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**Severo Ochoa and María de
Maeztu Alliance (SOMMa)
position paper on FP9**



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0. EXECUTIVE SUMMARY

During 2018, the European Commission (EC) is consulting different stakeholders and elaborating a comprehensive proposal for the next generation of financial programmes for the post-2020 Multiannual Financial Framework, which represents European long-term budget.

With this brief position paper, the [Severo Ochoa and María de Maeztu Alliance](#) (SOMMa) aims at contributing to strengthen the upcoming European Framework Programme 9 (FP9) as a pivotal instrument to expand the frontiers of knowledge and build European leadership and competitiveness through research and innovation (R&I).

SOMMa is a strong supporter of European research collaboration and an active participant in the European Framework Programmes. Therefore, SOMMa would like to contribute to the public consultation on the definition and design of the next European Framework Programme (currently referred to as FP9) by reflecting on what has worked well in the past and what could be improved for the future. The main conclusions of our analysis are highlighted as following:

- SOMMa encourages the EC, the European Council and the European Parliament to seriously consider the recommendations of the Independent High-Level Group Chaired by Pascal Lamy¹ and endorse an FP9 budget that doubles the H2020 budget to 150 Billion Euros.
- Excellence should be the key evaluation criterion to allocate budgets in the next framework programme as it is the strongest indicator for impactful research.
- SOMMa strongly supports the statement from the ERC Scientific Council and its recommendation for a minimum annual budget of 4 Billion Euros for the ERC in FP9².
- SOMMa recommends doubling the budget of MSCA in FP9 with particular emphasis in MSCA Individual Fellowships and Innovative Training Networks.
- SOMMa believes that a budget increase for Future and Emerging Technologies, (FET) OPEN and PROACTIVE should be considered, as powerful tools to boost innovative research and disruptive technologies.
- SOMMa urges the EC to create a broader definition of impact and use a diversity of metrics to adequately assess a project's potential and its outcomes. Research

¹ LAB-FAB-APP – Investing in the European future we want – Report of the Independent High Level Group on maximising the impact of EU Research & Innovation Programmes, July 2017

² Building on a European Success Story to Further Empower European Researchers, Statement by the ERC Scientific Council on the position of the European Research Council in the next European Union Framework Programme for Research and Innovation (15 May 2017)

impact should be evaluated fairly in regard to the Technology Readiness Level (TRL) scenario. We call on the EC to relinquish the pressure for narrow, short-term impact research that does not support breakthrough scientific discoveries.

- SOMMa asks for a stronger commitment towards frontier research and bottom-up calls, covering the whole TRL spectrum, including calls under Societal Challenges.
- Two-stage calls should be increased in the new FP9 to reduce the number of resources invested in preparing new proposals.
- SOMMa strongly supports the policy that European framework programmes should not substitute national or regional investment, and measures should be adopted to incentivise prioritisation of R&I in Member States (MS) budgets aiming at least to investments of 3% GDP.

1. INTRODUCTION

1.1 Severo Ochoa and María de Maeztu Alliance (SOMMa)

The *Centres of Excellence Severo Ochoa* and *Units of Excellence María de Maeztu* are research centres and University departments, respectively, recognized by the Spanish government for their excellent research in the frontiers of knowledge across different disciplines. Overall, the centres and units aim to contribute to scientific knowledge and impact at global level in active collaboration with social and business actors.

The *Severo Ochoa* centres and *María de Maeztu* units aim to reach a new level of cooperation with the creation of the Alliance of *Severo Ochoa centres* and *María de Maeztu units* of Excellence (SOMMa). SOMMa's ambition is to raise the national and international profile of science in Spain; promote the exchange of knowledge, technology and best practices among its members, the international scientific community and the main stakeholders; cooperate with other research centres in Spain to strengthen the R&I system; and have a voice in Spanish and European science policy.

1.2 SOMMa positioning in Europe and H2020

The Centre of Excellence *Severo Ochoa* and Unit of Excellence *María de Maeztu* Award started in 2011 within the subprogram on "Institutional Strengthening" of the Spanish State Plan for Scientific and Technical Research and Innovation. SOMMa currently consists of more than 7,500 researchers and support staff in 26 centres and 15 units. SOMMa wishes to play an important role in shaping European science policy, by contributing to the next framework programme, which will be a stepping stone for Europe's future innovation and economic growth. SOMMa members hold relevant positions in important scientific societies, committees, platforms and networks, which allows the mobilisation of additional stakeholders. These include, for example, EU-LIFE, EIT health, ETPN, S3P-Industry, and the European Open Science Platform, among others. Moreover, data from 2016 show that SOMMa centres and units were the beneficiaries of 139 ongoing ERC Grants, leaders in 73 ongoing H2020 collaborative projects, they filled 107 patent applications and issued 65 new licences, initiated 353 agreements with companies, and had an overall turnover of more than €400M (more information at www.somma.es).

Through H2020 the European Commission has taken important steps towards the promotion and implementation of Open Science. The vision is to accomplish an open, transparent and inclusive innovation, education and research landscape, engaging multiple actors from society. It is now time to push the horizon further by truly opening

up R&I to excellent and creative minds, having access to cutting-edge infrastructures and leading the breakthroughs that Europe needs to achieve its goals.

The way to attain this is to allow excellent research to flourish by implementing supportive policies and by significantly increasing the budget for groundbreaking research in the forthcoming framework programme (FP9).

2. SOMMa'S VIEWS ON THE NEXT FRAMEWORK PROGRAMME

2.1 Structure and focus

The three-pillar structure of H2020 has been well received by stakeholders³, and SOMMa is not an exception. We support organisational variations in the programme structure to improve certain aspects⁴, however, the same concepts and essence should be maintained so that FP9 can grow and evolve along the lines of H2020.

In terms of pillars' orientation and focus, SOMMa proposes a series of dispositions that pivot around three major concepts:

1. Fundamental research, guided by the principles of excellence and integrity, is the starting point and main driver of scientific progress and innovation.
2. Europe's potential to generate scientific excellence, societal impact and innovation requires long-term investments to fully unfold breakthrough technologies for the benefit of all, as well as a range of diverse methodologies to identify and adequately assess the impact of those investments.
3. Efficient knowledge and technology transfer requires instruments that first focus on funding research at an early, risky and more unpredictable stage (seed stage), and then provide an innovation-friendly ecosystem that fosters the uptake of the new technologies and results by the innovation sector (valorisation).

SOMMa firmly states that FP9 should **increase the opportunities for excellent researchers to contribute to European R&I not only under the current Pillar 1** schemes but also across the other two pillars, especially in Societal Challenges. Societal Challenges should bridge more fundamental to translation research and innovation, without creating a further gap.

Excellence should be the key criterion to allocate budgets as it is the strongest indicator for impactful research. Support for R&I across all EU programmes should be excellence-driven, enabling Europe to support truly innovative ideas. A serious approach to prioritizing excellence must be considered in FP9, as it is the genesis for all further applied technological products. This can be translated to expanding Pillar 1 programmes and scaling-up the investment in low Technology Readiness Levels (TRL).

The demand for an increased budget for FP9 compared to H2020 is widely supported⁵. The broad oversubscription to H2020, its extremely low success rates and the high percentage of excellent projects that are not funded are the clearest proofs that Europe

³ Results of Horizon 2020 Stakeholder Consultation, Interim Evaluation of Horizon 2020, DG Research & Innovation

⁴ Commission floating new ideas for the next research programme. Science|Business (08/02/2018)

⁵ European Parliament – REPORT on the assessment of Horizon 2020 implementation in view of its interim evaluation and the Framework Programme 9 proposal, June 2017

is not efficiently fostering its R&I potential. Moreover, new requirements for science to be open, FAIR, high quality, transparent and accountable need additional funding.

SOMMa encourages the EC, the European Council and the European Parliament to seriously consider the recommendations of the Independent High-Level Group Chaired by Pascal Lamy⁶ and endorses an FP9 budget that **doubles the H2020 budget to 150 Billion Euros**. It is especially important to increase funds to research (for all Pillars) focusing on small and medium-size projects (easier to manage) and to fund more projects per call.

2.2 FUNDAMENTAL SCIENCE

The **Fundamental Science** pillar⁴ should focus on individual grants for curiosity-driven top-quality research, as well as provide funding opportunities for bottom-up and excellence-driven implementation of manageable networks of researchers and research infrastructures.

2.2.1 European Research Council (ERC)

The ERC has proven to be very successful in attracting and nurturing top researchers in Europe and in increasing the competitiveness of European research on a global scale. It allows the brightest scientists to perform excellent research that sooner or later will pave the way to disruptive innovation in diverse scientific fields. Thanks to ERC grants, European research institutions can attract many of the best scientists in the world.

The ERC is a programme mainly offering support for basic and translational individual researchers. New collaborative formats could be considered that are more inclusive and collaborative while not compromising excellence. Such schemes could be built on the experience of the ERC-Synergy grants. Nevertheless, these collaborative schemes should not decrease the current budget on individual grants. As the foundation of European research, the ERC must be fortified with an increase in budget (to fully exploit the potential of scientific excellence in Europe). Therefore, SOMMa strongly supports the statement from the ERC Scientific Council and its recommendation for a **minimum annual budget of 4 Billion Euros for the ERC in FP9**⁷.

Moreover, the ERC schemes (including evaluation) need to be revised to better integrate interdisciplinary projects and reduce gender bias. In SOMMa's experience, ERC proposals subjected to cross-disciplinary evaluation tend to obtain less rigorous and less favourable evaluation reports. Thus, SOMMa would welcome efforts aimed at improving multidisciplinary evaluation processes.

⁶ LAB-FAB-APP – Investing in the European future we want – Report of the Independent High Level Group on maximising the impact of EU Research & Innovation Programmes, July 2017

⁷ Building on a European Success Story to Further Empower European Researchers, Statement by the ERC Scientific Council on the position of the European Research Council in the next European Union Framework Programme for Research and Innovation (15 May 2017)

SOMMa emphasizes the need of an intermediate stage between the Consolidator and the Advanced grant. This would prevent competition between researchers with 13 years of research experience since their PhD thesis and researchers with more than 30.

New models of ERC funding should be explored: e.g. multidisciplinary high-risk short or long-term research projects that could also build synergies towards FET or Societal Challenges. To further promote new research ideas, an approach similar to the Seal of Excellence could be applied by ERC funds, according to which the first-ranked proposals not funded would be given a smaller seeding grant to set the basis of a potential future ERC project.

2.2.2 Marie Skłodowska-Curie Actions (MSCA)

The MSCA programme should be reinforced, especially the MSCA-IF and the MSCA-ITN programmes, as they are very attractive programmes in terms of interdisciplinary, mobility, working conditions, recognition and bottom-up approach. These programmes are essential to train the new generation of excellent researchers. The oversubscription to both programmes contributes to very low success rates. SOMMa recommends doubling the budget of MSCA in FP9 with particular emphasis in MSCA individual fellowships and ITN.

Innovative Training Networks (ITNs) should receive more support as they are an excellent instrument to support mobility and collaboration across disciplines and sectors. However, **secondments should be planned and implemented with more flexibility** to accommodate the needs of the individual researchers as they progress in their projects and careers. For some disciplines (e.g. life sciences) that require long time for early stage researchers to develop highly specialized technical skills while still doing secondments and internships in different organizations, it would be desirable to extend the duration of the fellowships up to 4 years.

On the other hand, synergies between the MSCA programme with other calls from the ERASMUS+ programme or even with EIT calls should be fostered in terms of cooperative training and education.

2.2.3 Research Infrastructures (RI)

Research Infrastructure (RI) are key actors to boost European research and innovation capacity, jobs and economic growth at many different levels. SOMMa suggests expanding the RI instrument by implementing a (co-)funding scheme aimed at creating small networks of regional and national small or medium-size infrastructures open to the research community. The goal of this scheme should go beyond the implementation of leading-edge technology, and it should focus on aspects as interoperability, complementarity, synergies and openness to serve a wide number of researchers in a

cost-efficient way. This should be coupled to measures to promote the investment of Member States in RI, creating synergies with existing investment from structural funds.

2.2.4 Future and Emerging Technologies (FET)

SOMMa believes that a budget increase for calls such as Future and Emerging Technologies (FET) OPEN and PROACTIVE, both powerful added-value tools, should be considered. **FET instruments possess a great potential to introduce radical new lines of technology that can turn into a competitive advantage for Europe.** Currently, this is the only scheme that funds innovative and radical ideas in a collaborative way and it has proven very successful. However, the low success rates demotivate scientists and technologists. Therefore, increasing the budget of this programme would not only increase the interest and motivation of scientists and technologists but also boost the development of new and radical technologies for the benefit of society.

The EC should not force the participation of industry in this programme (both FET Open and FET Proactive) if not relevant at early stages. Industries (specifically SMEs) are often not willing to take risks by participating in breakthrough ideas without any initial guarantees of success. The Launchpad instruments could then be continued to support the collaboration with industry and exploitation of results from FET Projects at more advanced stages.

2.3 GLOBAL CHALLENGES

Within the five focus areas implemented so far (health; inclusive, resilient and secure societies; digitalising and transforming industry and services; climate, energy and mobility; and natural resources)⁴, the **Global Challenges** pillar should continue focusing on funding collaborative research projects, targeting small, medium to large-size consortia, depending on the scope of the objectives. We strongly believe that projects should allow bridging applied to basic research and *vice versa*, across a broad spectrum of TRLs, without focusing exclusively on the latest TRL stages before the market. Collaboration is at the heart of the Framework Programmes. Consortia should bring people together with high-level expertise in diverse fields who can bring value to a common project.

SOMMa considers that expectations to produce high-quality research results and develop them into potentially marketable products within the timeframe of a single collaborative project is not always realistic. SOMMa proposes that a stronger commitment towards frontier research and bottom-up calls at low TRL levels on this pillar's instruments is required. The Framework Programme should encourage excellent early TRL as well as more advanced TRL collaborative projects on societal challenges, in a more balanced way.

2.3.1 Missions-driven research

Global challenges should outline citizens' needs and foster collaborations among multiple actors. The new proposed Mission-oriented approach should be transversal and with a clear focus on global challenges that address societal needs. **Once this directionality is defined, these missions will engage the citizenry⁸ while encompassing social sciences and humanities as well as multiple other disciplines.** To achieve mission-oriented goals, multidisciplinary approaches that pursue sustainability will be needed. While looking towards improving or fixing existing mechanisms⁹, missions **should also be risky, transformative and ground-breaking, opening new directions** for change and offering added value to Europe. For this reason, not all missions would have the same economical weight or develop at the same rate. SOMMa agrees with the possible two types of missions: "accelerate missions", which help accelerating process/technology development/innovation in a certain area and "transform missions" with transformative potential for society¹⁰.

Within FP9, challenges should be shaped to opportunities for change, for new ways of interacting and innovation led-growth. Missions are a vehicle for setting economic growth towards a knowledge-based and healthy society. SOMMa definitively agrees that the success of this mission-oriented innovation approach will depend on the risk taken and the obtained impact across society¹¹. SOMMa recommends that the European Commission uses a top-down approach in defining a number of grand challenges for European R&I, that can be implemented using a bottom-up approach opening up calls for consortia of European researchers and innovators. Bottom-up competitive applications, based on the most recent insights in science and technology should be selected based on the excellence of the researchers, the research proposals, and the technology transfer capabilities of their environment.

We strongly support the EC's goal to promote R&I that brings benefits to society. However, it is important to acknowledge that it is not always possible to anticipate which projects will result in improved well-being and prosperity or lead to disruptive innovation. In that sense, FP9 should encourage a wide approach to participation in excellent research.

Finally, we oversee a potential match of the mission concept with FET-FLAGSHIP preparation actions for FP9. Thus, SOMMa encourages to have FLAGSHIP proposals as candidates reinforcing the mission-oriented approach to global challenges focused on

⁸ First Gago Conference on European Policy. 14th of February 2018.

⁹ Mission-oriented R&I policies: In-depth case studies. Case Study Report: Energiewende. 2018

¹⁰ The Structure of FP9. Norges Arktiske Universitet. Thorbjørg Hroarsdottir 25.01.2018.

¹¹ Mission-Oriented Research & Innovation in the European Union. A problem-solving approach to fuel innovation-led growth. Mariana Mazzucato. European Commission. 2018

societal relevance and impact. In other words, **FLAGSHIPS could enhance even more the moon-shot concept** that is been sought.

2.4 OPEN INNOVATION

The **Open Innovation** pillar should focus on mainly top-down approaches to fund collaborative research projects of public and public-private consortia aimed at developing market-driven approaches to push scientific advances to higher TRLs. Specific instruments to fund research on how to improve Europe's innovation ecosystem and for launching such model ecosystems should be considered as well. Funding of large private companies should be limited. Projects with high TRLs (starting at TRL6 or 7, projects close to the market) could be supported through different funding mechanisms (credits, loans, etc.), as they are normally expected to deliver outputs that could have commercial interest and therefore, public money would be funding private interests.

To achieve the desired impact, FP9 must invest in effective models of connecting Research and Innovation. Bringing researchers and innovators together is key but very challenging. We believe that FP9 is the opportunity to address the gap realistically and more effectively, with the proper tools, as addressed below.

Interesting models exist in the United States, where for instance Massachusetts Institute of Technology (MIT) researchers are encouraged to create spin-offs by providing them very favourable financial incentives and intellectual property rights, even if the research is funded with public money. At the same time, large companies have their own place at the MIT premises to explore how new fundamental findings can fuel industrial and consumer product environments.

In the United States, “between 1980 and 2002 alone, U.S. universities generated a tenfold increase in patents, launched more than 2,200 university spin-offs to further develop research arising from campus labs, created 260,000 jobs in the process and contributed \$40 billion annually to the U.S. economy”¹². Similar pockets of successful tech transfer can also be found in Europe. They are characterized by a strong management effort to guide basic insights towards commercial value.

2.4.1 European Innovation Council (EIC)

Fostering an entrepreneurship and innovation ecosystem is a relevant aim for FP9. In H2020, there are three main schemes supporting innovation: (1) a complete pillar (Industrial Leadership), with 22% of the total budget; (2) Public-private partnerships (PPPs, JTIs) enhancing innovation projects; and (3) the European Institute of Technology (EIT), which is in charge of consolidating the Knowledge Triangle through close and

¹² AUTM Briefing Book 2015

effective links between education, research, and innovation. One possibility for simplifying the new framework programme and enhancing its coherence could be that the EIC includes the public-private partnerships and the European Institute of Technology, grouping most of the 'innovation-led' funding under the same body. In fact, FP9 could be a good context to try to **reorganize the current situation of PPPs-JTIs, as some of them overlap in their strategic agendas**. In addition, harmonizing the governance models and providing better access to those initiatives could also be improved.

It appears sensible to place innovators at the centre of the future 'FP9 Pillar 2' calls (Innovation & Competitiveness), or in existing EIT ones. Rearranging (reshaping or re-empowering) existing structures could make these initiatives useful for new challenges within the EC, leading to a more sustainable strategy with interdisciplinarity as a source of technological and other innovation (such as educational, business or social innovation).

The EC must ensure lean administration for innovation and provide competitive funding that can address the lack of a venture capital culture in Europe to drive the first stages of innovation and SMEs to overcome the valley of death (TRL 4-6). This approach must be goal- and impact-oriented; for instance, by implementing low threshold seed investments followed by larger investments based on success.

Of all the funding instruments for market-oriented innovation, we would give priority to the **Fast Track to Innovation (FTI)** pilot as an instrument that promotes close-to-the-market innovation because of its inclusive characteristics: it invites bottom-up proposals and is open to all types of beneficiaries.

Only by addressing each stakeholder's assets and building realistic expectations on how they contribute to R&I outputs can we succeed in transferring knowledge and technology to the benefit of the citizens.

3. TRANSVERSAL ASPECTS IN FP9

3.1 Simplification

By optimizing reporting and project monitoring procedures, the EC could increase productivity on other related issues (evaluation's coordination; acceptance and implementation support). A 'lump sums' approach, which entails keeping a record of all transactions for future audits, seems a simplification for the funding bodies, but it puts a much heavier burden on the users.

It is also necessary to improve the coherence of the programme finance instruments with the audit procedures, especially those subcontracted by the EC. Consultants should be better trained according to the rules that applied when the project was awarded to avoid misunderstandings.

Moreover, **output-based funding should be restricted to certain scenarios**: probably to industrial pilot lines or projects close to the market (low-risk and high TRL). The intrinsic uncertainty of basic research makes it unsuitable for this proposed simplification measure. Maybe an intermediate mixed model combining both systems (less reporting and more output) could be the answer, and it would be desirable a closer follow-up by the EC Project Officer (an expert on the topic) in the project's development and meetings.

Some other measures that could help to simplify FP9 could be improving and reducing templates; more intuitive and simple online application forms; reducing and simplifying acceptance (all information included in the proposal – deliverables, milestones, risks, etc. – could be made available in the Participant Portal for GA preparation) and amendment procedures; introducing a standardized code of conduct across EU research as part of the Consortium Agreement; strengthening the role of the coordinator and project management board; allowing the usual accounting practices of each institution; and including all FP9 funding calls (i.e. KICs, JTIs, ERANETs) on the participant portal, as well as simpler, fewer and common rules (reducing sub-programmes, JTIs, etc.).

Finally, funding rates should be the same as in H2020, especially the 25% flat rate for overheads, which is a great simplification.

3.1.1 Using the right tools and schemes

Grants (and co-funding instruments only when relevant) should be fostered and prioritized in FP9. Among grant funding instruments, individual grants (such as ERC grants), Research and Innovation Actions, Coordination and Support Actions, as well as Innovation Actions, should be the leading edge of FP9.

Instruments to tackle the existing gap between low TRL and high TRL projects that are able to diminish this ‘death’s valley’ are needed. Current tools (ERC-PoC or FET Launchpad) are not enough and they are restricted to grantees. Projects in the mid-range TRLs (4-6) with a top-down approach should be better defined and more specific, without a predefined or expected approach, to avoid submissions of projects outside the scope.

Bottom-up calls at low TRL levels could also be enhanced by the next framework programme. These approaches allow us to improve, think big and go beyond the state of the art, and could be useful for current identified challenges at the mid- to long-term. We consider that at least one out of four calls should be bottom-up, with the rest being top-down in FP9. On the other hand, top-down topics should avoid ambiguity and be well-defined and explicit, steering clear of predefining solutions and methodologies to address each particular challenge.

3.2 Evaluation

Research impact should be evaluated fairly in regard to the TRL scenario (from basic research to innovation close-to-market). This would avoid a mismatch of the evaluation parameters requested in each case and minimize misunderstanding the impact of the very principles of fundamental research. SOMMA urges the EC to reverse this situation in FP9 by creating a broader definition of impact and the use of a diversity of metrics to adequately assess a project’s potential and outcomes. Such a definition should take into account the different contribution of basic research to society compared to innovation. Research outputs are based on scientific publications and research data – including big data – production: promoting open science¹³ will foster wider impact of excellent research. Most importantly, the measurement of the impact of research outputs must be readjusted to allow for longer-term impacts, as basic excellent research takes several years (or even decades) to develop into real benefits for society even though it brings the highest potential for true innovation. Therefore, **we call on the EC to relinquish the pressure for narrow, short-term impact research that does not support breakthrough scientific discoveries.**

Moreover, for multidisciplinary proposals, review procedures must be standardized across all units and the consensus meeting reintroduced in all cases, building on proper and validated expertise.

In case of project resubmissions, it would be good to align the evaluation feedback with previous evaluations received. Maybe increasing the number of experts/evaluators/officers by topic could optimize project management procedures

¹³ Open Innovation, Open Science, Open to the World, DG Research & Innovation

and timings with the EC. It is critical that both the monitoring and evaluation activities are equipped with sufficient resources that allow, on one hand, to carry out a rigorous follow-up of the projects ensuring the maximum accomplishment of their objectives and the expected impact and on the other hand, independent and fair evaluations within reasonable time intervals.

Furthermore, two-stage calls should be increased in the new FP9 to reduce the number of resources invested in new proposals. However, for this option to succeed, it requires an efficient evaluation process that allows having short time lapses between the two phases and therefore, does not dramatically increase the final response time. More detailed and critical evaluations are necessary to design better and more impactful projects.

3.3 Synergies

As mentioned in Lamy's report, a better alignment of EU and national and/or interregional R&I investment (ERANETs, JTI, etc.), is required for added value and better-oriented objectives and ambitions. As Structural Funds (ERDF and ESF) are 256 billion €, and H2020 70,2 billion €, it seems indeed beneficial to join forces and try to enhance research and innovation within the EU with both budgets. Some synergies already exist, as one of the focus areas of the European Structural and Investment Funds (ESIF) is to specialize the EU regions in research and innovation.

Nevertheless, two issues should be pointed out: (1) these **synergies must not be used as an excuse to reduce FP9's budget in cases where no synergistic effect will result**; and (2) **synergies with Structural Funds (ESIF) must be addressed with a strong commitment from the EC and the Member States to remove current barriers** (i.e. State Aid), as allocation of ESIF funds strongly depends on national politics and priorities, which are not always aligned with H2020-ESIF synergy. These must be better used. Better alignment between the common policies in the EU and the Member States is of paramount importance both to ensure better resources management and a more cohesive and inclusive participation in the Framework Programme. **In Spain, the ERA-Net programme should be critically revised (e.g. prioritizing, more funding and more flexibility in participation) as it does not promote or facilitate the participation of Spanish entities in these collaborative programmes.**

Training for young researchers and entrepreneurs might also be addressed synergistically with other EU programmes that pursue education, such as **ERASMUS+** (14.7M€, DG-EAC) and/or EIT-KICs.

The majority of the Member States (MSs) lag behind the target of the Europe 2020 Strategy of investing 3% of its GDP to achieve a European Research Area and spur

economic growth. Figures range from 3.26% to a mere 0.46% in 2015. Only 3 MSs invest above 3% of their GDP in research whereas 15 MSs are below 1.5% (including several below 0.5%)¹⁴. A bold FP9 should be accompanied by clear measures to push for stronger public and private investment in R&I by the MSs. SOMMa strongly supports the policy that European framework programmes should not substitute national or regional investment and measures should be adopted to incentivise prioritisation of R&I in MS budgets aiming at 3% GDP at least¹⁵.

3.4 Transparency and flexibility

One of the characteristics that should define the next framework programme should be transparency at all levels, including in decision-making, access to large public-private joint initiatives, and topic choices and call definition in all FP9-funded work programmes.

FP9 should promote flexibility to reach all relevant European stakeholders in the fields of science and technology. Some measures could be an increase in the overall budget or rearranging possibilities within call budgets regarding the applications submitted. To reduce oversubscription, there should be more calls with a two-step evaluation procedure, and in many cases the scope of the topics could be narrowed.

¹⁴ Eurostat news release 238/2016, November 2016

¹⁵ European Parliament – Opinion of Regional Development Committee, April 2017

4. THE THREE O's – Open Innovation, Open Science, Open to the World

FP9 must continue to strive towards the three Os. **International cooperation** will undoubtedly increase and improve EU's knowledge and technology. FP9 should be aligned with research programmes from global economies (Japan, USA, China), identifying common global goals. Collaboration with developing countries and emerging economies (e.g. Africa, South America, etc.) should also be facilitated and encouraged, when relevant. For example, it is particularly important to collaborate with developing countries largely depending directly on vulnerable resources affected by climate and global change and where rapid social and technological changes are underway. FP9 could co-fund joint programmes promoting international cooperation with research, training and exchange activities, funding common schools, workshops, and conferences organized by the appropriate CSA.

Open Science: FP9 will have the legacy from H2020 to continue fostering and implementing Open Science. SOMM supports Open Access to Publications, FAIR data, the European Open Science Cloud, Research Integrity, Public engagement and citizen science. Regarding data management, FP9 should provide more specific data management templates with potential discipline specificities, and put in place a rigorous system for their evaluation (including for example data stewards/experts in evaluation panels). Moreover, FP9 should recognize open science practices during evaluation (at proposal and project levels) and provide incentives, rewards and specific funding mechanisms to allow open science implementation.

Spreading Excellence and Widening Participation: Bridging the gap in talent and expertise retention across Europe will be key for the future of Europe. Regarding R&I, we believe that Widening, Spreading and Twinning programmes are good tools for FP9. These programmes must not concede on excellence. They should focus on promoting the best conditions for institutions within the research and innovation ecosystem to nurture excellence irrespective of location, and welcome newcomers. Such programmes must be well coordinated with European Structural Funds and coupled to the key condition that Member States co-invest in R&I and ensure continuity of the European effort to retain talent and expertise.

Science With and For Society The SWAFS programme lays the foundations for integration of society and science and targets extremely relevant transversal topics such as open science, Responsible Research and Innovation (RRI), gender balance, citizen science and science education. The programme is a real example of how the EU can take the lead and show the way to the Member States, R&I organisations and diverse stakeholders in implementing necessary initiatives to foster research and innovation with and for society.

CONTACT: info@somma.es



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