



## European Cooperation Opportunities and Funds in the Field of Science

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### Abstract

*This paper presents the main current European programmes managed by the European Commission, providing funding opportunities in the field of education, training, research and innovation.*

*The paper starts with an introduction to the Europe 2020 strategy that the European Union is pursuing to create the conditions for a smarter, sustainable and inclusive growth and that provides the background to the funding Programmes in the period 2014-2020.*

*The paper then focuses its attention on two funding Programmes that can be interesting for students, teachers, professors and researchers to finance their language teaching and learning experiences, their researches, their mobility and their career development:*

- *Erasmus+ providing funding opportunities in the field of Education, Training, Youth and Sport*
- *Horizon 2020, the new 70 billion budget Programme, for promoting investments in Research and Innovation*

*The paper presented each Programme's main objectives, funding schemes and budget.*

*Examples of initiatives, already funded by the European Commission for promoting Multilingualism and mobility are provided.*

### The Political Framework

Europe 2020 is the growth strategy of the European Union that aims to creating the conditions for a smarter, sustainable and inclusive growth. Five key targets have been set for the European Union to achieve by the end of the decade focusing on:

1. Employment (75% of the 20-64 year-olds to be employed).
2. Research and development (3% of the GDP to be invested in R&D).
3. Climate change and energy sustainability (greenhouse gas emissions 20% - or even 30%, if the conditions are right - lower than 1990); 20% of energy from renewables; 20% increase in energy efficiency
4. Education (reducing the rates of early school leaving below 10%. At least 40% of 30-34-year-olds completing third level education)
5. Fighting poverty and social exclusion (at least 20 million fewer people in or at risk of poverty and social exclusion).

The Europe 2020 strategy also includes seven flagships such as innovation, the digital economy, employment, youth, industrial policy, poverty, and resource efficiency.

### Introduction to the Erasmus+ Programme

Erasmus+ is the EU programme for education, training, youth and sport that replaces the Lifelong Learning Programme, Youth in Action as well as five other international programmes starting from 2014.

The general aim of the Erasmus+ Programme is to contribute to the achievement of the objectives of the Europe 2020 Strategy, as well as of the objectives of the strategic framework for European cooperation in education and training (ET 2020), including the corresponding benchmarks.

The specific objectives of the Erasmus+ Programme are to:

- improve the level of key competences and skills, with particular regard to their relevance for the labor market and their contribution to a cohesive society;
- foster quality improvements, innovation and internationalization of education and training institutions;
- promote the emergence of a European lifelong learning area and support the modernization of education and training systems;
- enhance the international dimension of education and training;



- improve the teaching and learning of languages and to promote the EU's broad linguistic diversity and intercultural awareness.
- Promote multilingualism

### The Structure of Erasmus+

In order to achieve its objectives, the Erasmus+ Programme implements the following Actions:

#### KEY ACTION 1 – MOBILITY OF INDIVIDUALS

This Key Action supports:

- **Mobility of learners and staff** provides opportunities for students, trainees, young people and volunteers, as well as for professors, teachers, youth workers, staff of education institutions to undertake a learning and/or professional experience in another country;
- **Erasmus Mundus Joint Master Degrees** supports high-level integrated international study programmes delivered by consortia of higher education institutions worldwide;
- **Erasmus+ Master Degree Loans** offers loans guarantee schemes backed up by the Programme to be used by students to follow abroad for a full Master Degree.

#### KEY ACTION 2 – COOPERATION FOR INNOVATION AND THE EXCHANGE OF GOOD PRACTICES

This Key Action supports:

- **Strategic Partnerships** aimed to promote innovation, exchange of experience and know-how between different types of organisations involved in education, training and youth.
- **Knowledge Alliances** between higher education institutions and enterprises aiming to foster innovation, entrepreneurship, creativity and multidisciplinary teaching and learning;
- **Sector Skills Alliances** supporting design and delivery of joint vocational training curricula, programmes and teaching and training methodologies, drawing on evidence of trends in a specific economic sector;
- **Capacity Building** projects to support organizations, institutions and systems in their modernization and internationalization process.

#### KEY ACTION 3 – SUPPORT FOR POLICY REFORMS

- **Structured Dialogue** taking the form of meetings, conferences, consultations and events promoting the active participation of young people in democratic life in Europe.

#### JEAN MONNET ACTIVITIES

- **Jean Monnet Activities** support excellence in teaching and research in the field of European Union studies worldwide.

#### SPORT ACTIONS

- **Collaborative Partnerships**, aimed to combat doping at grassroots level, to fight against match-fixing, to contain violence and tackle racism and intolerance in sport.
- **Not-for-profit European sport events**, granting individual organizations in charge of the preparation, organization and follow-up to a given event.

### Erasmus+ Budget

Overall Budget 14.77 Billion Euro for the entire 7 years period

KA1 (around 63%) of the total budget

KA2 (around 28%) of the total budget

KA3 (around 4%) of the total budget

Further information on the Erasmus+ Programme is available on the European Commission's website at: [http://ec.europa.eu/programmes/erasmus-plus/index\\_en.htm](http://ec.europa.eu/programmes/erasmus-plus/index_en.htm)

### Introduction to the Horizon 2020 Programme

Horizon 2020 is the programme that finances research, development and innovation activities replacing the former 7th Research Framework Programme (FP7) and part of the Competitiveness and Innovation Framework Programme (CIP).



The objectives of Horizon 2020 are:

- Raising the level of excellence of Europe's scientific research through the support to researchers in order to explore and implement their innovative ideas and by making Europe an attractive location for the world's best researchers.
- Making Europe a more attractive location to invest in research and innovation by promoting activities where businesses set the agenda and providing major investment in key industrial technologies and help innovative SMEs to grow into world-leading companies.
- Bringing together resources and knowledge across different fields, technologies and disciplines and supporting activities from research to market with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, and market uptake.

## The Structure of Horizon 2020

The Horizon 2020 Programme is organised in three Pillars.

### PILLAR 1 - EXCELLENT SCIENCE

Pillar 1 aims to reinforce the excellence of the EU's science base and to make the EU's research and innovation system more competitive on a global scale. The 1<sup>st</sup> Pillar also provides opportunities for individual and group researches according to science-driven nature, largely 'bottom-up' and investigator-driven funding arrangements.

The Pillar is divided in four areas:

- **The European Research Council (ERC)** provides flexible funding opportunities to enable talented and creative researchers (individually and in teams) to pursue the most promising frontier research.
- **Future and Emerging Technologies (FET)** supports collaborative research for advanced and paradigm-changing innovation. It finances scientific collaboration across disciplines on radically new, high-risk ideas to accelerate development of the most promising emerging areas of science and technology.
- **Marie Skłodowska-Curie Actions (MSCA)** finances opportunities for researchers' training and career development through their cross-border and cross-sector mobility.
- **Research infrastructures** ensures access to world class research facilities

### PILLAR 2 - INDUSTRIAL LEADERSHIP

Pillar 2 aims to make Europe a more attractive location to invest in research and innovation by promoting activities where businesses set the agenda.

The Pillar is divided in three areas:

- **Leadership in enabling and industrial technologies (LEIT)** provides support for research, development, demonstration, standardisation and certification of highly innovative products and services in three topic-based areas identified by the Programme:
  - Information and communications technology (ICT)
  - Nanotechnologies, advanced materials, biotechnology, advanced manufacturing
  - Space
- **Access to risk finance** offers financial support to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies.
- **Innovation in SMEs (SME instrument)** provides a SME-tailored funding scheme to stimulate all forms of innovation in SMEs, targeting those with the potential to grow and internationalise across the single market and beyond.

### PILLAR 3 - SOCIETAL CHALLENGES

Pillar 3 aims to address major concerns shared by modern societies through a challenge-based approach, bringing together resources and knowledge across different fields, technologies and disciplines.

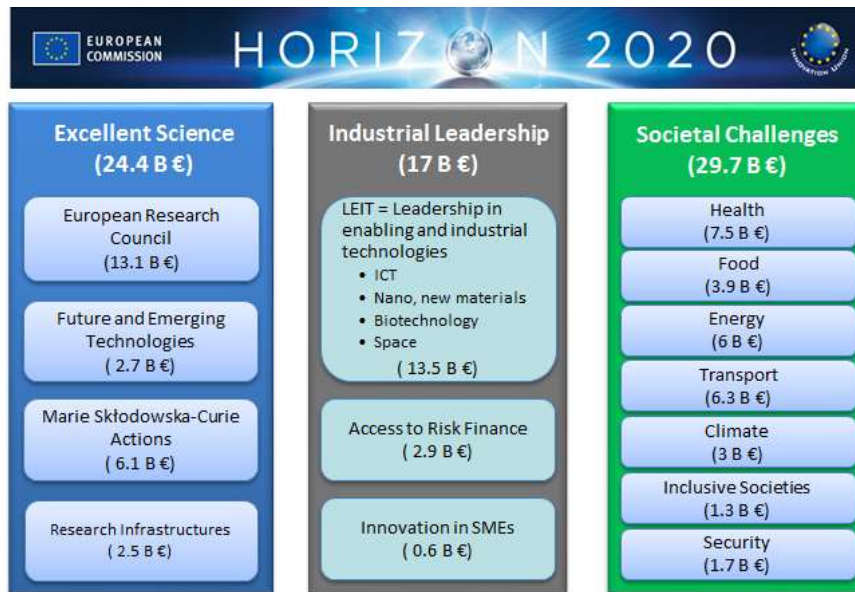
Funding focus on topic-based challenges, already defined by the Horizon 2020's Workprogrammes, published every 2 years.

The 7 challenges are:

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials



- Europe in a changing world - inclusive, innovative and reflective societies
- Secure societies - protecting freedom and security of Europe and its citizens



### Horizon 2020 Budget

The total budget for the 2014-2020 period is 70 billion euros:

- Excellent Science: 24.4 Billion Euro
- Industrial leadership: 17 Billion Euro
- Societal challenges: 29.7 Billion Euro

Further informations on the Horizon 2020 Programme is available on the European Commission's website at: <http://ec.europa.eu/programmes/horizon2020/en>





## 8. Examples of successful projects in scientific field

- E-Learning from Nature  
The E-Learning From Nature project funded by the European Commission in the framework of the Erasmus+ Programme, KA2 Strategic Partnership in the field of School Education aims to improve secondary school students' basic skills in scientific subjects.
- Med&Lang Palliative Care  
The Med&Lang Palliative Care project, funded by the European Commission in the framework of the Erasmus+ Programme- KA2 Strategic Partnership focuses on communication skills in a foreign language for supporting the teaching processes of the medical lecturers at higher education level, with a specific focus on the palliative cares.
- Chemistry Is All Around Network  
The Chemistry is All around Network project funded by the European Commission in the framework of the Lifelong Learning programme Comenius Subprogramme aims at stimulating the interest of pupils towards the study of Chemistry. It also intends to create a network of science education institutions.  
Website: <http://chemistrynetwork.pixel-online.org/>
- Chemistry is All Around Us  
The Chemistry is All Around Us European funded by the European Commission in the framework of the Life Long Learning Programme KA 1 Subprogramme aims to identify the best strategies to implement Lifelong Learning of scientific subjects, with a focus on Chemistry identified as an exemplary case study.  
Website: <http://chemistry.pixel-online.org/index.php>
- Goerudio - Managing Learning process in science education  
The Goerudio project, funded by the European Commission in the framework of the Lifelong Learning Programme - KA4. aims to explore and exploit the results of existing projects and experiences addressing the promotion of scientific knowledge at all level of education.  
Website: <http://goerudio.pixel-online.org/>
- ClimaTIC  
The ClimaTIC project funded by the Socrates Minerva Programme aims to promote transnational cooperation between schools in the field of science teaching.  
Website: <http://www.ulg.ac.be/cifen/inforef/projets/climatic/>
- EnergeTIC  
The EnergeTIC project funded by the Life Long Learning Programme KA3 aims to promote transnational cooperation between schools in the field of energy savings.  
Website: <http://labo-energetic.eu/fr/projet1.html>
- Edu Robot  
The Edu Robot project funded by the Socrates Minerva Programme aims to train students from technical schools on an efficient use of the methodologies used for transnational collaboration in the research sector, focusing in particular, on the sector of robotics.  
Website: <http://edurobot.edulife.com>
- Hippocrates  
The Hippocrates project funded by the Lifelong Learning Programme, Leonardo da Vinci Sub-Programme, Development of Innovation (DOI), The project provided trainers who work in the health sector with the necessary skills for knowledge management.  
Website: <http://www.hippocrates.fadgradenigo.it>
- Happy  
The Happy project funded by the Lifelong Learning Programme, Leonardo da Vinci Sub-Programme, Development of Innovation (DOI), The project has the aim to promote an holistic approach in the delivery of home care assistance through the training of doctors and nurses who work in the field.  
Website: <http://heppy.projectize.eu/>



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