



MINISTERO DELL' ISTRUZIONE, DELL'UNIVERSITÀ E DELLA RICERCA

A VISION DOCUMENT

in support of the

ITALY POSITION STATEMENT

on the

Interim Evaluation of Horizon 2020

and the

Next Framework Programme

for the European Research



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FOREWORD

Italy, as one of the founder members of the European Union and a research-intensive country, has contributed to the co-design of and has successfully participated to the European Framework Programmes for Research since their beginning.

In February 2016, the Italian Government produced a comprehensive statement on the future of Europeⁱ, in which it was emphasized that *“the EU should adopt an integrated set of initiatives, to stimulate knowledge creation through investment in education and research, which are the main drivers of innovation”*.

In the first semester of 2017, the Ministry for Education, University and Research (MIUR) launched a public consultationⁱⁱ, addressed to all those who are registered in the national researchers' database, from the public and the private sector, to collect opinions on the current Framework Programme for European Research (FP), Horizon 2020 (H2020), which was just beyond its halfway, and on the most-wanted (and most unwanted) characteristics of the next FP.

More than 5.000 responses could be analysed and clustered into a limited number of major inputs, representing the basis for a National Position Statement, which enjoyed also the contributions from the National Representatives in the Configurations of the H2020 Program Committee, in the governance bodies of the Joint Programming Initiatives, in the European Research Area (ERA) Committee and in the ERA-related Groups.



GENERAL PRINCIPLES

The advancement of knowledge and its rapid translation into innovation for the benefit of the whole society should be the two reference points guiding first the co-design and subsequently the implementation of the next FP.

Supporting research and education enables innovation and promotes industrialization in a sustainable way, setting the basis for a long-term growth. Solid evidence shows that R&I have a substantial impact on productivity. Advances in knowledge and technological breakthroughs are the foundations of increased productivity that the economies of industrial nations have experienced over time.

'*Knowledge-oriented research*' and '*solutions-oriented innovation*' should never be considered as separate entities, the less so as alternative or antithetic. Rather, the FP activities, and, most important, researchers and innovators, the human actors and actress of the process, should freely, openly and seamlessly flow from one to the other in a virtuous circle, rotating both clock- and anticlockwise.

This is the basis for building a knowledge-based, cohesive society, where competition means for the best talents to struggle jointly to find out usable and sustainable solutions to the challenges the community of humans has to cope with, nowadays and in the foreseeable future. It is not a competition of the ones against the others, rather, it is a time trial, where European researchers and innovators, together with all European citizens, co-operate as a team to find out solutions, before it is too late for all of us.

THE EUROPEAN RESEARCH AREA AND THE FRAMEWORK PROGRAMME

The main research policy objective of the European Union is the full implementation of a European Research Area (ERA), as per Article 179 of the Treaty on the Functioning of the European Union.

The multiannual framework programme (FP), as per Art. 182 of the Treaty, represents the main support instrument for implementing research at EU level.

Surprisingly, these two pillars of Hercules marking the access to the concept of European Added Value have historically evolved independently from each other.

Italy firmly believes that transnational research, supported by the FP financial resources, involving multiple Member States (and Associated Countries) across the whole of Europe and beyond, is instrumental for leveraging the achievement of a fully functional ERA. Therefore, Italy expects that the ERA prioritiesⁱⁱⁱ will be distinctly echoed in the formulation of the next FP.



MOST WANTED FEATURES OF THE NEXT FP (as compared to H2020)

1. Excellent, enthusiastic and rewarded human resources for research

Research cannot be done without researchers: a fruitful, consistent dialogue between research and innovation for the good of the whole society cannot take place without researchers.

Therefore, researchers, with a special emphasis on first stage researchers and women researchers, should be at the core of the FP much more than it has been the case in H2020, as they are the main effectors of socio-economic growth.

This principle does not contrast at all with the need for promoting 'citizen science'. Italy fully subscribes the Third Recommendation of the Lamy Report "*Educate for the future and invest in people who will make the change*", but these activities can only be mediated by researchers to produce tangible results.

The advantages of an Open Science and Open Innovation approach for the efficiency of the R&I process and the quality of its results are so apparent that it should be pursued decidedly throughout the next FP. However, it has to be fully acknowledged that this implies new efforts and additional work for the involved individuals (researchers and innovators) and their organisations (universities, research centres, enterprises etc.). These efforts should be appropriately and adequately incentivised and rewarded in the next FP, at the level of evaluation of individuals (e.g. in applications to the MSCA programmes) and institutions (e.g. in research and innovation actions' proposals). Accordingly, research performing organisation practicing the principles for Open, Transparent and Merit-based Recruitment^{iv}, which are a pre-requisite for a truly open science approach, should be appropriately incentivised.

2. Changes within a stable architecture

Having seen that the 3-pillars architecture has contributed to deciphering the H2020 main areas of activity, the Italian R&I system (but, we believe, is not the only one) demands for some 'architectural stability' in the next FP.

Within the Excellent Science (whatever its name will be) pillar, programmes such as the European Research Council (ERC) and the Marie Skłodowska Curie Actions (MSCA), which contributed to maintaining and enlarging a reservoir of talented, gender-balanced human resources for R&I in Europe, thus promoting conspicuous progress along the 3rd and 4th ERA Roadmap priorities, should maintain adequate support for playing their crucial role.

In particular, Italy strongly appreciates the role of the most recent evolution of the MSCA for promoting the relationship between innovators and researchers, between society and academia.

Therefore, we would like to see the investment on the MSCA re-equilibrated with that of the ERC, avoiding an excessive polarisation of the First Pillar on the ERC.

Furthermore, fully sharing the considerations expressed in the recent *Science Europe Statement on a More Meaningful Research Impact Assessment*^v, we



would encourage 'impact' in its widest meaning to be included among the ERC criteria for proposals' evaluation.

As to the Societal Challenges pillar, and, most important, the Societal Challenges-based approach, it should be kept, avoiding drifts in the direction indicated by the Lamy Report. Our views on this aspect are expressed in more detail in paragraph number 4 below.

The Third Pillar should keep focus on the SMEs, which, in many EU MS and AC, are lagging behind their competitors from Asia and North America. Innovation in SMEs, be it radical or incremental, is expected to keep all its importance for economic growth, social cohesion and wellbeing, now more than ever, within the framework of the Fourth Industrial Revolution.

3. Adequate Financial Resources

In line with the position expressed by the European Parliament, with the plea of the Lamy report, and with a number of studies making the economic case for investing in R&I, Italy argues in favour of a substantial increase of the FP budget within the next Multiannual Financial Framework (MFF)^{vi}.

To achieve this objective, a strong support from the European citizens is indispensable, a support that can only be obtained if the ability to progress towards the solutions of the jointly identified Societal Challenges is consistently demonstrated.

Although the FP budget has to be secured and fixed for the whole MFF duration, the rapidly changing contexts to which we are starting to become accustomed point to the need for an abundant reserve of flexibility, to account for changes in the rank of priorities, but also for the emergence of new priorities.

Foresight exercises are extremely important and useful, but it must be acknowledged that not everything is foreseeable. Thus, the approach of a flexible allocation of resources to biennial 'work-programmes' should be maintained, without for that losing the long-term vision.

As to the financial instruments, we welcome a balanced experimentation of alternative R&I funding modalities; however, we are not in favour of an excessive drift toward a finance-driven approach (*'loans instead of grants'*), which would fatally displace 'elsewhere' the criteria and actors for decisions about R&I funding and increase the risk of betraying the noble mission of R&I, which should remain the good of all our citizens.

A balanced approach should also be maintained in the allocation of resources to programmes/projects oriented towards low TRL activities and to those more oriented towards high TRL activities. Indeed, the results of our public consultation indicate that, presumably, a right equilibrium was achieved in H2020, which should not be dramatically altered.



4. Excellent Research, Innovation AND Impact: towards a challenge-based, mission-oriented approach

A vision which opposes, as being in contrast to each other, excellence and impact seems to be severely outdated.

As stated in the previous paragraph, adequate financial resources are required for successfully providing answers to the demanding challenges our societies are facing. In fact, it is easy to ask for more money, the problem is how to convince the resources' owners, i.e. the taxpayers.

Italy believes that the key which can open the 'money safe' is impact, of course as a product of excellent research.

It should be acknowledged that the R&I suppliers sometimes have promised the society too much, sometimes too early and sometimes at an unrealistically low cost. These promises may undermine the whole system credibility, are not compatible with a Responsible Research and Innovation behaviour and should therefore definitely be avoided in future.

We are firmly convinced that the challenge-based approach of the current FP, H2020, has contributed to ensure coherence and, most important, to improve effectiveness and impact of the EU R&I funding landscape.

The United Nations' Sustainable Development Goals (SDGs) represent an excellent reference framework in which to inscribe and to which streamline the challenge-based approach of the new FP, where the need to avoid overlaps should be made compatible with the equally important need to avoid uncovered areas.

It can be anticipated that most, if not all, the societal challenges (SC) of H2020 may find a place in the new framework. However, in co-designing the new FP, the H2020 SC should be re-evaluated and, in that process, in full coherence with UNs' SDGs and with their Sendai Framework 2015-2030^{vii}, Italy asks to see included two emerging, undoubtedly major and global challenges, such as Migrations & Integration, and Disaster Risk Reduction.

According to a responsible research and innovation attitude, we cannot and we should not promise that, within the lifespan of the new FP, the SDGs will be achieved. It would be therefore a wise and serious option to complement the challenge-based approach with a mission-oriented approach.

We consider most appropriate a definition of 'missions' as ambitious but feasible, high-impact objectives, embedded within a challenge-based approach.



Dozens of explanatory examples for the concept of mission could be proposed. To quote just one, within the framework of SDG 3 “*Good health and well-being*”, a challenge such as “*Fighting against neurodegenerative, age-related diseases*” could be inscribed and herein “*To identify suitable experimental models for Alzheimer’s disease by 2022*” could be embedded as a mission, noting that a mission should be formulated as an objective and should include a deadline.

5. The Joint Programming Process and the role of Partnerships within the new FP and its challenge-based, mission-oriented approach

The Joint Programming Process (JPP) has been and remains crucial for providing an operational, concrete meaning to the concept of European Added Value (EAV) and for progressively streamlining National and European research, with the aim of reducing fragmentation and eliminating unnecessary duplications.

The JPP should be seen in a wider perspective with respect to the recent past, and not limited to the relatively narrow domain of the 10 existing Joint Programming Initiatives.

Evidently, the JPP has already produced excellent results in shaping the European R&I landscape, with a distinct EAV, in its hardware component, i.e. the research infrastructures (RI) of European interest and level, which have been identified by a co-operative process through the European Strategy Forum for RI (ESFRI) roadmaps.

The software component of the JPP, i.e. the research programmes, is much less advanced, mature and structured than its hard- counterpart.

It should be frankly recognised that, not always but more frequently than it would be desirable, ‘European’ programmes within the FP are the bare sum of National projects, without any added streamlining/aligning effect on the National programmes and, most important, without any perceived EAV.

To improve the effectiveness of a truly joint programming of the EU R&I landscape, that may sometimes appear too complex and confused, Italy proposes a progressive convergence of the soft- and hard- components of the JPP.

To achieve this objective, we suggest that, if they do not already exist, or do not aggregate spontaneously, the formation of open and inclusive societal partnerships around the identified challenges should be encouraged.

The process of jointly identifying the ‘missions’ within each challenge, which represents the most problematic aspect, could evolve as an ‘ESFRI-roadmap-like’ co-design procedure, based on available evidence and on foresight exercises.

Thus, within each challenge-specific societal partnership, conceived as a strategic hub for R&I on the relevant challenge, a ‘Strategy Forum’ could be



established, which could be responsible for designing the missions' roadmap, based on what can reasonably be expected in the foreseeable future as scientific, social and technological developments, but always maintaining an appropriate reserve of flexibility to face with 'the unexpected'.

We believe that a combined Challenge-based, Mission-oriented Approach, managed by open and inclusive Societal Partnerships, including all relevant stakeholders, could considerably simplify the European R&I landscape and its funding.

The funding 'instruments', the array of which could possibly be simplified, should never be confused with the strategic Joint Programming Process. It will be up to the Societal Partnership responsible for the relevant challenge to select the most appropriate instruments to successfully fulfil the identified missions, within the set deadlines.

We definitely believe that EU-level platforms could favour the operations of the Societal Partnerships, and look forward to the implementation of a European Open Science Cloud.

Possibly, once its characteristics and scope become clearer than they are at present, also a European Innovation Council could fit well within this landscape, provided that it is endowed with the main goal of stimulating a more risk-prone attitude by investors, which is where Europe severely lags behind its competitors, particularly the US. Private risk-taking investors and a pervasive and intensified public procurement are mostly needed to support EU SMEs, which need to become 'smart factories' and cannot perform this transition without an adequate financial and regulation support.

6. Making the European R&I landscape wider

Europe is small, and its 28 National research systems individually are too small as compared with the global competitors, some of which are growing, by quality and size, at a speed which is an order of magnitude faster than those of the Old World. Thus, the EU cannot afford to further circumscribe its R&I potential to a limited number of MS, or, worse, to a limited number of regions in a limited number of MS. On the contrary, the EU should tap into the full potential of all the MS and of all their regions.

Therefore, Italy would favour a boost of the 'widening participation and spreading excellence' concept in the next FP. This should include a revision of the criteria for selecting the potential beneficiaries, which should of course be selected on the basis of their promising return of investment, but also on a sounder evaluation of the baseline conditions than that adopted in H2020. The



criteria for selecting the regions which benefit from the European Structural and Investment Funds (ESIF) could be a good starting basis.

Furthermore, for the sake of widening participation and spreading excellence, the dimension of the projects/proposals eligible for funding by the FP should encourage application by newcomers, especially those from countries/regions historically less participating and less 'winning'. This does not preclude of course the possibility to support big projects, when justified by the scope, but the doors should remain open to small-to-medium projects.

A deeper cohesion within the EU will be also decisively promoted by further efforts aimed at increasing the interoperability of our higher education systems. To achieve this goal, a tighter relationship between the ERA and the European Higher Education Area should be consistently fostered and supported, with a view to making a new generation of European researchers and innovators grow.

7. Synergies and simplification

The principle of establishing synergies between the FP and the ESIF, duly promoted in H2020, has been extremely difficult to be practiced in view of the scarce compatibility (if not overt contradiction) between the respective regulations.

Therefore, Italy recommends that, when defining the regulations of the next FP and the next ESIF cycle (or perhaps even in the last period of the current budgetary cycle), extreme care should be taken in verifying that the principle can be easily applied by all MS.

The 'Seal of Excellence' concept, applicable to all the mono-beneficiary programmes, has been welcomed by the Italian research system (in its private and public dimension) and should be maintained in the next FP.

As to the frequently invoked 'Simplification' issue, Italy acknowledges the efforts to introduce simplified rules of participation into the H2020 regulations. Nonetheless, Italy would favour further simplification steps in terms of procedures, particularly with regard to co-financed programmes, where a chaotic plethora of different funding mechanisms still exists.

Again, strong efforts should be deployed not to discourage potential applicants (particularly newcomers) due to an excess of bureaucracy and of a mistrust-based *ex ante* financial scrutiny.

The establishment of a single entry point for grants (including for co-funded financial instruments) would considerably simplify and widen the participation, especially of the most promising subjects in the innovation sectors, as SMEs and Start-Ups.

The number of EU-level financial instruments and the rules for applying to them is currently an obstacle to their efficient use. Thus, we would encourage the option of a single fund which would provide loans, guarantees and risk-



sharing instruments - blended with EU grants where appropriate - depending on the nature of the programmes/projects.

About the time to grant issue, Italy considers essential to balance the needs, expressed by the scientific community and by the European Parliament, to speed up the process with those, underlined by policy makers, not to make compromise with the quality of evaluation.

8. An international dimension

Remaining truly Open to the World is a need for each and every Nation on the face of Earth to meet the global challenges we have in front of us, climate change being the most striking example. This of course applies to the EU as well.

Therefore, the next FP should maintain the international dimension which characterized its predecessors. However, a renewed attention should be attributed to the need not to 'dilute' this dimension across any single initiative, but rather to concentrate it on where extra-EU R&I co-operation represents a true added value to tackle a specific challenge and its embedded missions.

In particular, Italy expects to see, in the next FP, a special attention devoted to the Mediterranean Area and to the African Continent in general, for jointly tackling R&I issues related to challenges such as Migrations and, overall, to the achievement of the universally shared Sustainable Development Goals.

Endnotes

ⁱ A Shared European Policy Strategy for Growth, Jobs, and Stability

http://www.governo.it/sites/governo.it/files/ASharedPolicyStrategy_20160222.pdf

ⁱⁱ "Consultazione sulla valutazione in itinere di Horizon 2020 e sulla definizione del futuro Programma Quadro per la Ricerca e l'Innovazione in Europa" <https://consultazionefp9.miur.it>

ⁱⁱⁱ http://ec.europa.eu/research/era/index_en.htm

^{iv} https://cdn1.euraxess.org/sites/default/files/policy_library/otm-r-finaldoc_0.pdf

^v https://www.scienceeurope.org/wp-content/uploads/2017/07/SE_PositionStatement_Impact.pdf

^{vi} "Multiannual Financial Framework: a Strategic Tool for Meeting the goals of the European Union": www.politicheeuropee.it/file_download/2933

^{vii} <http://www.unisdr.org/we/inform/publications/43291>