

PROVIDING ADVICE ON POTENTIAL PRIORITIES FOR RESEARCH AND INNOVATION IN THE HORIZON 2020 WORK PROGRAMME 2016-2017

Input from the Horizon 2020 Advisory Group for the Marie Skłodowska-Curie Actions

Introduction

Developing new knowledge and ideas, which are among the key drivers of competitiveness, calls for strengthening the human resource base with the right combination of skills to innovate and make Europe's research and innovation system more attractive on a global scale. The Marie Skłodowska-Curie Actions (MSCA) provide an answer to these growing needs. By focusing on excellence, by promoting cross-border and cross-sector mobility and by fostering innovative training for researchers, MSCA contribute to Europe's overarching goal to promote smart economic and employment growth.

Since 1996, MSCA have developed a well-recognised brand and a long-term strategy for human resources development behind research and innovation activities. They have made remarkable progress in opening research careers at European and international level and in building the European Research Area (ERA). The MSCA programme is unique in terms of building competence, focusing strongly on the next generation of researchers, and providing support for emerging talent. Research and innovation fields as well as sectors are chosen freely by the applicants in a fully bottom-up manner. During the 2014-2020 period, MSCA will support 65 000 mobile researchers, including 25 000 PhD candidates.

As the first step in the process towards preparing the next work programme covering 2016-2017, the European Commission has consulted the Horizon 2020 Advisory Group for the Marie Skłodowska-Curie Actions (MSCA). The seven questions posed address key aspects to be considered in terms of providing input towards the priority setting for EU research and innovation funding in the work programme 2016-2017. This report, which is mainly based on the written contributions from the members of the Group and on discussions at a meeting of the MSCA Advisory Group held on 18 June 2014, summarises the responses of the Group to these seven questions.

Response to questions

- 1) What are the biggest challenges in the field covered by the MSCA which require immediate action under the next work programme?*

The MSCA Advisory Group considers MSCA to be the flagship programme throughout Europe for researchers' training. The leading role of MSCA in this field should be maintained and strengthened, even on global scale. The MSCA should continue to strive to be a **role model for other training programmes** in terms of quality and excellence. These relate both to the research

environment and the experience of the researcher, as well as the quality of the research, **embodying the principles of the European Charter and Code for Researchers** and **increasing inclusiveness** in aspects like **gender issues**. MSCA should aim at **increasing the employability** of trained researchers while capturing the benefits of research across all sectors.

Reflecting fast changing research landscapes and new opportunities provided through new forms of mobility and communication ("virtual mobility"), researchers nowadays increasingly need flexibility in various aspects. For research mobility programmes like the MSCA this poses the challenge of **meeting a variety of needs** while **maintaining the excellence and quality** developed throughout the past years. Moreover, in order to spread excellence to other programmes in the European Research Area, it is vital that MSCA **share good practices** in implementation aspects (e.g. how to include the non-academic sector, including SMEs, more effectively).

Even though MSCA are a European programme, given globalisation it is essential that they foster and increase **exchanges of researchers and research managers with other parts of the world**.

A major challenge for MSCA is their **low success rates**, which create frustration among researchers and lead to the non-funding of potentially game-changing projects.

Finally, the relatively low **awareness of the achievements and importance of the MSCA programme**, in particular among the general public, is a challenge to be addressed under the next work programme.

2) *What are the key assumptions underpinning the development of these areas (European Research Area, human resources development policy, research & innovation, citizens' and civil society's concerns and expectations)?*

Key proven assumptions in the area of MSCA are that **mobility leads to added value** for research careers and for the research output itself, that collaboration between players can deploy resources more efficiently, and that completion of a Marie Skłodowska-Curie fellowship can **accelerate innovation** by giving access to other pools of knowledge and cooperation networks. It should be stressed that as a bottom-up programme, MSCA should enable a **balance between core research and policy goals** such as multidisciplinary or intersectorality.

At the level of individual researchers, in spite of being a highly skilled workforce many researchers are still facing career instability that leads to brain drain and exit from the profession. Therefore, **attracting, training and retaining researchers** in an effective way is vital for Europe. In order to achieve this, one important aspect is to reinforce **flexibility** built into the programme, particularly for researchers with families. It should also be noted that in spite of improvements in **gender equality**, the recruitment and progression of women in research and higher education careers still present significant challenges.

Finally the MSCA Advisory Group emphasises that **raising awareness** of the importance of research has a positive effect on society.

3) *What is the output that could be foreseen, what could the impact be, what would success look like, and what are the opportunities for international linkages?*

The activities supported by the MSCA have impact at the structural / organisational level, as well as on each participating researcher. In both aspects MSCA should become a **globally-recognised model of good practice**.

Firstly, at the individual level, MSCA strongly contribute to attracting, training and retaining employable researchers and innovators. MSCA should **continue encouraging creativity and bold research**, while **the creation and sharing of knowledge** should be further enhanced. Through all their activities, MSCA should strive to stimulate sustainable collaborations, improve the career paths for researchers and increase the absorptive capacity of businesses to employ researchers.

Secondly, MSCA should aim at **structuring the European Research Area and the European Higher Education Area in research training, career development and mobility**, helping to integrate the fragmented national mechanisms in these areas.

4) *Which are the bottlenecks in addressing these areas, and what are the inherent risks and uncertainties, and how could these be addressed?*

Bottlenecks in addressing the areas identified under question 1) are the **limited funding and investment** in research and innovation (R&I), as well as the **fragmentation** between national and EU grants and programmes. For that reason it will be essential for the MSCA to continue to **seek synergies** and **stimulate co-funding** options for national programmes.

Other critical issues in the ERA, which should be addressed in the future, are related to suboptimal conditions for female researchers and insufficiently attractive and flexible research careers, with large disparities across countries. In this context, the Group advocates **increasing the awareness** of the MSCA programme in general, recalls in particular the importance of skills acquired during research training, and calls for structural changes in the ERA in order to **improve gender balance**, following MSCA practices.

In addition, the profession of researcher is still poorly understood or recognised to varying degrees by society and by employers. There is a limited investment in researchers in both academic and non-academic sectors because they are not valued highly enough. Therefore, HR management should be improved and the understanding of impact, as well as the importance of **employability**, should be increased throughout Horizon 2020 projects and other research programmes. It will be crucial to address insufficient research management resources in the ERA, including supervision, by **professionalization** and by **sharing good practices**, including from MSCA funded projects.

Finally the MSCA Advisory Group is concerned about creating optimal conditions for multidisciplinary and intersectoral R&I projects and is encouraging the Commission and the Research Executive Agency to further take into account the particularities of these kinds of projects.

5) *Which gaps (policy, framework for research careers) and potential game changers, including the role of the public sector in accelerating changes, need to be taken into account?*

Within the European Research Area there are a number of diverse national initiatives and policies that result in **fragmentation** and in **legal and socio-political barriers for mobile researchers**, in particular related to social security issues such as visas, social security and pension rights.

Other gaps are the still relatively weak involvement of industry and other non-academic stakeholders in research training initiatives, which may also be a result of the **gap between academic and innovation cultures**, as well as a lack of **adequate R&I support structures** that mobile researchers can utilise during their training.

Social media are gaining more and more influence on citizen's lives, changing the way people network and interact. The MSCA Advisory Group believes that the opportunities offered through **social media** are currently still underutilized by many researchers and research groups. New forms of mobility ("**virtual mobility**") are emerging, bringing the need for increased adaptability of research careers in terms of both time and location.

Even though MSCA are already addressing gender aspects throughout their activities, the MSCA Advisory Group notes that there is still a large potential to **increase the involvement of women** in order to deliver on the commitment from the Innovation Union to significantly increase the number of researchers in Europe. Moreover, knowledge on sex/gender differences could be improved by considering gender aspects in all research content.

6) *What are the activities with the strongest potential to leverage the EU knowledge base for innovation and, in particular, ensure the participation of industry and SMEs?*

In order to leverage the EU knowledge base for innovation, it is of crucial importance to embed **innovative and creative mindsets throughout research training**. This can be achieved by encouraging exchanges, such as intersectoral secondments and placements during research training activities. **Collaborative doctoral programmes and partnerships** can play a key role in placing researchers within innovative environments during early stages of their career, stimulating experiences beyond academic research training settings. The MSCA Advisory Group believes that MSCA should continue facilitating a strong and durable interplay between researchers in public and private sectors, together with policy makers as well as research managers.

Furthermore, MSCA should continue funding calls and activities that are designed to increase the participation of non-academic partners, including SMEs.

7) *How synergies between MSCA and other parts of Horizon 2020 can be developed; how cross-cutting aspects such as innovation, international cooperation, social sciences and humanities, responsible research and innovation including gender aspects, and climate and sustainable development, can be better addressed by MSCA? How interdisciplinary activities can be better supported?*

The first and most important step towards creating synergies is an improved exchange of information between MSCA and other parts of Horizon 2020. **Mutual awareness should be increased**, including through better, customized communication platforms or actions. It is crucial to **exchange good practices**, particularly in multidisciplinary calls, programmes and proposals, and in the conditions for training excellent researchers. Furthermore, MSCA should continue to strengthen **synergies** with the other H2020 parts, including also with other new initiatives outside EU funding such as the Global Research Council.

In general the **international dimension of MSCA should be reinforced**, and the programme should actively engage in the global arena, with special focus on the MINT countries (Mexico, Indonesia, Nigeria, and Turkey), BRIC countries (Brazil, Russia, India and China), as well as with industrialized nations.