
STUDY ON EUROPEAN FUNDING PROGRAMMES FOR SUSTAINABLE DEVELOPMENT

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Abstract

The paper reviewed the main historical development steps that led to the Agenda 2030, the strategy Europe 2020 and the Horizon 2020 (H2020) funding programme. It analyses the interim reports and the actual status of the H2020 programme especially in relation impact and achievement of its objectives. By exploring the results some questions arose if the programme setup is in line with objectives and the strategy. The analysis leads to the assertion that overall the programme is very beneficial and should be exploited much better but it is questionable whether the high amount of coordination effort is really meaningful and justifiable and if the Eastern European countries should be more involved. Similarly, when planning the follow-up Horizon Europe programme, the European Commission should think about simplifying some of the rules and reporting so as not to fund an entire advisory industry with the European funding.

Keywords

Sustainability, European funding programmes, research and development, Horizon 2020, Horizon Europe

JEL Classification

Q01, O3, O44, E62, G28

Introduction

Global sustainability and resilience is a vision of a world without hunger and poverty, with economic stability and growth without endanger the ability of future generations by overconsumption of the natural resources, and a healthy and protected planet. But to achieve this, there needs to be a change in people's awareness and action, new and innovative solutions, and supportive and inclusive policies. Based on the result of a poll published by the Pew Research Center at the beginning of 2019, which questioned more than 27,000 people in 26 countries in spring 2018, the majority of people worldwide see climate change with 67% as the greatest threat to security and global prosperity (Poushter and Huang, 2019). Certainly many efforts have been made in recent years to thwart climate change, new strategies and initiatives have been launched, international declarations and agreements have been signed, and science and research have been supported, and intensively has been looking for new solutions. However, there is a shortage of implementation and realization. Therefore, it is not surprising that the youth take to the streets to fight for their right to a healthy and healthy planet and protests against the inadequate action in the climate crisis. Of

course, the “Fridays for Future” campaign is not uncontroversial, but this move clearly shows that time is running out and it does not get better to just talk about it. As J. W. Goethe has rightly stated: “It is not enough to know that one must also apply; it is not enough to want, you have to do it” (Goethe, 2019 p. 355).

The 2030 Agenda and the Europe 2020 Strategy both aim to promote sustainable development, combat hunger and poverty, safeguard work and resilience, and, above all, counteract climate change and protect the planet. At the same time, both see an important point in achieving their goals in the research and development of new solutions (Oțoiu, Bere & Silvestru, 2017). The key financing programme for the Europe 2020 strategy is Horizon 2020. This programme was launched in 2014: “To contribute to building a society and economy based on knowledge and innovation across the Union” (EU, 2017, p.3). The programme expires at the end of 2020 and plans for the follow-up programme Horizon Europe are well under way. Therefore, the goal of this study was on the one hand to summarize the main historical development steps that led to the Agenda 2030, the strategy Europe 2020 and the Horizon 2020 funding programme and on the other hand to analyse the interim reports and the actual status of the H2020 programme especially in relation to impact and achievement of its objectives.

The main historical development steps that led to the Agenda 2030

Since years the word “sustainability” seems to be ubiquitous in all fields of economics, politics, science and media and it is used in varied connection with environment and climate protection, energy and food security, innovation and mobility, as well as with different management fields, education, development, design and marketing. Due to the exhaustless amount of correlations and the different stakeholders it is hard to gain a common understanding, therefore what sustainability really means. On these grounds the authors decided to give a short historical derivation of sustainability, sustainable development and to summarize the main cogent findings which at the end have led to the Agenda 2030.



Fig. no. 1 Selected historical steps on the way to the Agenda 2030

Source: Authors design

The term “sustainability” was demonstrably used for the first time in the publication from the German mine captain Hans Carl von Carlowitz in 1713 in the meaning of conservation and securing. In his book “Sylvicultura oeconomica” he wrote about the concept of sustainability in forestry which aims to reach a balance between forest-use and reforestation to ensure a continuous, consistent and sustainable usage of wood for the mining. In this sense, sustainability means the use of a natural system that can be regraded in such a way that its essential properties are preserved and its existence can be natural renewed (Pufé, 2017).

As the next important milestone on the way to sustainability awareness, the publication of the “Club of Rome” in 1972 must be mentioned. Their study “The Limits to Growth” was based on a computer simulation and alarmed the world about the finiteness of our natural resources and that the humanity is working on their own destruction. They predicted, that

within the next hundred years the end of the growth potential of the world will be reached if the increase in the world's population, the progressing industrialisation, the environmental pollution, the exploitation of the natural resources continues (Meadows et al., 1972). This study denounced the depletion of the world and called for a rethink and was followed by the next major step, 15 years later.

In 1987 the World Commission on Environment and Development (WCED) (a.k.a. Brundtland-Commission) published their report: "Our Common Future". This report contains the to-date mainly used definition for sustainable development: "Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p.16). This definition forms the fundament of the sustainability movement, which in the subsequent years through the Rio-summit (1992), the United Nations Climate Change Conferences (1995-today), numerous international and national agreements and the founding of state and non-governmental organizations further developed. It is very important to differentiate that "sustainability" is related to the state of things and permanence, and that "sustainable development" is the path to sustainability, that means, movement and processing (Pufé, 2017).

Lastly, another 28 years later after the "Brundtland-report", in 2015 the "2030 Agenda for Sustainable Development" with the 17 Sustainable Development Goals (SDGs) was adopted by the member states of the United Nations. This Agenda came in to force on the 1st January 2016 and is valid for all countries of the world and each country has to establish national sustainable development programmes, actions plans and policies for achieving those goals. The following five action-guiding principles and core messages (5P's) were prefixed to the 17 goals to point the connection between them:

- People – For a world without poverty and hunger;
- Planet – Protection of the planet and limitation of the climate change;
- Prosperity – Ensure prosperity for all humans and fair globalization;
- Peace – Promotion of peace and observance of human rights;
- Partnership – Build up and maintenance of global partnerships (BMZ, 2017).

These development goals have a timeframe to be achieved within the next 15 years until 2030 and will be monitored with national and global reports. Therefore a set of 232 global indicators was established to measure the progress of the 17 goals on regional and national levels (EU, 2017). Unfortunately the global "Sustainable Development Goals Report" from 2017 and 2018 showed in a disillusioning way that the progress is not good enough by half to reach the targets by 2030 and that urgently meaningful and resilient actions must be taken by each country to bring the agenda to life (UN, 2017 and 2018). Therefore, numerousness of international organisations and countries started evaluating and implementing new innovative strategies and solutions. The European Union and the majority of their countries had already policies and initiatives for sustainable development which were updated and extended in the last years to reflect the Sustainable Development Goals and the newest scientific findings and research results. Amongst them, the Europe 2020 strategy with their aim for smart, sustainable and inclusive growth can be seen as the leading strategy. It was adapted in June 2010 and with the five key elements: Employment, research and development, climate change and energy, education, poverty and social exclusion. A mid-term review was conducted in 2014 – 2015 including a public consultation. This review has shown, that the strategy is still a suitable framework and will be pursued (EC, 2018). In the meantime additional policies have been established to be more concrete to single SDGs e.g. EU 2030 Climate and Energy Policy Framework (Jan 2014), EU Food 2030 (Oct 2015) and EU Circular Economy Package (Dec 2015). All those European policies and initiatives need to be unambiguous and entirely implemented and enlarged with further actions to change and improve their focus areas. They also need to be regularly reviewed and the

results believable monitored to ensure their effectiveness and to considering new facts and evidence which might come up or been proven since their establishment (EC, 2019c). The election of the new European Parliament in May this year and the approaching end of the horizon of the Europe 2020 strategy will bring up additional challenges as well as the United Kingdom leaving the European Union and the growing populism within several European countries. But also the challenges from outside Europe will have significant influences on the success of these policies and initiatives and their practicability. An important cornerstone for the success of these policies, initiatives and the sustainable development is research and development and, in particular, their financing, which will mainly be subsidised through the European Structural and Investment Funds, the European Fund for Strategic Investments (EFSI), the LIFE programme and Horizon 2020. For this reason the following part of the research focuses on the two major funding programmes, their status, first results and their future plans.

European funding programmes for research and development

Overall the European Union has around 50 search funding programmes implemented through the Multiannual Financial Framework to support European policies and initiatives (EC, 2019b). In the following table the details of the funding programmes which support sustainable development are consolidated including their targets, measures and budget size.

Table no 1 European funding programmes with reference to sustainability

Title / Budget	Topic / Timeframe	Targets	Measures
ESIF €351 bn.	http://ec.europa.eu/regional_policy/en/funding European Structural and Investment Funds (2014-2020)	<ul style="list-style-type: none"> • Regional development • Research & innovation • SME competitiveness • Low carbon economy • Environment & resource efficiency 	<ul style="list-style-type: none"> • Regional Development Fund • Social Fund • Cohesion Fund • Agricultural Fund for Rural Development • Maritime and Fisheries Fund
INVEST-MENT PLAN €315 bn.	http://ec.europa.eu/priorities/jobs-growth-and-investment/investment-plan Support of investment in EU (2015-2017)	Pipeline of EU projects with a focus on: <ul style="list-style-type: none"> • Large infrastructure • Research & innovation • Employment • Environmental sustainability 	<ul style="list-style-type: none"> • New financial tool: EFSI (European Fund for Strategic Investments), in partnership with the European Investment Bank
Horizon 2020 nearly €80 bn.	https://ec.europa.eu/programmes/horizon2020 EU Framework Programme for Research and Innovation (2014-2020)	<ul style="list-style-type: none"> • Resource efficiency • Water • Waste • Key enabling technologies • SMEs 	<ul style="list-style-type: none"> • Innovation action • SME instrument • Public procurement of innovation • Pre-commercial procurement
Life €3.4 bn.	http://ec.europa.eu/environment/life / www.ec.europa.eu/life EU Funding Instrument for Environment and Climate Action (2014-2020)	<ul style="list-style-type: none"> • Environmental technologies • Resource efficiency • Industry & production • Waste • Water 	<ul style="list-style-type: none"> • Demonstration & pilot • Capacity building • Best practice • Information, awareness & dissemination

Source: Authors compilation based on the references in the table

In the next part of this article the Horizon 2020 programme will be reviewed in more depth because this builds the main funding basis for the European 2020 strategy and aims to support strategy goals for smart, sustainable and inclusive growth and jobs (EU, 2016). The idea of promoting research and innovation at European level has always been of central importance within the European Union and therefore a research-related policy instrument was needed. On the 25 July 1983 the council of the European communities has announced the first framework programme for community research and development (FP1) from 1984 to 1987 with an overall budget of €3.75 billion. The second framework programme (FP2 - 1987 to 1991) had a budget of €5.4 billion and the third framework programme (FP3 - 1990 to 1994) had a budget of €6.6 billion (EC, n.d.). This increasing of the budget reached an unprecedented dimension with the eight framework programme the so called Horizon 2020 programme, which started in 2014 with the largest ever budget of about €80 billion for the timeframe of 7 years from 2014 to 2020. H2020 serves as the financial instrument and the framework of the Europe 2020 strategy for promoting economic growth, job creation and safeguarding Europe's global competitiveness (EC, 2017). The figure below show the funding periods of the framework programme starting with the fourth, their main targets, the number of realised projects and the budget.

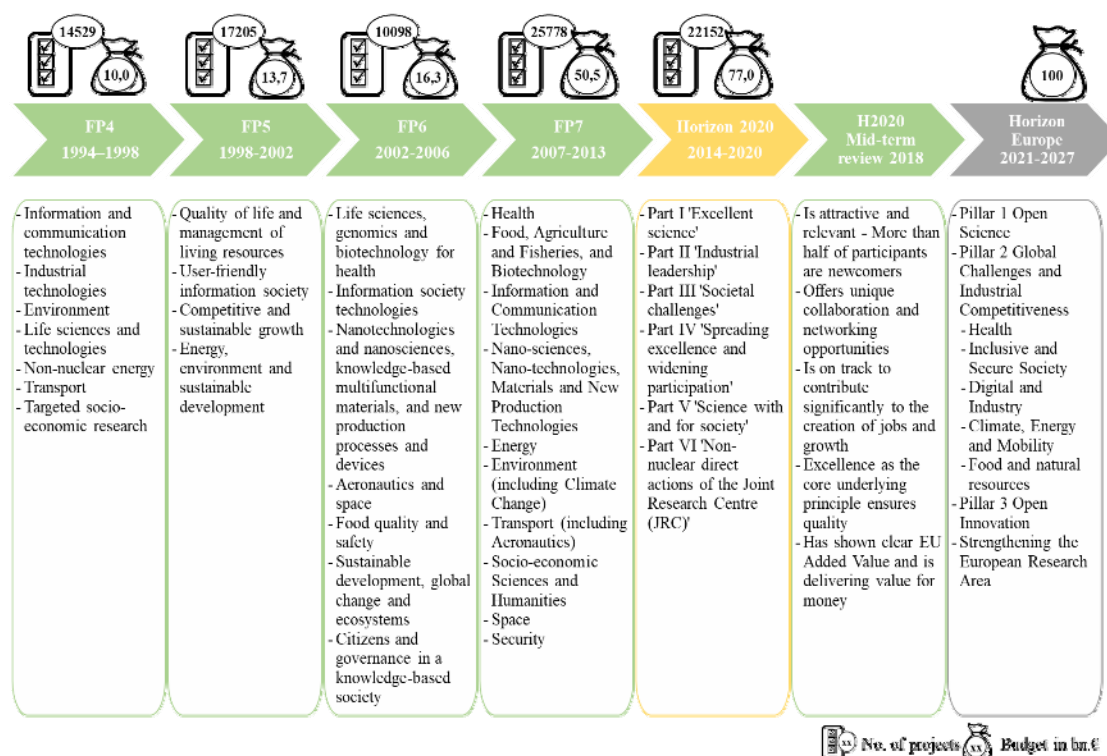


Fig. no. 2 Funding periods from the 4th Framework programme up to Horizon Europe
 Source: Authors compilation based on research

The Horizon 2020 programme was reviewed for the first time in 2015 and the last review was published in 2018. In the table below the key findings from both reports and the actual Horizon Dashboard are listed, whereat the actual results can be compared with the results of the FP7 programme.

Table no. 2 Main figures from the Horizon 2020 review and actual status compared to FP7 final figures

Figure	Report 2015 (EU, 2015)	Report 2018 (EU, 2018)	Current status (EC, 2019a)	FP7 (EC, 2015a, b)
Timeframe	Jan 2014- Dec 2014	Jan 2014- Dec 2016	Jan 2014- Apr 2019	Jan 2007- Dec 2013
Applications	123,334	400,000	658,338	598,080
Eligible Proposals	36,732	115,235	190,867	139,292
Signed Grants	3,236 (until end Apr 2015)	13,903	21,876	25,053
Success Rate	n/a	12,06%*	11.46%*	17,98%*
EU Contribution	5.5 bn.€	24.8 bn.€	40.0 bn.€	50.5 bn.€
Newcomers	38%	54.4%	n/a	74%
Countries	73	139	156	152
Participations	6,774	58,964	106,215	134,00
SME Participations	1.030	4.990	21,832	24,000

*by the authors calculated values – Success Rate = Signed Grants / Eligible Proposals

Source: Authors compilation based on the references in the table

Results and discussion

The evaluation of the figures from the H2020 programme shows, that there is a high interest and demand for founding. About 20.5% of the participants are from SMEs and 73% are countries outside Europe. The actual figures are very close to the final figures from FP7 and there are just about 21 months to go until end of 2020. In terms of job creation and growth, the Horizon 2020 evaluation report shows that the programme fulfils its mission and that there would have been more potential because around € 62 billion would be needed to finance all projects that meet the specified excellence criteria and 83% of the projects would not have been realised without this investment (Fornero and Haupt, 2018). These statements suggest that H2020 is meaningful and purposeful, but there are also other voices and thoughts. For example H2020 promised “more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market” (EC, 2017). But why then only about 20.5% participation are from SMEs and the contribution to the private sector is 29.1%, who will bring the idea to the market? Another statement is, that the H2020 has simplification as one major features. But why is there a whole industry of consulting firms that offer their services, and thereby valuable funding is used for these services? It is also surprising that approximately 42.6% of the total funding for the coordinator role is awarded. It is clear that a project with several partners from different countries requires a degree of coordination and regular and meaningful reporting but the percentage is not reflecting simplification. Another aspect is the distribution of subsidies, the upper ranks are mostly occupied by Western European states (Germany, United Kingdom, France, Spain, and Italy). Of course, these are probably the countries that contribute the most to the financing pot for H2020, but should not it be the aim of the projects to promote the less developed and backlog demand countries of Europe? In the actual list only about 12% of the participants are coming from Eastern Europe countries and 82% from Western Europe countries and the Net contribution is about 7% for Eastern Europe countries and about 90% for Western Europe countries. Some of those aspects from above where also recognise in the „Commitment and Coherence – Ex-Post Evaluation of the 7th EU Framework Programme” (EC, 2015a) and the “Key findings from the Horizon 2020 interim evaluation” (EU, 2017).

Conclusions

The Horizon 2020 programme has almost reached his horizon and the planning for the follow-up programme Horizon Europe is in full swing. It should have a budget of € 100 billion and again a timeframe of again seven years from 2021 to 2027. It will be divided into three pillars: Open Science, Global Challenges and Industrial Competitiveness and Open Innovation (FFG, 2019). One of the big challenges will be to compose the loss of the UK as one of the key net contributors. As well to improve and simplify the processes and reporting and to attract with that more participants from the private sector and especially from SMEs. The aim of this study was to recap the main steps of the sustainable development that lead to the Agenda 2030 and the related Europe 2020 strategy with its funding programme Horizon 2020 and to raise awareness about the programme and its potentials as well to identify some critical aspects that needs to be considered for the planning of the follow-up programme Horizon Europe.

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