

# FINAL REPORT OF THE AD-HOC H2020 ADVISORY GROUP ON SPREADING EXCELLENCE AND WIDENING PARTICIPATION

## Background

The objective of this report is to provide guidance to the European Commission to improve the Horizon 2020 Part IV "Spreading Excellence and Widening Participation". The report was commissioned by the EC's DG Research and Innovation.

## Advisory Group Composition

The group comprised of the following 19 experts:

GODDARD	John ( <b>CHAIR</b> )
PUUKKA	Jaana ( <b>RAPPORTEUR</b> )
CALIGIORE	Claudia
ADANY	Roza
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CORREIA FORTUNATO	Elvira Maria
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## Working Methods

The Advisory Group met twice on 15-16 May and 17 June 2014. This report is based on the discussions during the meetings as well as written contributions by the Members as well as additional meetings between the rapporteur and members<sup>1</sup>.

## INTRODUCTION

The deliberations of the Advisory Group on the Spreading Excellence and Widening Participation initiative focus on the challenge faced by both the newer Member States of the European Union and developing nations across the world – how to build capacity for research that meets international standards of scientific excellence AND enhances the innovative performance of the national economy?

The initiative for Spreading Excellence and Widening Participation is seeking to bridge the gap between research and innovation in countries lagging behind the rest of Europe in terms of scientific output by investing in selected knowledge institutions. Wherever possible it aims to link this to measures designed to increase the absorptive capacity of private and public organisations in these countries and regions through use of the European Structural and Investment Funds, particularly those related to the national/regional smart specialisation strategies.

While key impediments for spreading excellence and widening participation are the low educational attainment level and the low levels of RDI funding in target countries, the Advisory Group recognises that bridging the innovation divide in the identified target countries over a seven year period with the widening actions is a major challenge in terms of:

- The capacity of public authorities to make transparent and accountable strategic investment in the absence of well-developed national research and innovation systems.
- The connection within national governments between those responsible for higher education, research and regional development.
- The leadership, management and governance of higher education institutions and research institutes as it relates to the capacity to embed (mainstream) Widening Participation funds into the ongoing core activities of the institutions
- Mechanisms for engaging the private sector in public sector driven investment in research and innovation

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<sup>1</sup> The Advisory Group also acknowledges the support provided by the European Commission, acting as the secretariat for the meetings and providing explanations and clarifications when required. Particular acknowledgement is given to the staff of DG RTD, Unit B5 "Spreading Excellence and Widening Participation", for all their support, especially: Dimitri Corpakis, Head of Unit; Magda de Carli, Deputy Head of the Unit and Telemachos Telemachou, Policy Officer.

- The availability of appropriate data to assess the proposals and their impact to suggest improvements or even discontinue programmes.

Although it is beyond the scope of the Advisory Group to address such challenges, they provide an important context in terms of how the programme can be fine-tuned. The paragraphs below highlight the recommendations of the Advisory Group which are grouped into: programme level recommendations, action level recommendations and recommendations for practical implementation. These recommendations focus on:

- How to reach a balance between research and innovation?
- How to ensure wider participation when concentrating funding in pursuit of excellence?
- How to mainstream Spreading Excellence and Widening Participation by creating a new focus area for Horizon2020?
- How to enhance the linkage between Widening actions and the cohesion policy and smart specialisation?
- How to develop performance indicators and measurement?

The Advisory Group has made a number of recommendations regarding how to enhance the measures designed to deliver the Spreading of Excellence Widening Participation in Horizon 2020. These have been made without reference to the resources available in the European Commission to implement these recommendations.

### **Reaching a balance between research and innovation**

Based on the identified performance gaps in R&I across EU countries, the primary focus of the Work Programme is to raise the science base in the low performing countries. The Work Programme addresses research and – to a lesser extent – also innovation, with the assumption that innovation will follow the strengthening of the science base.

The lack of participation of some countries in the Framework Programme has been influenced – among other things – by insufficient scientific excellence and less developed scientific networks. While Horizon 2020 is not simply a continuation of FP7 (it includes also parts of the previous CIP programme, extending into non-R&D related innovation activities), addressing these two issues is expected to contribute to the widening of participation. The current Widening instruments contribute to building scientific excellence and improving access to networks to a diverse degree. The challenge of excellence is addressed primarily by Teaming and ERA Chairs, while Twinning and COST give particular prominence to networking (however COST has also a tradition in nurturing scientific excellence).

While the focus of the Work Programme is on spreading scientific excellence, the Advisory Group acknowledges that this excellence should be of the type that will be critical to the innovation process and has the capacity to spur innovation in order to close the innovation gap. It is important to ensure that the Work Programme encourages researchers or research groups to embark on knowledge transfer and commercialisation. Given the significant ESIF funding that will flow to facilitate access to risk capital it is important that widening actions will contribute to the deal flow. The Work Programme should therefore highlight the ways to bridge the gap between research and innovation and application and to contribute to the ultimate target of H2020: creation of sustainable jobs.

### **Ensuring widening participation while favouring concentration to build excellence**

In order to achieve excellence the Work Programme uses the concentration of funding, particularly in Teaming/Centres of Excellence. This approach has been selected to avoid the dilution of capacity which may result from spreading funds across institutions and diverse fields. High funding levels for Widening actions are

needed ensure the engagement of leading-edge knowledge institutions and top researchers in advanced countries. In order to facilitate the integration of currently underperforming Member States in H2020, EIT and other innovation activities, the funded activities should include partners which are well integrated in EU networks and projects.

At the same time the Advisory Group acknowledges that limiting the number of recipients of the Centres of Excellence may be counterproductive given the number of target countries and the thematic diversity of their research portfolio. It therefore advocates the role of the Centres of Excellence as “lighthouses” or “beacons” in spreading excellence across the Member States and maximising the impact of the Widening actions.

Reducing the size of the grants for each recipient – whether ERA Chairs, Teaming or Twinning – can be justified in certain cases in order to ensure wider participation, a greater spread across countries and disciplines, and reduced administrative burden on coordinators in the target countries. The Advisory Group recognises that when making funding decisions the Commission should allow for some flexibility, with due regard to the requirements of different knowledge domains and the different starting points of the target countries in terms of existing research infrastructure and the absorptive capacity of business (especially SMEs) and civil society.

## **DEVELOPING SPREADING EXCELLENCE & WIDENING PARTICIPATION AS A NEW FOCUS AREA**

All thematic areas of Horizon 2020 have a strong potential to address widening participation challenges. Therefore the Advisory Group recommends introducing Spreading Excellence and Widening Participation as a designated Focus Area within the Horizon 2020 architecture in order to take full advantage of this potential. It further recommends that the Widening actions should be expanded to the instruments which address societal challenges, industrial leadership and excellent science. This could be achieved by mobilising part of the funds allocated for these goals for the launch of Widening Participation related calls. A similar approach could be considered for the different ERA instruments such as Joint Technology Initiatives and ERA-Nets as well as Joint Programming Initiatives and European Innovation Partnerships.

### **Enhancing the linkage to cohesion policy**

The Advisory Group emphasises the need for continuing efforts to ensure that the Member States link their economic development plans and R&I strategies as a requirement for success in Widening funding; it advocates for strong practical support for those regions/countries which are underperforming in R&I. There is much room for improvement in this domain. While the priority areas should take into consideration the regional characteristics of a particular country, such as traditionally strong technologies and the availability of national resources (ex-coal), in practice the national submissions of smart specialisation strategies by the low performing countries have tended to be generic, contain duplication and/or a strong sectoral and/or technology focus. The preparation of smart specialisation strategies has also shown that the sectors of high scientific performance may diverge from the sectors of high economic productivity. Public funds may be directed to scientific research areas with little contribution to economic growth, while areas with high contribution to economic growth may have a weak R&D/knowledge base. National and regional smart specialisation strategies may also focus on narrow areas whereas societal challenge themes under Horizon 2020 are broad. This tension can be successfully addressed by identifying a niche area in the broad priority field as has been the case in Denmark.<sup>2</sup>

The Advisory Group also acknowledges the benefits and the need for collaboration in cross-country priority areas with growth opportunities for underperforming countries. Such areas relate to the optimal use of indigenously produced resources in the wider bioeconomy concept for food, materials, energy etc. The specific fields could include public health, Clean Tech, energy availability and supply, and logistics.

The synergies with the use of Structural Funds for strengthening the research infrastructure by new advanced and possibly unique equipment and the less developed target institution should be utilized. This would have a significant potential of raising the attractiveness of these institutions and, thus, also the attractiveness of the Widening actions. But such investments must be linked to the country/region’s smart specialisation strategy

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<sup>2</sup> For example in Denmark ageing is a national priority and each region has identified special niche areas to support this priority.

## Developing performance indicators and measurement of success

The advisory group recognises the need for periodic developmental reviews which combine evaluation and advice. There is a need to establish robust and clear ex-post performance indicators, used for monitoring, as well as result-based measurement. In order to build excellence where it does not yet exist, the focus should be on the trajectory, developing indicators that provide a 'stairway to excellence'. With a help of a framework, a prioritisation tool could be developed to establish a baseline: where we are now and where we expect to be.<sup>3</sup>

To reduce the likelihood of "gaming" the system, the Advisory Group proposes a combination of indicators and peer review with internationally recognised experts. Evaluations should take place annually or every 18 months by a panel of internationally recognized experts who would assess the evolution of the performance against set criteria based on Widening and Cohesion Policy targets and provide constructive input in order to achieve the objectives. Performance criteria should be provided in advance by the EC. It should be made clear that in cases of poor delivery, activities can be discontinued and funding allocations cancelled.

## RECOMMENDATIONS

### 1) Programme level recommendations

Continue to encourage governments to invest in education and RDI through Country Specific Targets in the European Semester. Key impediments for spreading excellence and widening participation are the low levels of RDI funding and low educational attainment level.

Ensure policy coordination between DC Research & Innovation and DG for Regional and Urban policy on H2020 Widening actions and smart specialisation. Provisions should be made to strengthen the links between H2020 and the cohesion policy instruments. Collaborative initiatives with INTERREG projects and visible linkage to structural funds should be developed. The potential use of COFUND which offers mobility grants, pending on successful evaluation of the proposal, should be investigated.

Encourage national level coordination and knowledge sharing among the ministries involved in the management of H2020 and Structural Funds (Ministry of Industry/Economy, Ministry of Education and Science, Ministry of Regional Development). For example, Centres of Excellence will require close involvement of regional/national authorities responsible for the Structural Funds and smart specialisation strategies and those responsible for higher education and research. The same applies also to the support structures for the communication and cooperation between NCPs and support services for Structural Funds.

Consider launching measures for developing Widening Participation as a focus area and/or mainstreaming the Widening Participation Agenda. For example address the Widening topics across H2020 by using Coordination and Support Actions which would also facilitate the link between Widening actions and smart specialisation; Highlight in the Widening calls that specific country-related challenges can be addressed as part of the action; Include thematic calls in the Widening actions linking up to some of the H2020 challenges.

Without compromising the pursuit of excellence, place a greater emphasis on innovation and industry collaboration in the Widening actions, particularly in Teaming and ERA Chairs. Consider introducing new input measures (increased industry-university collaboration etc.) and output measures (increase in radical, new to the market, innovations and incremental, new to the firm, innovation). Apply a broad based innovation policy approach including both supply and demand side drivers of innovation. Ensure that R&I is not only limited to analytic, science-based knowledge, but would also cover synthetic and engineering knowledge as well as organizational, market and societal innovations, drawing on expertise in the social sciences and humanities.

Introduce Centres of Expertise with a regional as well as technology focus) in the Widening calls after capacity mapping (human and infrastructure) and the future requirements/challenges of the scientific/technological area. An innovation systems/Triple/Quadruple Helix approach could be used as a framework for Widening

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<sup>3</sup> The EC could consider commissioning a research on evaluation criteria, developing both ex ante and ex post indicators.

activities, i.e. linking up university, industry public agencies and civil society within regions and countries as well as across EU. The introduction of a Centres of Expertise approach alongside Centres of Excellence would be worth considering to underline the relationship between research AND innovation (Sweden and VINNOVA's innovation policy could provide an example – VinnEXcellence.)

Enhance linkages with education: Include in the business plan of each programme actions about links with undergraduate and master programmes – not only PhD and post-doc, in relation with smart specialization to ensure embedding in the core activities of HERIs and the development of human capital for the region.

Develop Widening actions in tandem with complementary EU programmes in the field of education or enterprise development. To address the concerns for brain drain, a COFUND programme could be set up between the Commission and Member States' funding organisations to support the building of research teams by returning Marie Skłodowska-Curie fellows at their home institution. (The activities of such a programme would need to be organised in a competitive basis and with peer review involving also international experts.) Introduce Joint Innovative Doctoral Training in the portfolio of Widening actions. Via ERASMUS+, the actions should be complemented by student and teacher exchange but also by the respective actions towards university-industry collaboration. It is also worth noting that the DG Enterprise and Industry has a broad range of measures to support entrepreneurship and the business environment which could be linked with the Widening actions.

Ensure (pro-)active involvement of COST in the general framework supporting Widening Participation.<sup>4</sup> In Widening information events Horizon 2020 and COST should be presented and explained at the same time. Furthermore, in order to facilitate close cooperation and utilisation of the synergies between Horizon 2020 and COST, the rules of participation as well as the evaluation of COST Actions should be aligned to those of Horizon 2020.

Utilise Inducement Prizes to widen participation, to increase the volume of ideation results and pursue the goal of job creation. For example launch a high profile competition to develop a validated scalable method to transfer from research to innovation and start-up. Require the model to be validated in practice through the creation and scaling up a start-up. Set the target at 10 000 new jobs.

Support IPR transfer with and without tech component (e.g. how to scale up a cafeteria)

Support interaction between those Member States / regions which are ahead with those that are lagging behind by offering opportunities to purchase knowledge and services in order to build knowledge from those ahead, but in ways that the payment is also tied to success rate of proposed metrics. Develop a financial model for those ahead to support those who lag behind. The innovation leaders will need to financially benefit from offering support in ways that do not create more competition for their own region (for top talent, companies, innovation etc.). If the financial benefit is not based on success of the regions they are supporting, they have no “built in” reasons to do so and as such any level of quality will do. By agreed models to be able to buy the knowledge from those who have the knowledge where payment is dependent the level improvement.

Introduce a “research to innovation agreement”, a practical tool to track how much value research can create over a lifetime.

## 2) Action-specific recommendations

### TEAMING

#### Stage 1:

Provide details about the structure and outline of the Business Plan and clarify what “extensive, detailed and robust” means in practice in order to facilitate the participation of less experienced applicants.

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<sup>4</sup> The COST Actions such as thematic networks support the emergence of new partnerships, the access to existing networks, consortia and informal groupings and support the access to and integration in the research and innovation communities.

In addition to long-term objectives, require the applicants to include short- and medium-term objectives in the vision for the Centers of Excellence (CoEs).

Ensure that each CoEs will act as a “seed bed” for spreading excellence across target countries and in the thematic context across Member States, progressively involving more institutions and individuals, sharing knowledge, building partnerships regionally and thematically, covering also industry linkages. This could be achieved by including mid- and long-term plans for creating and animating networks of excellence in each Business Plan. Centres of excellence could have an obligation to work with other actors in the national and regional system acting as gateways.

Emphasise a portfolio approach for the CoE staffing by facilitating shared appointments and flexibility with regard to the duration of stays, but ensure that core people are required to engage in the CoE full time, particularly in the creation of a new CoE. Such flexibility can support the interaction and cooperation between the home institution and the host institution, and provide opportunities for exploiting the potential of institutions, support staff mobility and knowledge circulation. Require the bidding institutions to report how they plan to embed the CoE in their overall institutional priorities. This would facilitate a stronger profiling of HEIs’ intellectual resources which are often too spread out and would benefit from establishing horizontal priorities.

Include a requirement that the Business Plan demonstrates how the team and its individual members in relation to their own institutions can provide innovation outcomes (related to sectors and products).

Facilitate a stronger industry collaboration. The possibility of participation of business firms should be made explicit in the scope. More specifically: Include a requirement that the Business Plan demonstrates how the CoE can connect with the local business/technology/entrepreneurship community and how the CoE itself can improve the innovation environment of the region. A differentiation between *technology-driven innovation* and *non-technology-driven innovation* could be useful here, given that in many target countries non-technology-driven innovation prevails. Ensure that the notion of involvement also covers services and education. Support SMEs and research-industry partnerships and facilitate industry involvement in the decision making and implementation process. Clarify in the guidance for business plans that industry involvement is both acceptable and recommendable, e.g. as a funder and member of the management board. Require a letter of support from the business sector to establish the demand and priorities of business in the target country. Link industry requirements to EU technological platforms. Support Public-Private partnerships. Encourage Joint Technological Initiatives. Offer incentives for employee-driven innovation actions. Co-support Industrial PhDs.

Ensure stronger presence of entrepreneurship support measures, especially high-tech entrepreneurship and entrepreneurship related to academic research.

Place a greater weight on demand side measures, applied research, including also design, marketing and experience and other “Knowledge Based Capital”. PPI with a special focus on health and welfare sectors, which also should make use of social innovation (in/with the market but for society) should also play a strategic role.

## **Stage 2:**

To facilitate both the development of the Business Plan and its evaluation by the international expert panel, define and make explicit the criteria for the evaluation of the BP, i.e. content (scientific excellence), impact on innovation and quality of the proposed implementation plan

Ensure the quality of the actions and the long term sustainability of CoEs by developing robust evaluation of the business plans.

## **Expected impact:**

Clarify the guidelines in respect to the CoE after the end of the FPA. Provide more explicit information about the self-sustainability of the CoE after the end of the grant.

Given the fact that no discriminatory criteria can be introduced (including minimum thresholds), replace indicators with the criteria for centres of excellence.<sup>5</sup>

## ERA CHAIRS

Make strong efforts to ensure that Member States with weak RDI performance can retain their excellent researchers. The guidance notes for ERA Chairs should make it very clear that these positions are open to national researchers, as long as the principles of open and fair recruitment are respected. At the same time a full advantage should be taken of the EURAXESS - Researchers in Motion Portal and the associated LinkedIn community (EURAXESS Links) to attract and mobilise talent.<sup>6</sup>

Avoid the creation of isolated chairs, disconnected from their contexts. Successful candidates should be required to embed the chair in the national, regional, institutional contexts. Require the bidding institutions to report how they plan to embed the ERA Chair in their overall institutional priorities. One way of ensuring a long term impact and embeddedness would be to require an ERA chair to have an organic connection to the university through a new or existing doctoral training programme, industrial PhD programmes and connections with the local business and industry. In the instance where the ERA Chair is associated with a research Institute linking up with a university would be beneficial for the national RDI system.

Clarify the guidance notes for ERA Chairs in a number of points, including who can become an ERA chair, how the team can be established and what options are available after the five year period. Based on a portfolio approach of staffing emphasise that the ERA chair needs to be supported by research manager who will be in charge of the administrative process. More specifically, specify whether an industrial researcher can be an ERA Chair, as well as the relationship between academic and industrial researchers or research managers.<sup>7</sup>

Make explicit the definitions/criteria/measures of leadership effectiveness also in terms of the number of publications, patents, number of PhDs, time from concept to research output, generation of teamwork, spin-offs, start-ups.

Clarify in which cases an ERA Chair could come from the private business sector taking inspiration from the Professors of Practice (PoPs) model adapted to focus on RDI. The key for success here is embedding the PoPs in the university, given that institutional, rather than individual development is the focus of the action. Ensure that such chairs will be required to help the research organisation to improve its research performance and to be more successful in obtaining competitive funding.

Provide details on how the ERA chairs can establish their own team, e.g. recruiting team members in the host country or bringing some with him/her from the country where he/she comes from, or both. Each of the options have both benefits and challenges, particularly in terms of sustainability.

Clarify what happens with the ERA Chair after the 5 years. This has an impact on the type of person who can be interested to become an ERA Chair, e.g. a full professor or mid-term career academic Associate Professor. Does the full-time position at the host institution allow for maintaining a part-time position at the researcher's home institution, to which s/he can revert after the end of the 5 years? And if maintaining a part-time position is possible, how the goal of institutional development and embeddedness can be ensured at the end of the ERA Chair period? The Advisory Group has diverse views on this issue. In general, and as in the case of the Centres of Excellence, it would be important to ensure that a core person is required full time.

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<sup>5</sup> The Composite indicator refers to the national level, but EC has avoided rating at the institutional and regional level (U-multirank can be used to support institutional profiling).

<sup>6</sup> The EURAXESS - Researchers in Motion Portal provides access to information and support services to researchers who wish to pursue their research careers in Europe or stay connected to it. EURAXESS Links in LinkedIn brings together about 1 300 researchers.

<sup>7</sup> "Parameters" (between outstanding researcher and research manager) are very different. Academic manager is focused on knowledge generation i.e. publications, whereas industrial researcher is focused on patents and innovations.



## **TWINNING**

Extend twinning to PhD and Master Students, possibly with linkages with industry. If student research activities can be included, a possible arrangement is to have Industrial PhDs in the leading country, or dual PhD degrees between the twinning countries. Innovative approaches can also include joint post docs and PhDs with the private sector.

Consider launching a network at an introductory stage to help applicants to identify partners and/or establishing a European contact point/matching place.

### **3) Implementation or performance level recommendations**

#### **Performance indicators and measurement of success**

Use periodic developmental reviews which combine evaluation and advice. Develop indicators that provide 'stairways to excellence'. Use a combination of indicators and peer review with internationally recognised experts. Evaluations should take place annually or every 18 months by a panel of internationally recognized experts who would assess the evolution of the performance against set criteria based on Widening and Cohesion Policy targets and provide constructive input in order to achieve the objectives. Performance criteria should be provided in advance by the EC. Agree on the metrics on how the success of any of the proposals is going to be measured (short term, long term). An open online platform could facilitate participation, knowledge and information acquisition regarding the aspects and activities relevant to participation with algorithms and filters to easily find the relevant information, knowledge, events etc. to facilitate participation, manage information and processes and close to real time statistics in order to consider, monitor and compare national, regional, institutional characteristics, performance and differences.

Oblige project partners to collect a range of 'impact' information irrespective whether it is used in the life cycle of the Widening programme particularly performance evaluation to track which actions are eventually successful in creating jobs. This data is related to ROI, downstream activities, start-ups etc.

Develop a prioritisation tool to evaluate proposals by focusing on those with "highest theoretical value" with "least friction to implement" (high impact, easy, cheap, realistic to implement). Design a system to allow new proposals to go through the same prioritisation filter in order to bring in new items to the top of the list.

Develop clear guidance to stress the connection between research, innovation and application. Complement indicators for scientific excellence with criteria targeting efforts towards increased excellence of institutional management and leadership and networking (e.g. share of researchers involved in EU projects, share of foreign researchers and similar) as well as indicators for innovation and entrepreneurship which could be derived from the CIS survey data (Community Innovation Studies): how important different types of innovation is for firms' sales/income, how they source knowledge for innovation; collaboration with universities and R&D institutions etc. Start with simple indicators to measure impact e.g. conversion percentage from research to application and/or defining innovation indicators/measures per sectors/applications, thematically.

Develop a way to match regions with stronger knowledge base and resources with those with more affordable and better suited skills in such a way which does not require physical mobility or outmigration. Provide incentives for the more advanced regions to engage in assisting other regions to improve. This could be facilitated by introducing funds for underdeveloped regions which they can use to purchase services from the more developed regions.

Use the Widening programme to ensure that all regions have the same knowledge and metrics to measure the "ideation to innovation" phase and that a full advantage is taken of identifying the potential of the ideas. The key metric of ideation should be the share of volume of the highest ranking potential created and pushed to innovation process. Educate the Member States and other H2020 groups on the ideation to innovation process and find a common language, metrics and targets to design each H2020 group's activities to accelerate the pace of innovation initiated from the ideation phase.

#### **Build capacity, raise awareness and improve information**

Facilitate big data management to allow coherent and appropriate baseline formation as well as access to uniform and up to date datasets for the development of innovation.

Develop capacity building mechanisms to help target institutions to reach the “lower rungs of the escalator” and facilitate their full participation in the H2020 activities. COFUND could be used (small sums) to contribute to increased mobility and networking. Develop a focus on capacity building of transnational networks in the less developed regions to ensure that the target institutions and countries have the capacity to make the bid.

As less developed countries/regions fund a large part of their R&D using structural funds, consider using a Coordination and Support Action (CSA) targeting managers of regional funds in order to contribute to more robust measures which would provide synergies with H2020 (particularly in the case of bigger instruments, such as competence centres and excellence centres).

Improve guidance for potential applicants and evaluators. Publish a guide for applicants and evaluators in conjunction with the call. Organise workshops and other guidance sessions in target countries. Highlight best practice in the FAQ (Frequently Asked Questions) or separate guidance notes e.g. on how to create knowledge exchange mechanisms. Consider establishing a platform/mechanism learning from the experience of the RIS3 platform which organises peer review processes and networking.

Address the information gap and cultural barriers with in-depth studies and analyses of the participation in the Framework Programme that go beyond the typical statistics of participation and funding. Complement analysis of collaborative links and social networks by qualitative analyses of the cooperation patterns at both project and work package level, given that coordinators and work package leaders play a major role in the building and shaping of consortia. Support such studies by national bibliometric and patent analysis and availability of advanced research equipment in order to identify “hot spots” and “pockets of excellence”.

Invest in strategic intelligence in order to be able to plan and support research and innovation cooperation. Connect the information developed at European level with national data on the performance of national systems of higher education, research and innovation with the help of the ERA Observatory. Develop data and Information about the state of development of the research system as well as the possibilities of accessing it.

Consider developing an action for national funding schemes supporting the development of institutional research and cooperation strategies, preparation of proposals, the building of consortia and the training for European and international cooperation.

Involve the ERA stakeholder organisations in planning and information and stimulation campaigns to encourage participation by “advanced” institutions. Encourage EUA, CESAER LERU and EARTO to launch initiatives similar to the action started by the Max Planck Society in Germany. Regarding ERA-NET or COFUND actions Science Europe, NordForsk or TAFTIE are potential candidates for joint initiatives towards Widening. When marketing the Widening scheme highlight the benefits in broadening the talent base by cooperation and interaction with new partners. The focus should be on knowledge circulation for mutual benefit.

Introduce incentives to encourage leading institutions in advanced countries to take part in Widening actions such as inducement prizes which offer a financial reward teams/individuals who substantially contributed to the advancement of an issue that addresses a societal challenge and encourage them to continue. Encourage the advanced institutions participating in Widening actions to organize communication actions towards industry in their own country and in their RDI ecosystem in order to spread information on the centres of excellence, related expertise and actions. This would increase awareness among the industry in the advanced countries about the R&I potential in the target countries and encourage greater industry collaboration.

Enhance opportunities for international linkages such as institutional partnerships providing a basis for cooperating in other H2020 projects. Evidence shows that cross-border cooperation in Europe is needed to succeed in international cooperation based on critical mass and complementary competences especially when addressing societal challenges such as climate change, energy efficiency, urbanisation, health issues connected with demographic change etc.

In order to enhance linkages and synergies encourage each Widening programme to organize “concentration” seminars with other local actors involved in the Cohesion Policy. More specifically in the case of the Centers of

Excellence such seminars could take place in the first phase and the identified joint actions and goals could be detailed in application for the second stage.

Ensure that Member States or national/regional authorities are clear about the practical benefits arising from the Policy Support Facility which should be in operation in 2016-17. Information campaigns could be organised jointly on the one hand by the Commission services responsible for H2020 “Widening” and Cohesion Policy and on the other hand by the national/regional authorities responsible for H2020 and Cohesion Policy instruments including also the respective support services like NCPs. In such events, approaches have to be presented as practical and applicable as possible – if possible supported by examples of good practice presented by practitioners. Support actions could be launched for collecting and editing success cases of the synergies.

Develop a supportive framework for the preparation and implementation of the Widening actions, providing practical, concrete support. Lessons should be learned from the first experiences both in the course of planning and preparatory activities as well as from proposal preparations as followed by NCPs. Offer incentives to develop skills for collaboration, training, workshops on location, roundtables, permanent partnership structures, platforms. Creating an Inventory of experts in a target country or wider region could also help. (e.g. Baltic expert map). Good examples from FP7 Research Potential or from Regions of Knowledge could be used for these purposes. The target countries also have experience in using the European Social Fund for financing PhD programmes that include obligatory research stays in top universities in other Member States. Spread information from the experiences and available evaluations of past initiatives towards Centres of Excellence.

#### **Knowledge management and project management**

Introduce close monitoring of the financial procedures at the launch of the project in order to avoid legal issues related to accounting and financial management. Ensure consistent project management procedures in all H2020 programmes, including regulations on VAT and cost categories such as travel or subsistence. At the beginning of each project agree upon a monitoring and quality control system. Currently these details are usually described in the proposal but often in general terms and confirmed by the Commission only in mid-term or final reports, which increases discrepancies.

Provide detailed and transparent guidelines on all procedures for the EC and the beneficiary. Ensure regular external and internal audits, as well as an audit by the EC to confirm the compatibility of the contractual conditions against the implementation of any long term project. Ensure that the supervision is delivered by an EC staff with general accounting knowledge combined with the content related matter. The Commission should provide guidance and not a strict control in order to develop mutual trust. In case of multi-annum large scale projects ensure stability in the EC contact people and responsible staff to ensure organisational memory within the EC. Establish/develop a procedure to codify important facts and procedures.

Ensure that the EC funding is considered a long-term investment with the clear and tangible gains with focus on long term sustainability.

Building on the experience of the European Research Council, develop a database on projects that are completed or ongoing, and provide access to all interested beneficiaries (with information by country, category, outcomes, and key words etc.) in order to avoid duplication of efforts, and a waste of time and resources.

**2 JULY 2014**