skills, capacity and continuous qualification of teachers and education leaders/managers in pre-school and school education, vocational education and training, including adult learning, with a focus on professional teacher training, digital competences, working with children and students with problem behaviour and with those from vulnerable groups, including updating curricula for teacher education in higher education institutions;

- Increasing the relevance of higher education to the needs of the labour market through graduate tracking systems, career guidance, student practices and the transition to a dual training system in higher education, including through a strengthened partnership with nationally representative employers' organisations;
- Modernisation of higher education, by changing the training documentation, introducing a competence-approach, digital transformation and strengthening the link with science;
- Internationalisation of higher education, by ensuring the circular and incoming mobility of teaching staff and students;
- Consolidation of higher education, through participation in national and European networks, joint study programmes and sharing of resources;
- In order to increase the competitiveness of the Bulgarian economy and transform it into an economy based on knowledge and smart growth, key, strategically defined research infrastructures, market-based research infrastructures and internationalisation will be supported, including by ensuring synergies and supporting Bulgarian participation in the Horizon Europe Framework Programme of the EU. The focus of the programme will be on:
 - Enabling the improvement of research capacity aimed at results through the modernisation of scientific infrastructure, the improvement of working conditions and mobility of scientists, the internationalisation of research;
 - Support for skills development in universities and research institutions in order to increase the commercial viability and the market relevance of research projects;
 - Enhancing cooperation between universities, scientific institutions and enterprises by supporting the transfer of knowledge, technology and the commercialisation of research results.
- In order to ensure market efficiency and financial sustainability of investments, financial instruments will be used, in line with the ex-ante evaluation of financial instruments.

For Jobs and growth goal:

TABLE 1		
Policy objective	Specific objective or dedicated priority*	Justification (summary)
PO 1	<i>ERDF</i>	[2 000 per specific objective or dedicated priority]
A smarter Europe by promoting innovative and smart economic transformation	<i>1.1 Enhancing research and innovation capacities and the uptake of advanced technologies;</i>	The impact of OPSE investments as complementary national interventions will be sought towards enhancing the quality of research infrastructures and modernization of research infrastructure and equipment, promoting smart specialisation, developing market oriented research, attracting young scientists and internationally established highly qualified scientists, knowledge transfer and internationalisation thereof. Efforts will continue towards capacity building and human resources development in the R&D system, with interventions focusing on increasing

		<p>the attractiveness of research careers and attracting and retaining young scientists and researchers. At the same time, ways will be sought to promote employment in the sector towards strengthening the presence of universities.</p> <p>The focus will be to stimulate applied scientific development with Technology readiness levels TRL 3-6 with a view to their subsequent commercialisation and use, and to translate them into high value added market products.</p> <p>The programme will support the development of young scientists and their development with industrial relevance and promote their inclusion in research projects and teams.</p> <p>The stimulation of scientific activity in the country and investment in science infrastructure will aim at exploiting the local potential and balancing their regional intensity, respecting the identified comparative advantages of the regions and the possibilities for smart specialisation.</p> <p>Implementing measures for the closer integration of the Bulgarian research community in the international one will continue, by increasing the presence of Bulgarian scientists in partnership projects and of Bulgarian patents and research into globally recognised registers, which will bring scientific development in the country to the forefront, in the context of global research trends.</p> <p>In order to improve the R&D environment in the country and further develop the innovation ecosystem, opportunities will be sought to improve the conditions for public-private partnerships in applied research and to accelerate the process of commercialisation of innovation, including on international markets. The priority will remain to further support the integration of the Bulgarian science and research into the European Research Area and to enhance synergies and participation in Horizon Europe, including supporting the activities of the State Agency for Research and Innovation.</p>
<p>PO 4</p> <p>A more social Europe by implementing the European pillar of social rights</p>	<p><i>ESF+</i></p> <p><i>(iv) improving the quality, effectiveness and labour market relevance of education and training systems to support acquisition of key competences including digital skills</i></p>	<p>[2 000 per specific objective or dedicated priority]</p> <p>A focus will be put on adapting and modernising the vocational education and training system to the needs of the labour market and increasing the burden of the dual VET training system.</p> <p>Funding will focus on improving the quality and relevance of school education for achieving professional fulfilment. In this respect, of key importance will be the updating of educational plans and curricula, flexible pathways and programmes for second chance, the acquisition of professional skills, the training of teachers and the introduction of innovative teaching methods, the maintenance of a modern educational environment, the development of partnership formats with business and higher education, effective management of VET, as well as the extension of the geographical scope of the dual training and the increase of the possibilities for its implementation in a variety of occupations adapted to the needs of the business at regional and local level.</p> <p>Support for flexible VET learning pathways will be combined with adult literacy measures, support for dual career development for athletes, career guidance and validation of knowledge, skills and competences in formal education acquired through non-formal learning or informal learning, with a view to providing opportunities for access to the labour market and employability.</p>

		<p>Increasing coherence between business and societal needs on the one hand and programmes in higher education and vocational education and training on the other will remain a key aspect of the policies supported by the operational programme. Closer cooperation and communication between the private and public sectors in the learning process and research activities will be encouraged, as will the involvement of the social partners in shaping and implementing policies in these fields. These activities will also be key to improving the quality of higher education, enhancing their role in generating innovative research and stimulating the relevance of curricula in a global context. In doing so, steps will be taken towards the consolidation of public higher education institutions by providing financial incentives, focusing public support and increasing opportunities for public-private partnerships.</p> <p>The focus will be on the preparation of staff in the professions and specialties that are sought by the business. Support will be linked to the contribution to the labour market and learning outcomes.</p>
<p>PO 4</p> <p>A more social Europe by implementing the European pillar of social rights</p>	<p><i>ESF+</i></p> <p><i>(v) promoting equal access to and completion of, quality and inclusive education and training, in particular for disadvantaged groups, from early childhood education and care through general and vocational education and training, and to tertiary level, as well as adult education and learning, including facilitating learning mobility for all</i></p>	<p style="color: red;">[2 000 per specific objective or dedicated priority]</p> <p>Sustained implementation of policies to cover and include children and pupils in the pre-school and school education system and reduce the share of early school leavers will be continued. In this context, priority will be given to integrated and targeted policies to ensure the right of each child to quality education and to prevent dropping out of school, with a focus on children and pupils from vulnerable groups. They will be implemented with policies and measures aimed at increasing the share of secondary graduates and encouraging young people's participation in formal and non-formal education and training.</p> <p>The programme's support for the achievement of the objectives of the Government's Education and Training Strategy will aim at rethinking the role of the education system in an information society, characterised by rapid access to any information.</p> <p>The support of individual pathways will be aimed at improving access to VET and the individual needs of the learners, especially those who have early left the education system.</p> <p>To address the weaknesses in the quality of the educational service provided and the reform of the education sector, the Programme will strengthen the focus on learning the key competences for lifelong learning (including digital, linguistic, social) from an early age in the framework of the formal education and at the same time to raise awareness of the value of education, training and learning. Important focus in this context is both the acquisition of functional literacy, of relevant (inter)disciplinary and practical knowledge and skills, as well as the development of creative and critical thinking, responsibility and problem-solving, civic engagement, including young people in rural areas.</p> <p>The programme will support the transformation of Bulgarian education by modernising education institutions, improving the quality of education, introducing innovative teaching methods, updating curricula and introducing digital change in learning and teaching, as well as ensuring equal access to quality and inclusive education for all.</p>

*Dedicated priorities according to ESF+ Regulation

For the EMFF:

Table 1A			
Policy objective	Priority	SWOT analysis (for each priority)	Justification (summary)
		Strengths [10 000 per priority]	[20 000 per priority]
		Weaknesses [10 000 per priority]	
		Opportunities [10 000 per priority]	
		Threats [10 000 per priority]	
		Identification of needs on the basis of the SWOT analysis and taking into account the elements set out in Article 6(6) of the EMFF Regulation [10 000 per priority]	

2. SPECIFIC PRIORITIES OTHER THAN TECHNICAL ASSISTANCE

Reference: Article 17(2) and 17(3)(c)

Table 1 T: Programme structure*

ID	Title [300] [300]	Technical assistance	Basis for calculation	Fund	Category of region supported	Specific Objective selected
1	Priority 1 “Quality and inclusive pre-school and school education”	No		ESF+	More	SO 1 <i>ESF + (v)</i>
					Transition	
					Less developed	
					Outermost and sparsely populated	
More						
2	Priority 2 Improving the link of education to the labour market	No		ESF+	More	SO 1 <i>ESF + (iv)</i>
					Transition	
					Less developed	
					Outermost	
More						
3	Priority 3 Scientific Infrastructure and Applied Research	No		ERDF		SO 1 <i>ERDF (i)</i>
4	Priority “Technical assistance”	Yes				NA

..	Dedicated priority youth employment)	No		ESF+		
..	Dedicated priority CSRs	No		ESF+		
..	Dedicated priority Innovative actions No	No		ESF+		
	SO 8	No		ESF+		

** Information on this table will serve as technical input to prefill other fields and tables in the tamplate in the electionic format.
Not applicable to EMFF.*

2.1. Title of the priority [300] (repeated for each priority)

PRIORITY 1 — QUALITY AND INCLUSIVE PRE-SCHOOL AND SCHOOL EDUCATION

<input type="checkbox"/> This is a priority dedicated to a relevant country-specific recommendation
<input type="checkbox"/> This is a priority dedicated to youth employment
<input type="checkbox"/> This is a priority dedicated to innovative actions
<input type="checkbox"/> This is a priority dedicated to addressing material deprivation**

*Table applicable to ESF+ priorities.

** If marked go to section 2.1.2

2.1.1. *Specific objective⁷ (Jobs and growth goal) or Area of support (EMFF) – repeated for each selected specific objective or area of support, for priorities other than technical assistance*

SO V — Promoting equal access to and completion of, quality and inclusive education and training, in particular for disadvantaged groups, from early childhood education and care through general and vocational education and training, and to tertiary level, as well as adult education and learning, including facilitating learning mobility for all

2.1.2. *Interventions of the Funds*

Reference: Article 17(3)(d)(i)(iii)(iv)(v)(vi);

The related types of actions – Article 17(3)(d)(i):

Text field [8 000]

- **Extension of pre-primary and primary education, by supporting the cooperation mechanism of the institutions involved in the coverage and participation in the education system of children and pupils in compulsory pre-primary and school age, including:**
 - Extending the participation of education mediators and coordination of the scope teams;
 - Training and enhancing the capacity and skills of the scope teams;
 - Building and linking tracking systems for travel and migration of the exercise of children's right to compulsory education;
 - Setting up and linking information exchange systems and checking health notes for excuses for children and pupils;
 - Targeted information activities and work with parents to explain the benefits of education and obligations to be included in pre-school and compulsory school education;
 - Promoting the creation of sustainable partnerships between schools, kindergartens and non-governmental organizations to ensure full coverage and prevention of dropping out.

⁷ Except for a specific objective set out in Article 4(1)(c)(vii) of the ESF+ Regulation.

- **General and additional support for personal development in pre-school education, including:**
 - Provision of additional psychologists, pedagogical advisers, speech therapists, resource teachers, sports coaches and other specialists according to the needs of the children, to realise the general and additional support for personal development in kindergartens.
 - Activities of interest to promote the development of personal qualities, social and creative skills and expressions of competence in the fields of science, technology, arts, sport, global, civil, health and intercultural education, education for sustainable development, skills for leadership and work for community and teamwork;
 - Health care by provision of modern health education programmes, healthy diets, first-aid, safe road traffic, training on various sports and others;
 - Early assessment of needs and prevention of learning difficulties; incentives with moral and material awards; activities to prevent violence and address problem behaviour; speech therapy.
 - Training through additional modules for children who do not speak Bulgarian; activities to implement programmes of psychomotor, cognitive and linguistic development; individual and group work in the case of established linguistic and/or emotional behaviour and/or sensory difficulties.
 - An assessment of the individual needs of the child for provision of additional support for personal development and the provision of additional support for personal development;
 - Development of the physical qualities and skills of children through sport;
 - Enhancing language culture and knowledge through the learning of foreign languages from the earliest stages of their life and in all forms and levels of education;
 - Increasing the capacity and skills of teachers; increasing the participation of education mediators in the active inclusion in pre-school education;
 - Enhancing the capacity and skills of directors, teachers and other pedagogical practitioners to form and conduct policies to increase the scope in pre-school education and improve the quality of pre-school education in the specific institution.
 - Enhanced monitoring of the progress of the learning process in the kindergarten, with a view to early warning of early departure of the system;
 - Psychological support and additional Bulgarian language training for children in nursery and pre-school education groups.
 - Provision of specialized support environment in accordance with the needs of the supported educational institutions;
 - Provision of fees for disadvantaged children, work with parents;
- **General and additional support for personal development in school education, including:**
 - Provision of additional psychologists, pedagogical counsellors, speech therapists, resource teachers, coaches by type of sport and other specialists according to needs, in order to realise the general and additional support for personal development in schools;
 - Increasing the capacity and skills of pedagogical and non-pedagogical professionals;

- Enhancing the capacity and skills of directors, teachers and other pedagogical practitioners to formulate and implement policies to increase the coverage in school education and improve the quality of pre-school education in the specific institution;
- Further training and consultation of subjects; career guidance for students; interest activities as a priority in the thematic areas: ‘Digital creativity’, ‘Natural Sciences’, ‘Mathematics’, ‘Technology’, ‘Arts and culture’, ‘Civil education’, ‘Environmental education and health’, ‘Sport’; library information services; health care; provision of a hostel; activities to prevent violence and address problem behaviour; activities to prevent learning difficulties; speech therapy;
- Incentives with moral and material awards for excellence in educational activities, activities of interest and their contribution to the development of the institutional community;
- Assessment of the individual needs of the child and the pupil for provision of additional support for personal development and the provision of additional support for personal development;
- Developing the physical qualities and skills of pupils by providing training in sports and sports activities in schools, providing and implementing sporting activities within the framework of the all-day training of pupils at the primary stage of basic education, the formation of school sports teams by sport and groups for sporting activities, creation of effective school partnerships with sports clubs;
- Career guidance for school students;
- Health care by provision of modern health education programmes, healthy diets, first-aid, safe road traffic, training on various sports, etc.;
- Enhanced monitoring of learning progress in schools for early warning of early departure of the system;
- Provision of a specialized support environment in accordance with the needs of the supported educational institutions;
- **Supporting talented children and school students with outstanding skills, including:**
 - Training in courses, academies, etc. of art and science and training camps for participation in national and international competitions organised by schools, personal development support centres, scientific and creative unions, foundations, associations and companies, sport clubs;
 - Support for participation in national and international competitions, Olympic games and science, culture and sport competitions;
 - Excellence awards;
- **Modernising curricula and content through the introduction of the competence-model as well as the preparation of individual curricula and the individual curricula of pupils with special educational needs and students with outstanding donors, including:**
 - The development of key competences at all educational levels, including by promoting different learning approaches and learning environments, including reading, numeracy, digital literacy, key competences in the fields of science, civic activism, teamwork, career guidance, socio-emotional skills;
 - Developing a programme to work with pupils for whom the Bulgarian language is not the mother tongue;

- Training and enhancing the capacity and skills of educators and non-pedagogical specialists to work with the upgraded learning content, including digital platforms and cloud technologies, for the full use by teachers of different approaches to distance learning;
- Testing of pilot models for working with modernised learning content and programmes, including their introduction to tele-education form; increasing the skills of pupils and teachers;
- Introducing and promoting quality assurance measures through monitoring, analysis and evaluation of education and training.
- **Digital transformation of school education, including vocational education and training, by:**
 - The digitalisation of the open-access learning content;
 - The creation of learning content and the development of digital skills for all educational actors — pupils, teaching staff, students and teachers in higher education institutions;
 - The introduction of digital technologies and the development of digital educational content and innovative approaches through the updating of education and training curricula, the use of ICT-based approaches and methodologies that encourage the modernisation of the learning process;
 - Enhancing the qualification of teachers to work with digital technologies for the introduction of digital forms of teaching in academic subjects and interactive courses and the introduction of innovative teaching methods;
 - Enhancing digital competence and skills of students, including computer modelling;
 - Conducting training on new technologies and acquiring digital competences for teachers and students, conducting information and training campaigns on the dangers of the internet, the negative impact of fake news and the development of social networking skills as a platform for self-expression and participation in decision-making processes;
- **Mobility and transition between the different stages of education, including:**
 - Measures for the validation of knowledge and skills and the inclusion in the education system of pupils who have received education abroad, including the recognition of diplomas and certificates of study abroad in secondary education;
 - Synergy with Erasmus + – mobility of teachers, student mobility, with a focus on socially disadvantaged and vulnerable groups;
 - Support for distance and evening training;
 - Supporting international cooperation and mobility of learners and staff to increase the capacity of education and training providers from early childhood education and care to completion of education;
 - Supporting teacher mobility and adapting to a working environment in different regions and with different groups of pupils through adaptation programmes and social packages for young teachers;
 - Setting up a single electronic application and reception system in subsequent stages of education;

- **Support for innovative curricula, innovative classrooms and innovative schools, including:**
 - Encouraging educational innovation in pre-school education;
 - Innovative qualification of teachers and teacher cooperation;
 - Developing and implementing innovative activities in the organisation and educational content in kindergartens and classrooms;
 - The introduction of innovative forms of governance, training and learning environment, the use of innovative teaching methods, the development of innovative learning content, curricula and educational plans;
 - Exchanges of innovation in education. The establishment of vocational training communities among teachers to further support the implementation and dissemination of good practice;
 - Establish a set of implementation methods and tools to track good practices, to be disseminated at national and international level;
 - Improving educational outcomes, motivation for learning, participation in school life and the development of creative thinking, different competences and emotional intelligence through innovative educational processes, teaching methods, school leadership and new learning strategies.

- **Preventing harassment and reducing aggression in schools, including:**
 - Campaigns for tolerance and reduction of pupils' aggression and impact on internal motivation, as well as psychological support for children and pupils, pedagogical specialists and parents;
 - Support for the use of facilitators in resolving conflict at school, counselling of children or pupils with a psychologist/pedagogical advisor;
 - Increase the competences and skills of teachers to use and implement forms and methods to counter harassment, violence, etc. to work with children and pupils with SEN, work with parents, counter negative events such as aggression/anger — recognition, reasons and prevention.
 - Involving students with problem behaviour in groups for raising social skills for communication and for resolving conflicts in a non-violent way, targeting the child or pupil to activities tailored to their needs; mentoring;
 - Participation of students in school governance and support for volunteering initiatives.

- **Enabling access to education by addressing demographic, social and cultural barriers, including:**
 - Provision of transport;
 - Enhancing the skills of children and students in training and communication in a multicultural environment, including psychological support and further training in the Bulgarian language, the sharing of cultural identity and values;
 - Increasing the capacity of pedagogical specialists and educational mediators to work in a multicultural education environment;

- Encouraging parents to take part in the educational process in a multicultural education environment;
- Promoting inter-school exchange and sharing of educational resources, including joint activities between schools and kindergartens, with concentration of vulnerable groups and those without concentration of vulnerable groups, including exchange visits, excursions, green schools, etc.;
- Support for ensuring access to quality education in small villages and hardly accessible areas;
- **Comprehensive programmes at municipal level for desegregation of schools, prevention of secondary segregation and against discrimination, including:**
 - Prevention and non-discrimination in educational institutions towards trainers and learners, through the preparation of practical guides, information campaigns and training seminars;
 - Promoting desegregation of schools and classrooms, forming a supporting public environment, interschool activities, securing partnership with local communities and the civil sector, further working with pupils in host schools, further working with parents and others;
 - Addressing negative societal attitudes based on ethnic origin and cultural identity (including by conducting information campaigns aimed at preventing discrimination on grounds of race, ethnicity or religion);
- **Access for vulnerable groups to higher education, including:**
 - Conducting candidate student courses for young people from the vulnerable groups;
 - Support for prospective students and students from vulnerable groups by: provision of textbooks and training aids, payment of rent for student dormitories, payment of application fees at higher education institutions, payment of semestrial fees;
 - Support for continued education in post secondary education and in higher education, such as: conducting information campaigns to promote the opportunities and conditions of higher education institutions to host and train young people from the vulnerable groups.
 - Encouraging parents' participation in the education process and the benefits of training and completion of higher education.

List of planned operations of strategic importance- Article 17(3)(d)(i):

Text field [2 000]

- 1. The extension of pre-primary and primary education, by supporting the cooperation mechanism of the institutions involved in the coverage and participation in the education system of children and pupils in compulsory pre-primary and school age;**
- 2. General and additional support for personal development in pre-primary education;**
- 3. General and additional support for personal development in school education;**
- 4. Supporting talented children and school students with outstanding talents;**

5. Modernising curricula and educational content through the introduction of the competence-model as well as the preparation of individual curricula and the individual curricula of pupils with special educational needs and students with outstanding skills;

6. Mobility and transition between the different stages of education;

7. Digital transformation of school education.

It is envisaged that such strategic operations will be carried out as long-term operations with a systemic impact, under the coordination of the Ministry of Education and Science. These operations will provide for a specific evaluation and monitoring plan to allow for an impact assessment in the course of implementation and a flexible update mechanism will be established, depending on the results of the assessment and monitoring.

Operations of strategic importance will be implemented in a decentralized way, based on needs defined at educational institution level and with the leading role of educational institutions.

The main target groups - Article 17(3)(d)(iii):

Text field [1 000]

Children, pupils, young adults, beyond mandatory school age, parents, teachers, educators and other personnel, children, pupils and young people with special educational needs, children, pupils, young people from marginalised groups seeking or granted international protection and other vulnerable groups. Educational actors, pre-primary and school education institutions, municipalities, children and pupils with learning gaps, children and pupils at risk of dropping out of education, parents of children from vulnerable groups, early school leavers, etc.

Specific territories targeted, including the planned use of territorial tools – Article 17(3)(d)(iv)
Text field [2 000]

Text field [2 000] The following groups of activities are planned:

— **Creating conditions for access to education by addressing demographic, social and cultural barriers, and**

— **Comprehensive programmes at municipal level for desegregation of schools, prevention of secondary segregation and anti-discrimination** will take place at the territorial level, using the **Integrated Territorial Investment (ITI)** approach. Specific needs and operations at local and regional level will be identified in the Regional Spatial Development Schemes (RSDS) of the NUTS 2 level regions developed under the responsibility of the Regional Development Councils. The programme's actions under the ITI approach will be implemented on the basis of integrated concepts, which will be developed and implemented in partnership between different local stakeholders (municipalities, NGOs, education institutions, etc.), with a view to maximising the impact on the territory. Each concept will include a set of interrelated and complementary projects/conceptual projects targeting a territory with common characteristics and/or development potential, incorporating the most appropriate combination of resources and measures to be used purposefully to achieve a specific objective or priority of the Integrated Regional Strategy (RSDS). In this way, the identified OPSE projects under the ITI concept will be coordinated with the projects under the other programs providing funding under the concept. *The interregional and transnational actions – Article 17(3)(d)(v):*

Text field [2 000] NA

Text field [1 000] NA

2.1.2.1. Indicators⁸

Reference: Article 17(3)(d)(ii)

Priority	Specific objective (Jobs and growth goal) or area of support (EMFF)	Fund	Category of region	ID [5]	Indicator [255]	Measurement unit	Milestone (2024)	Target (2029)
P 1	SO V	ESF+	Less developed		Participants with lower secondary education or less (ISCED 0-2)	number	112 101	747 344
P 1	SO V	ESF+	Less developed		Participants from minorities (including marginalised communities such as the Roma)	number	13 500	90 000
P 1	SO V	ESF+	Less developed		Participants with disabilities	number	450	3 000
P 1	SO V	ESF+	Less developed		Participants with tertiary education (ISCED 5 to 8)	number	7 500	50 000
P 1	SO V	ESF+	Less developed		Participants below 30 years of age	number	395	2 633

Priority	Specific objective (Jobs and growth goal) or area of support (EMFF)	Fund	Category of region	ID [5]	Indicator [255]	Measurement unit	Baseline or reference value	Reference year	Target (2029)	Source of data [200]	Comments [200]
P 1	SO V	ESF+	Less developed		participants in education or training upon leaving	number		2019	672 610	NSI	

2.1.2.2. Indicative breakdown of the programme resources (EU) by type of intervention⁹ (not applicable to the EMFF)

Reference: Article 17(3)(d)(vii)

⁸ Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, breakdown for the years 2021 to 2025 only.

⁹ Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, breakdown for the years 2021 to 2025 only.

Table 4: Dimension 1 – intervention field					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 1	ESF+	Less developed	1	117	2.75% from the budget (EU) of OPSE
Priority 1	ESF+	Less developed	1	111	4.81% from the budget (EU) of OPSE
Priority 1	ESF+	Less developed	1	112	26.83% from the budget (EU) of OPSE
Priority 1	ESF+	Less developed	1	108	10.32% from the budget (EU) of OPSE

Table 5: Dimension 2 – form of financing					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 1	ESF+	Less developed	V	01	44.71% from the budget (EU) of OPSE

Table 6: Dimension 3 – territorial delivery mechanism and territorial focus					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 1	ESF+	Less developed	V	17	2.06% from the budget (EU) of OPSE

Table 7: Dimension 6 – ESF+ secondary themes					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)

2.1.2 Specific objective addressing material deprivation

Reference: Article 17(3); CPR

Types of support

Text field [2 000 characters]

Main target groups

Text field [2 000 characters]

Description of the national or regional schemes of support

Text field [2 000 characters]

Criteria for the selection of operations¹⁰

¹⁰ Only for programmes limited to the specific objective set out in Article 4(1)(c)(vii) of the ESF+ Regulation

Text field [4 000 characters]

2.2. Title of the priority [300] (repeated for each priority)

PRIORITY 2 — IMPROVING THE LINK OF EDUCATION TO THE LABOUR MARKET

This is a priority dedicated to a relevant country-specific recommendation

This is a priority dedicated to youth employment

This is a priority dedicated to innovative actions

This is a priority dedicated to addressing material deprivation**

**Table applicable to ESF+ priorities.*

*** If marked go to section 2.1.2*

2.2.1. Specific objective¹¹ (Jobs and growth goal) or Area of support (EMFF) – repeated for each selected specific objective or area of support, for priorities other than technical assistance

SO IV — Improving the quality, effectiveness and labour market relevance of education and training systems to support acquisition of key competences including digital skills

2.2.2. Interventions of the Funds

Reference: Article 17(3)(d)(i)(iii)(iv)(v)(vi);

The related types of actions – Article 17(3)(d)(i):

Text field [8 000]

• **Activities in support of VET at national level, including:**

- Establishment of Vocational Education and Training rating system based on new technologies and artificial intelligence for data collection, tracking and analysis, including an indicator framework with a mechanism and toolbox to track progress and measure learning outcomes and track school graduates at school and national level as well as quality management of VET;
- Establishment of sectoral and regional information portals, including information on guidance for specific professions, labour market developments by sector and region, enterprise profiles, etc.;
- Building/support platforms and databases to link business and education for implementation of traineeships and internships at national, regional, local and sectoral level;
- Setting up and maintaining a system for updating the qualifications of teachers and lecturers in their field of study in higher education, as well as attracting young teachers and vocational trainers into the VET system.
- Modernisation of educational plans and curricula, including on vocational training. Modernisation of textbooks and teaching aids, including professional training in the various strands.

¹¹ Except for a specific objective set out in Article 4(1)(c)(vii) of the ESF+ Regulation.

- Update and modernisation of vocational education and training professions' list, development and updating of state educational standards, educational plans and curricula, national examination programmes in a single mechanism and with the use of the opportunities of digital technologies to ensure compliance between them, as well as matching needs for specific professional knowledge and skills and key competences in a real working environment and better alignment of standards to the requirements of the profession, in partnership with nationally representative employers' organisations.
- Development of 'Sectoral Skills Strategies' and 'Sectoral Qualification Frameworks' and the setting up and operation of Sector Skills Councils;
- Develop the competence profiles of VET teachers and trainers. Qualification of teaching professionals and teachers, including methodological educator and methodological teachers and teachers on professional preparation, for the use of modern digital technologies, skills for interactive teaching techniques, the new developments in the professions they teach, including studies of the training needs of VET teachers and trainers; Teacher training for creating digital content; Creation of virtual communities (e.g. on a sectoral basis) for the sharing of content, practices and resources.
- Developing learning materials on professional preparation with digital and interactive learning content, open educational resources; e-learning, application management, content creation and sharing, literacy and culture for working with digital learning resources, the creation of virtual labs and classrooms with the use of artificial intelligence to contribute to the governance and individualisation of the learning process and preparation at home, according to the level and pace of learning of learners, including the development of tailored/individualised curricula.
- Ensuring flexible pathways for re-entry into vocational education or training;
- Developing flexible modular educational plans and curricula by professions taking into account real labour market needs and flexible adaptation mechanisms, including part-time, evening and distance forms of learning;
- Development of national examination programmes and the development of a credit system and the introduction of credits in vocational education and training, in the context of the European Credit Transfer System for Vocational Education and Training (ECVET).
- Development of flexible modular curricula and programmes of professions taking into account real labour market needs and a flexible adaptation mechanism, including part-time, evening and remote types of training together with employers.
- **Activities in support of VET at regional level, including:**
 - Developing, testing and implementing a partnership principle with the social partners, employers and other stakeholders of information and communication strategies and programmes at the territorial level, such as information exchanges, open days in enterprises and VET education institutions, to make VET and professional realisation in key economic sectors and specialties more attractive, and to strengthen the link pupils/parents — business — school — local authority —

including: conducting regional studies on the motives and barriers of young people to focus on vocational education;

- Incentives, including scholarships, and the provision of dormitories for the orientation of young people to priorities important for the economy;
 - Early career and professional guidance on trends in the development of the regional economy with business participation;
 - Establishment of a peer review control mechanism for the “quality evaluation” of VET and systems to track the realisation of the school graduates on the labour market and feedback from employers;
 - Support the practical training of vocational secondary school students through additional practices in a real working environment.
 - Enhancing practical training and additional professional preparation in educational institutions by supporting educational training companies and the provision of specialised equipment and materials for VET;
 - Support for the introduction of scientific approaches and innovations in VET, for the promotion of continuing education and guidance for students' R&D, entrepreneurial skills of students, such as VET centers of excellence at European level. Upgrading the learning environment as an open and shared learning space between schools, businesses, higher schools and across all institutions where education, training and learning occur.
- **Development of the dual training system, including:**
 - Further vocational training, information campaigns, creation of networks, development of framework and methodology and training, training for teachers and mentors, development of training content adequately tailored to business needs, delivery of specialised equipment, career guidance and training placements; sharing experience;
 - **Adult literacy, including:**
 - organizing and conducting adult literacy courses and training courses for the acquisition of educational content for the various educational levels and/or learning a profession or part of a profession for unemployed persons (with low education or without any education) in coordination with the National Employment Agency and MLSP, with a view to further integrating into vocational training opportunities;
 - promoting the need to enhance and encourage literacy and to raise social awareness of the benefits of enhancing literacy;
 - inclusion in education and training of those, who have not completed secondary education.
 - **Validation of knowledge, skills and competences, including:**
 - Providing flexible formats for the validation of knowledge, skills and competences acquired through non-formal education and informal learning, as well as for complementary qualifications, including short-term courses and examination programmes jointly realised in the VET system in accordance with the state

educational requirements for the acquisition of qualification by profession and all other validation activities under the VET Act.

- **Transition to a dual form of higher education:**
 - Research of international experiences within the EU;
 - Study of the attitude of business in the country to introduce a dual form of training in the tertiary education
 - Preparation of methodologies, manuals, training material, model agreements between higher education institutions and employers to conduct dual training in higher education with the participation of nationally representative employers' organisations;
 - Preparation of normative documents for the introduction of dual training in higher education;
 - Upgrading the graduate tracking system and organise a single career guidance network, in line with labour market needs.
- **Students' career guidance and professional preparation, including:**
 - Provision of systems for tracking graduates of higher education at higher educational institution level;
 - Promoting the scientific work of students and doctoral candidates, by providing specialisations and fellowships for research;
 - Support for career centres in higher educational institutions;
 - Ensuring student practices based on assessment of students' career guidance in priority professional directions;
 - Activities for the introduction of dual training in higher education — the development and introduction of dual learning programmes; information measures to reach students and employers and organise partnerships between higher education institutions and employers in higher education;
 - Training for teachers and mentors;
 - Promoting innovation and entrepreneurship in higher education institutions in the digital economy, including support for start-ups of students and doctoral candidates, including through the development and introduction of mentoring programmes involving business representatives;
- **Renewal and modernisation of curricula in priority occupational fields, in partnership with business, in line with the needs of the labour market and through the introduction of a competence model and the development of T-shaped skills and the development of creative and transversal skills, by:**
 - Extended introduction of digital education technologies and the creation of programmes with a purely digital content, in line with the trend towards the development of digital transformation and artificial intelligence;
 - Setting up joint study programmes with foreign higher education institutions with a top 1000 rating in international rankings and issuing common diplomas;

- Establishment of joint study programmes between higher education institutions in Bulgaria, use of common resources — teachers, training facilities, learning content and the issuance of common diplomas.
 - Establishment of foreign language and distance learning programmes;
 - The introduction of innovative curricula and teaching methods;
 - Establishing joint (between business and higher educational institutions) centres for assessment and validation of competencies for higher qualification occupations (assessment centres).
 - Developing the competence profiles of higher education institutions and tools to assess the relevance of curricula and curricula to skills needs in the labour market.
 - Development and deployment of competence-based training models for students in interaction between higher education institutions and business.
- **Mobility and synergies with Erasmus+ and Horizon Europe, including:**
 - Professional development of teachers and academics, through short-term specialisations abroad;
 - Attracting teachers from abroad;
 - Short-term mobility of students and researchers in priority occupational groups;
 - The introduction of credit recognition systems obtained at foreign higher education institutions;
 - Upgrading the digital skills of teachers, scientists and students;
 - **Student loans**

List of planned operations of strategic importance- Article 17(3)(d)(i):

Text field [2 000]

Group of activities:

— Activities in support of VET at national level, including:

*— **Transition towards a dual form of training in higher education,***

will be carried out as strategic long-term operations, implemented at the central level with a plan and specific information and publicity, monitoring and evaluation measures.

The main target groups - Article 17(3)(d)(iii):

Text field [1 000]

School students, teaching specialists, teaching staff in higher education;

Higher education institutions and accredited scientific bodies: students and doctoral candidates;

MES, National Agency for Quality Assessment and Accreditation (NAQAA);

Employers, including nationally representative employers' and employees' organisations;

Municipalities

Specific territories targeted, including the planned use of territorial tools – Article 17(3)(d)(iv)
Text field [2 000]

Text field [2 000]

Activities targeting the following groups of activities are planned:

- **Supporting VET at the regional level;**
- **Development of the dual learning system;**
- **Adult literacy;**
- **Validation of knowledge, skills and competences,**

to be implemented at territorial level, through the **Integrated Territorial Investments (ITI)** approach.

Specific needs and operations at local and regional level will be identified in the Regional Spatial Development Schemes (RSDS) of the NUTS 2 level regions developed under the responsibility of the Regional Development Councils. The programme's actions under the ITI approach will be implemented on the basis of integrated concepts, which will be developed and implemented in partnership between different local stakeholders (municipalities, NGOs, education institutions, employers, etc.), with a view to maximising the impact on the territory. Each concept will include a set of interrelated and complementary projects/conceptual projects targeting a territory with common characteristics and/or development potential, incorporating the most appropriate combination of resources and measures to be used purposefully to achieve a specific objective or priority of the Integrated Regional Strategy (RSDS). In this way, the identified OPSE projects under the ITI concept will be coordinated with the projects under the other programs providing funding under the concept.

The interregional and transnational actions – Article 17(3)(d)(v):

Text field [2 000]

The planned use of financial instruments – Article – 17(3)(d)(vi)

Text field [1 000]

2.2.2.1. Indicators¹²

Reference: Article 17(3)(d)(ii)

Priority	Specific objective (Jobs and growth goal) or area of	Fund	Category of region	ID [5]	Indicator [255]	Measurement unit	Milestone (2024)	Target (2029)

¹² Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, breakdown for the years 2021 to 2025 only.

	support (EMFF)								
P 2	SO IV	ESF+	Less developed		participants with lower secondary education or less (ISCED 0-2)	Number	11 460	76 400	
P 2	SO IV	ESF+	Less developed		participants with upper secondary (ISCED 3) or post-secondary education (ISCED 4)	Number	9 000	60 000	
P 2	SO IV	ESF+	Less developed		participants from minorities (including marginalised communities such as the Roma)	Number			
P 2	SO IV	ESF+	Less developed		participants with tertiary education	Number	1 630	10 878	
P 2	SO IV	ESF+	Less developed		number of supported public administrations or public services at national, regional or local level	Number	2	2	

Table 3: Result indicators

Priority	Specific objective (employment and growth)	Fund	Category of region	ID [5]	Indicator [255]	Measurement unit	Baseline or reference value	Reference year	Target (2029)	Source of data [200]	Comments [200]
P 2	SO IV	ESF+	Less developed		Participants engaged in job searching upon leaving	Number			15 280		

P 2	SO IV	ES F+	Less developed		Participants in education or training upon leaving	Number			89 480		
P 2	SO IV	ES F+	Less developed		participants gaining a qualification upon leaving	Number			8 702		

2.2.2.2. Indicative breakdown of the programme resources (EU) by type of intervention¹³ (not applicable to the EMFF)

Reference: Article 17(3)(d)(vii)

Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 2	ESF+	Less developed	SO IV	112	6.88% from the budget (EU) of OPSE
Priority 2	ESF+	Less developed	SO IV	113	8.25% from the budget (EU) of OPSE
Priority 2	ESF+	Less developed	SO IV	116	2.06% from the budget (EU) of OPSE
Priority 2	ESF+	Less developed	SO IV	108	6.88% from the budget (EU) of OPSE

Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 2	ESF+	Less developed	SO 1	01	23.39% from the budget (EU) of OPSE
Priority 2	ESF+	Less developed	SO 1	03	0.52% from the budget (EU) of OPSE
Priority 2	ESF+	Less developed	SO 1	04	0.17% from the budget (EU) of OPSE

¹³ Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, breakdown for the years 2021 to 2025 only.

Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 2	ESF+	Less developed	SO 1	17	8.25% from the budget (EU) of OPSE

Table 7: Dimension 6 – ESF+ secondary themes					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)

2.1.2 Specific objective addressing material deprivation

Reference: Article 17(3); CPR

Types of support

Text field [2 000 characters]

Main target groups

Text field [2 000 characters]

Description of the national or regional schemes of support

Text field [2 000 characters]

Criteria for the selection of operations¹⁴

Text field [4 000 characters]

¹⁴ Only for programmes limited to the specific objective set out in Article 4(1)(c)(vii) of the ESF+ Regulation

2.3. Title of the priority [300] (repeated for each priority)

PRIORITY 3 — SCIENTIFIC INFRASTRUCTURE AND APPLIED RESEARCH

<input type="checkbox"/> This is a priority dedicated to a relevant country-specific recommendation
<input type="checkbox"/> This is a priority dedicated to youth employment
<input type="checkbox"/> This is a priority dedicated to innovative actions
<input type="checkbox"/> This is a priority dedicated to addressing material deprivation**

*Table applicable to ESF+ priorities.

** If marked go to section 2.1.2

2.3.1. Specific objective 15 (Jobs and growth goal) or Area of support (EMFF) – repeated for each selected specific objective or area of support, for priorities other than technical assistance

SO 1.1 — *Enhancing research and innovation capacities and the uptake of advanced technologies*

2.3.2. Interventions of the Funds

Reference: Article 17(3)(d)(i)(iii)(iv)(v)(vi);

The related types of actions – Article 17(3)(d)(i):

Text field [8 000] – containing 5292

Under this specific objective, the OPSE will support measures to improve research capacity oriented towards results, modernisation of scientific infrastructure, improvement of working conditions and mobility of scientists through actions under the following headings:

Strand A “Research infrastructure in strategically defined science centres” with the following actions:

1. Modernisation of research infrastructure and equipment, incl. ICT connectivity and associated infrastructure in strategically determined centres of excellence and centres of competence;

2. Support for market-oriented applied research (TRL 3-6), including by attracting young scientists and internationally established highly qualified scientists, for strategically defined scientific centres of excellence and competence centres;

3. Internationalisation of research in strategically defined scientific centres of excellence and competence centres, by:

- building networks and joint research activity with leading European science organisations and universities, support for joining pan-European research infrastructures;
- creation of strategic partnerships with research and innovation centres and European infrastructures and specialization of scientists from the supported centres in leading European research and innovation centres;

¹⁵ Except for a specific objective set out in Article 4(1)(c)(vii) of the ESF+ Regulation.

- exchange of experience and involvement of leading world scientists and specialists for lectures, practical courses and joint development of new methods, techniques, etc. related to the use of infrastructure.

4. Dissemination and transfer of scientific results in strategically defined scientific centres of excellence and centres of competence, including

- publication of scientific results with free access thereto (open access);
- actions to protect the establishment, acquisition, protection and utilisation, management and transfer of intellectual property rights (the preparation of patent applications and utility models and their maintenance; trade marks of varieties, breeds of animals and other forms of intellectual property);
- assessment of the market potential of research;
- participation in scientific forums;
- organizing international scientific forums.

5. Supporting high-tech start-ups in the supported strategically defined centres of excellence and centres of competence.

Strand B “Applied scientific research” with the following types of actions:

1. Support for market-oriented applied research (TRL 3-6), including by attracting young scientists and internationally established highly qualified scientists;

2. Internationalisation of research through:

- building networks and joint research activities with leading European scientific organizations and universities;
- creation of strategic partnerships with research and innovation centres and European infrastructures and specialization of scientists from the supported centres in leading European research and innovation centres;
- exchange of experience and involvement of leading world scientists and specialists for lectures, practical courses and joint development of new methods, techniques, etc. related to the use of infrastructure.

3. Dissemination and transfer of scientific results, including

- publication of scientific results with free access thereto (open access);
- actions to protect and transfer intellectual property rights (preparation of patent applications and utility models and their maintenance); trade marks of varieties, breeds of animals and other forms of intellectual property;
- assessment of the market potential of research;
- participation in scientific forums;
- organizing international scientific forums.

4. Support for high-tech start-ups.

Strand C “Synergies with Horizon Europe FP” with the following types of actions:

1. Modernisation of research infrastructure and equipment, including supporting infrastructure in projects approved under Horizon Europe, strand “Sharing Excellence”;

2. Support for market-oriented applied research (TRL 3-6), including by attracting young scientists and internationally established highly qualified scientists for Horizon Europe Pillar II projects that have obtained a Seal of Excellence;

3. Internationalisation of research for projects under Pillar II of Horizon Europe that have been awarded a Seal of Excellence by:

- building networks and joint research with leading European scientific organizations and universities;
- creation of strategic partnerships with research and innovation centres and European infrastructures and specialization of scientists from the supported centres in leading European research and innovation centres;
- exchange of experience and involvement of leading world scientists and specialists for lectures, practical courses and joint development of new methods, techniques, etc. related to the use of infrastructure.

4. Dissemination and transfer of research results for Horizon Europe Pillar II projects that have obtained a Seal of Excellence, including

- publication of scientific results with open access;
- actions to protect and transfer intellectual property rights (preparation of patent applications and utility models and their maintenance); trade marks of varieties, breeds of animals and other forms of intellectual property;
- assessment of the market potential of research;
- participation in scientific forums;
- organizing international scientific forums.

List of planned operations of strategic importance- Article 17(3)(d)(i):

Text field [2 000]

1. Upgrade of research infrastructure and equipment, incl. IT connectivity and associated infrastructure in strategically determined research centres of excellence and centres of competence;

The financing of operations of strategic importance is envisaged to be carried out by directly awarding grants to the centres of excellence and centres of competence, which are included in the National Roadmap for Scientific Infrastructure and which are functionally operational, i.e. they have a clear and operational organisational structure.

The operations of strategic importance are envisaged to be long-term, with the inclusion of a plan and specific information and publicity, monitoring and evaluation measures.

The main target groups - Article 17(3)(d)(iii):

Text field [1 000]

Researchers in research organisations, university teachers, doctoral candidates, postdoctoral candidates, young scientists, students, business representatives.

*Specific territories targeted, including the planned use of territorial tools – Article 17(3)(d)(iv)
Text field [2 000]*

Text field [2 000]

NOT APPLICABLE

The interregional and transnational actions – Article 17(3)(d)(v):

Text field [2 000]

NOT APPLICABLE

The planned use of financial instruments – Article – 17(3)(d)(vi)

Text field [1 000]

The actions to be implemented through financial instruments, as well as the form and amount of support, through financial instruments, necessary to achieve the specific objective under this priority will, in particular, be determined after the completion of the ex-ante evaluation of support under the OPSE through financial instruments. The results of the ex-ante evaluation may lead to amendments in Table 5, ‘Dimension 2 — Form of financing’, as well as a change in the values of the indicators to which financial instruments will contribute.

2.3.2.1. Indicators¹⁶

Reference: Article 17(3)(d)(ii)

Table 2: Output indicators								
Priority	Specific objective (Jobs and growth goal) or area of support (EMFF)	Fund	Category of region	ID [5]	Indicator [255]	Measurement unit	Milestone (2024)	Target (2029)
P 3	SO 1	ERDF	Less developed	RCO 05	Start-ups supported	number		52
P 3	SO 1	ERDF	Less developed	RCO 06	Researchers working in supported research facilities	number		1 269

¹⁶ Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, breakdown for the years 2021 to 2025 only.

<i>P 3</i>	<i>SO 1</i>	<i>ERDF</i>	<i>Less developed</i>	<i>RCO 07</i>	<i>Research institutions participating in joint research projects</i>	<i>number</i>		51
<i>P 3</i>	<i>SO 1</i>	<i>ERDF</i>	<i>Less developed</i>	<i>RCO 08</i>	<i>Nominal value of research and innovation equipment</i>	<i>EUR</i>		60 522 336
<i>P 3</i>	<i>SO 1</i>	<i>ERDF</i>	<i>Less developed</i>	<i>RCO 10</i>	<i>Enterprises cooperating with research institutions</i>	<i>number</i>		94

Table 3: Result indicators											
Priority	Specific objective (Jobs and growth goal) or area of support (EMFF)	Fund	Category of region	ID [5]	Indicator [255]	Measurement unit	Baseline or reference value	Reference year	Target (2029)	Source of data [200]	Comments [200]
<i>P 3</i>	<i>SO 1</i>	<i>ERDF</i>	<i>Less developed</i>	<i>RCR 01</i>	<i>Jobs created in supported entities</i>	<i>number</i>			469		
<i>P 3</i>	<i>SO 1</i>	<i>ERDF</i>	<i>Less developed</i>	<i>RCR 06</i>	<i>Patent applications submitted to European Patent Office</i>	<i>Number</i>			310		
<i>P 3</i>	<i>SO 1</i>	<i>ERDF</i>	<i>Less developed</i>	<i>RCR 08</i>	<i>Public-private co-publications</i>	<i>number</i>			621		

2.3.2.2. Indicative breakdown of the programme resources (EU) by type of intervention¹⁷
(not applicable to the EMFF)

Reference: Article 17(3)(d)(vii)

Table 4: Dimension 1 – intervention field					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 3	ERDF	Less developed	SO 1	003	10.44% from the budget (EU) of OPSE
Priority 3	ERDF	Less developed	SO 1	006	1.42% from the budget (EU) of OPSE
Priority 3	ERDF	Less developed	SO 1	009	11.87% from the budget (EU) of OPSE
Priority 3	ERDF	Less developed	SO 1	021	4.52% from the budget (EU) of OPSE

¹⁷ Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, breakdown for the years 2021 to 2025 only.

Table 5: Dimension 2 – form of financing					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)
Priority 3	ERDF	Less developed	SO 1	01	22.60% from the budget (EU) of OPSE
Priority 3	ERDF	Less developed	SO 1	02 (FI)	3.39% from the budget (EU) of OPSE
Priority 3	ERDF	Less developed	SO 1	03 (FI)	1.70% from the budget (EU) of OPSE
Priority 3	ERDF	Less developed	SO 1	04 (FI)	0.57% from the budget (EU) of OPSE

Table 6: Dimension 3 – territorial delivery mechanism and territorial focus					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)

Table 7: Dimension 6 – ESF+ secondary themes					
Priority No	Fund	Category of region	Specific objective	Code	Amount (EUR)

2.1.2 Specific objective addressing material deprivation

Reference: Article 17(3); CPR

Types of support

Text field [2 000 characters]

Main target groups

Text field [2 000 characters]

Description of the national or regional schemes of support

Text field [2 000 characters]

Criteria for the selection of operations¹⁸

Text field [4 000 characters]

2.T. TECHNICAL ASSISTANCE PRIORITY

Reference: Article 17(3)(e); Article 29, Article 30, Article 31, Article 89 CPR;

Description of technical assistance under flat rate payments – Article 30

¹⁸ Only for programmes limited to the specific objective set out in Article 4(1)(c)(vii) of the ESF+ Regulation

Text field [5 000]

Description of technical assistance under payments not linked to costs – Article 31

Text field [3 000]

Table 8: Dimension 1 – intervention field				
Priority No	Fund	Category of region	Code	Amount (EUR)

Table 9: Dimension 5 – ESF+ secondary themes				
Priority No	Fund	Category of region	Code	Amount (EUR)

3. FINANCIAL PLAN

Reference: Article 17(3)(f)(i)-(iii); Article 106(1)-(3), Article 10; Article 21; CPR,

3.A Transfers and contributions¹⁹

Reference: Article 10; Article 21; CPR

<input type="checkbox"/> Programme amendment related to Article 10, CPR (contribution to Invest EU)
<input type="checkbox"/> Programme amendment related to Article 21, CPR (transfers to instruments under direct or indirect management between shared management funds)

Table 15: Contributions to InvestEU*

	Category of region	Window 1 (a)	Window 2 (b)	Window 3 (c)	Window 4 (d)	Window 5 (e)	amount (f)=(a)+(b)+(c)+(d)+(e)
ERDF	More developed						
	Less developed						
	Transition						
	Outermost regions and Northern sparsely populated regions						
ESF+	More developed						
	Less developed						
	Transition						
	Outermost						
CF							
EMFF							
Total							

*Cumulative amounts for all contributions during programming period.

Table 16: Transfers to instruments under direct or indirect management*

Fund	Category of region	Instrument 1 (a)	Instrument 2 (b)	Instrument 3 (c)	Instrument 4 (d)	Instrument 5 (e)	Transfer amount (f)=(a)+(b)+(c)+(d)+(e)
ERDF	More developed						
	Transition						
	Less developed						
	Outermost regions and Northern sparsely populated regions						

¹⁹ Applicable only to programme amendments in line with Article 10 and 21, CPR..

ESF+	More developed						
	Transition						
	Less developed						
	Outermost						
CF							
EMFF							
Total							

*Cumulative amounts for all transfers during programming period.

Table 17: Transfers between shared management funds*

		ERDF				ESF+				CF	EMFF	AMF	ISF	BMVI	Total
		More developed	Transition	Less developed	Outermost regions and Northern sparsely populated regions	More developed	Transition	Less developed	Outermost						
ERDF	More developed														
	Transition														
	Less developed														
	Outermost regions and Northern sparsely populated regions														
ESF+	More developed														
	Transition														
	Less developed														
	Outermost														
CF															
EMFF															
Total															

* Cumulative amounts for all transfers during programming period.

3.1 Financial appropriations by year

Reference: Article 17(3)(f)(i)

Table 10: Financial appropriations by year										
Fund	Category of region	2021	2022	2023	2024	2025	2026	2027	Total	

ESF+	Less developed	-	3.59%	7.17%	10.76%	14.35%	14.35%	21.52%	71.74%
	More developed								
	Transition								
	Outermost								
Total		-	3.59%	7.17%	10.76%	14.35%	14.35%	21.52%	71.74%
ERDF	Less developed	-	1.41%	2.83%	4.24%	5.65%	5.65%	8.48%	28.26%
	More developed								
	Transition								
	Outermost regions and Northern sparsely populated regions								
Total		-	1.41%	2.83%	4.24%	5.65%	5.65%	8.48%	28.26%
Total		-	5.00%	10.00%	15.00%	20.00%	20.00%	30.00%	100.00%

3.2 Total financial appropriations from the Fund and national co-financing¹

Article 17(3)(f)(ii), Article 17(6)

For Jobs and growth goal:

Table 11: Total financial appropriations by fund and national co-financing										
Policy objective No or TA	Priority	Priority Basis for calculation support (total or public)	EU or Fund	Category of region*	EU contribution (a)	National contribution (b)=(c)+(d)	Indicative breakdown of national contribution		Total (e)=(a)+(b)**	Co-financing rate (f)=(a)/(e)**
							public (c)	private (d)		
PO 4	Priority 1		ESF+	Less developed	44.71%	44.71%			44.71%	70%
				More developed		-			-	
				Transition		-			-	
				Outermost		-			-	
PO4	Priority 2		ESF+	Less developed	24.07%	24.07%			24.07%	70%
PO 1	Priority 3	Priority 3	ERDF	Less developed	28.26%	28.26%			28.26%	70%
				More developed		-			-	
				Transition		-			-	
				Special allocation for outermost and northern sparsely populated regions		-			-	
Technical assistance			ESF+		2.96%	2.96%			2.96%	70%
Total ESF+				More developed						70%
				Transition		-			-	
				Less developed	71.74%	-	71.74%		71.74%	

¹ Prior to the mid-term review in 2025 for the ERDF, the ESF+ and the CF, financial appropriations for the years 2021 to 2025 only.

			Outermost		-			-	
Total ERDF			More developed		-			-	
			Transition		-			-	
			Less developed	28.26%	28.26%			28.26%	70%
			Special allocation for outermost and northern sparsely populated regions						
Total CF		NA							
Grand Total				100.00%	100.00%	-	-	100.00%	70%

* For ERDF: less developed, transition, more developed, and, where applicable special allocation for outermost and northern sparsely populated regions. For ESF+: less developed, transition, more developed and, where applicable, additional allocation for outermost regions. For CF: not applicable. For technical assistance, application of categories of region depends on selection of a fund.

** Where relevant for all categories of region.

For the EMFF:

Reference: Article 17(3)(f)(iii)

Priority	Type of area of support (nomenclature set out in the EMFF Regulation)	Basis for calculation of EU support	EU contribution	National public	Total	Co-financing rate
Priority 1	1.1	Public				
	1.2	Public				
	1.3	Public				
	1.4	Public				
	1.5	Public				
Priority 2	2.1	Public				
Priority 3	3.1	Public				
Priority 4	4.1	Public				
Technical assistance	5.1	Public				

1. Enabling conditions

Reference: Article 19(3)(h)

Enabling conditions	Fund	Specific objective (N/A to the EMFF)	Fulfilment of enabling condition	Criteria	Fulfilment of criteria	Reference to relevant documents	Justification
			Yes/No	Criterion 1	Yes/No	[500]	[1,000]
				Criterion 2	Yes/No		

2. Programme authorities

Reference: Article 17(3)(j); Article 65, Article 78 CPR

Programme authorities	Name of the institution [500]	Contact name [200]	e-mail [200]
Managing authority			
Audit authority			
Body which receives payments from the Commission			

3. Partnership

Reference: Article 17(3)(g)

Text field [10 000]

4. Communication and visibility:

Article 17(3)(i) CPR, Article 42(2) CPR

Text field [4 500]

5. Use of unit costs, lump sums, flat rates and financing not linked to costs

Reference: Articles 88 and 89 CPR

Table 14: Use of unit costs, lump sums, flat rates and financing not linked to costs

Indication of use of Articles 88 and 89: *	Priority No	Fund	Specific objective (Jobs and growth goal) or area of support (EMFF)
Use of reimbursement of eligible expenditure based on unit costs, lump sums and flat rates under priority according to Article 88 CPR	Priority	ERDF	
	Priority	ESF+	
	Priority 3		SO 6
Use of financing not linked to costs according to Article 89 CPR	Priority 1	ERDF	SO 7
			SO 8
	Priority 2	ESF+	SO 9
			SO 10
	Priority 3	CF	SO 11
			SO 12

* Full information will be provided according to the models annexed to the CPR.

APPENDICES

- Reimbursement of eligible expenditure based on unit costs, lump sums and flat rates (Article 88 CPR)
- Financing not linked to costs (Article 89 CPR)
- EMFF action plan for small-scale coastal fishing
- EMFF action plan for each outermost region

Appendix 1: Reimbursement of eligible expenditure from the Commission to the Member State based on unit costs, lump sums and flat rates

Template for submitting data for the consideration of the Commission

(Article 88)

Date of submitting the proposal	
Current version	

A. Summary of the main elements

Priority	Fund	Specific objective (Jobs and growth goal) or area of support (EMFF)	Category of region	Estimated proportion of the total financial allocation within the priority to which the SCO will be applied in % (estimate)	Type(s) of operation		Corresponding indicator name(s)		Unit of measurement for the indicator	Type of SCO (standard scale of unit costs, lump sums or flat rates)	Corresponding standard scales of unit costs, lump sums or flat rates (in national currency)
					Code	Description	Code	Description			

B. Details by type of operation (to be completed for every type of operation)

Did the managing authority receive support from an external company to set out the simplified costs below?

If so, please specify which external company: Yes/No – Name of external company

Types of operation:

1.1. Description of the operation type	
1.2 Priority /specific objective(s) concerned (Jobs and growth goal) or area of support (EMFF)	
1.3 Indicator name ¹	
1.4 Unit of measurement for indicator	
1.5 Standard scale of unit cost, lump sum or flat rate	
1.6 Amount	
1.7 Categories of costs covered by unit cost, lump sum or flat rate	
1.8 Do these categories of costs cover all eligible expenditure for the operation? (Y/N)	
1.9 Adjustment(s) method	
11.10 Verification of the achievement of the unit of measurement - what document(s) will be used to verify the achievement of the unit of measurement? - describe what will be checked during management verifications (including on-the-spot), and by whom. - what arrangements to collect and store the data/documents described?	
1.11 Possible perverse incentives or problems caused by this	

¹Several complementary indicators (for instance one output indicator and one result indicator) are possible for one type of operation. In these cases, fields 1.3 to 1.11 should be filled in for each indicator.

indicator, how they could be mitigated, and the estimated level of risk	
1.12 Total amount (national and EU) expected to be reimbursed	

C: Calculation of the standard scale of unit costs, lump sums or flat rates

1. Source of data used to calculate the standard scale of unit costs, lump sums or flat rates (who produced, collected and recorded the data; where the data are stored; cut-off dates; validation, etc.).

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2. Please specify why the proposed method and calculation is relevant to the type of operation:

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3. Please specify how the calculations were made, in particular including any assumptions made in terms of quality or quantities. Where relevant, statistical evidence and benchmarks should be used and attached to this annex in a format that is usable by the Commission.

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4. Please explain how you have ensured that only eligible expenditure was included in the calculation of the standard scale of unit cost, lump sum or flat rate.

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5. Assessment of the audit authority(ies) of the calculation methodology and amounts and the arrangements to ensure the verification, quality, collection and storage of data.

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Appendix 2: Financing not linked to cost

Template for submitting data for the consideration of the Commission

(Article 89)

Date of submitting the proposal	
Current version	

A. Summary of the main elements

Priority	Fund	Specific objective (Jobs and growth goal) or area of support (EMFF)	Category of region	<i>The amount covered by the financing not linked to cost</i>	Type(s) of operation	Conditions to be fulfilled/results to be achieved	Corresponding indicator name(s)		Unit of measurement for the indicator
							Code	Description	
The overall amount covered									

B. Details by type of operation (to be completed for every type of operation)

Types of operation:

1.1. Description of the operation type			
1.2 Priority /specific objective(s) (Jobs and growth goal) or area of support (EMFF) concerned			
1.3 Conditions to be fulfilled or results to be achieved			
1.4 Deadline for fulfilment of conditions or results to be achieved			
1.5 Indicator definition for deliverables			
1.6 Unit of measurement for indicator for deliverables			
1.7 Intermediate deliverables (if applicable) triggering reimbursement by the Commission with schedule for reimbursements	Intermediate deliverables	Date	Amounts
1.8 Total amount (including EU and national funding)			
1.9 Adjustment(s) method			
1.10 Verification of the achievement of the result or condition (and where relevant, the intermediate deliverables)			

<ul style="list-style-type: none"> - describe what document(s) will be used to verify the achievement of the result or condition - describe what will be checked during management verifications (including on-the-spot), and by whom. - describe what are the arrangements to collect and store the data/documents 	
<p>1.11 Arrangements to ensure the audit trail</p> <p>Please list the body(ies) responsible for these arrangements.</p>	