

# Contribution from EARMA to the midterm review of Horizon 2020

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## 1. Introduction

With more than 180 individual and 95 institutional members in 38 countries, EARMA, The European Association of Research Managers and Administrators, represents a large cohort of research support professionals. EARMA's members provide support to researchers in projects funded by Horizon 2020 (H2020), national, international, and philanthropic research funders.

EARMA has followed the development of H2020 closely since its inception, and, through its members, continues to monitor the implementation of H2020 from proposal development to final exploitation. EARMA members are involved in many aspects of the delivery of the H2020 programme. As the first European programme to fund “research and innovation”, H2020 represented a ‘game changer’ which all Framework Programme (FP) participants, both longstanding and new, needed to embrace. The response to the H2020 programme has been overwhelmingly positive right from the start, an indication of its overall attractiveness.

While the overall administrative goal was a radical simplification of H2020 over previous FPs, first indications are that some of the intended simplifications have turned out to be significantly more complex in implementation and impose additional administrative and management burdens on beneficiaries. Some of these unintended complexities are being addressed whilst others still need attention. For example, EARMA is pleased that the European Commission plans to reintroduce actual personnel cost as eligible cost and in a similar direction, EARMA would welcome a similar introduction of the FP7 treatment of internal invoicing to H2020.

A major concern for all stakeholders has been the very heavy oversubscription of the programme which, when coupled to the astonishingly low success rates (average of 14%)<sup>1</sup>, means a lot of wasted effort on the part of applicants<sup>2</sup>. This wasted effort represents a significant cost to organisations that cannot be recouped and affects the ‘attractiveness’ of the programme in the longer term. EARMA welcomes, with some caveats, the wider introduction of two stage applications with strict selection to achieve a success rate for full proposals beyond 30%.

Some further areas of potential improvement will be addressed in this report. Our focus is on the definition and evaluation of impact in projects of different Technology Readiness Levels (TRL), on enhancing inclusion of Social Sciences and Humanities (SSH) in collaborative research, a new instrument to foster the advancement of low TRL projects with a perspective to reach mid TRL, evaluating interdisciplinary management and on evaluation feedback to the applicants.

Initial lessons learnt from the first calls of H2020 have indicated that the evaluation panels were composed of a good mix of experts from a wide range of disciplines, geographical background and organisational typologies. As with any process, however, improvements can always be made.

## 2. Summary and Recommendations

EARMA very positively supports H2020 and welcomes many of the enhancements in H2020 over previous framework programmes. EARMA is delighted to contribute to the ongoing discussions around the development of H2020 and, following an extensive consultation among its members, makes a series of recommendations that it feels support the programme, will make it more attractive and improve the outcomes for all H2020 stakeholders.

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<sup>1</sup>For EARMA, the success rates are the fraction of initial applications that are successful.

<sup>2</sup>Recent estimates put the average cost of preparing an H2020 proposal as €100,000. At the average success rate of 14%, proposers must invest €34 m to obtain one successful application.

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EARMA is not alone in this and we recognise and acknowledge that several other representative organisations are also doing the same thing. EARMA accepts that many of these organisations such as LERU, Coimbra, EARTO and our own Sister Professional Associations in Europe and elsewhere, to name a few, make many of the same recommendations.

## 2.1 Recommendations

1. EARMA recommends that further, effective, administrative simplification must continue and must, in the first instance, be based on trust between the Commission and research performers with appropriate levels of verification where warranted.
2. EARMA calls for more clearly defined expected impacts in the workprogrammes/call documentation providing also, where possible, links to background policies and documents showing why the topic was chosen as the subject of a call and having due cognisance of the alignment of impacts to the differing TRLs of a specific action type.
3. EARMA believes a clear briefing to project officers and evaluators/panel members on the distinction between different categories of impact and how they align to different actions/projects at different TRLs should occur.
4. EARMA recommends that in any H2020 documentation, the term “interdisciplinarity” not be used where promoting “SSH inclusion” is the intent and vice versa as these terms are not synonymous. Where either term is used it should be done in the appropriate context and consistently. In addition a clear, H2020-wide, definition of “interdisciplinarity” should be provided for both applicants and evaluators. This understanding should be reflected in the evaluation criteria.
5. EARMA recommends that topics suitable both for SSH inclusion and SSH lead should be clearly identified and should include a consistent description, framing and specification of expected impacts of SSH integration. To properly assess the SSH contribution, evaluation panels will require more expertise from across the SSH spectrum. In particular, the inclusion of SSH should be reflected in the evaluation (marking) process. Consequently, projects selected for funding in response to call topics flagged for SSH inclusion should include SSH.
6. EARMA recommends that in the case of large scale interdisciplinary projects, in addition to having discipline based experts, there should be a requirement to have individual evaluators and/or a member of the panel review who has the expertise to specifically judge the feasibility of the interdisciplinary management of the project. EARMA further recommends that in general evaluators and proposers are asked to explicitly address the management of interdisciplinarity as part of the implementation of a project.
7. EARMA recommends reviving the observer system in proposal evaluation process for the sake of transparency.
8. EARMA recommends that a new two phased project activity instrument could be developed for collaborative projects in pillar 3 with phase 1 aligned with projects covering a spectrum of lower to mid range TRL. Phase 2 funding could be applied for to move appropriate projects from Phase 1 along the value chain and into the higher TRL level.
9. EARMA recommends that excellence (for low TRLs) and excellence plus very clearly defined impact statements (for higher TRLs) should be the admission criteria for a proposal to access stage 2, where a success rate of 30 to 40% should be ensured. Such an approach would massively reduce the workload for all proposals that are rejected in the first evaluation. EARMA further suggests better feedback after stage 1 is needed to ensure that the optimal development of stage 2 bids is facilitated and that stage 2 evaluators have access to the stage 1 evaluation.

### 3. Potential Areas for Improvement

#### 3.1 More clearly defined impact and its influence on evaluation

The approach made in H2020 and in particular, in Pillar 3, to make calls less prescriptive thereby not outlining an expected research approach has been popular but has, it is recognised, resulted in an increase of applications. These broader open topics allow for more innovative and creative approaches to be proposed but have resulted in higher levels of subscription and therefore lower success rates. Whilst the choice of the challenges to be addressed can be easily understood, the choice of particular call topics for inclusion and how that choice is 'translated' into the identified call impacts is a little more opaque. Whether a broader challenge based call or a slightly more prescriptive call, the impact statements associated with each call topic should clearly indicate the expected impacts that any proposal to a call should make, bearing in mind that impacts should differ depending on the TRLs associated with a particular topic. The evaluator has to ensure that the projects selected for funding are likely to have the expected impacts as outlined in the call text. It is recognised that these impact statements in the calls are not always easy to draft but they remain a crucial marker for would be applicants who may be intending to put a bid together.

In some instances the expected impacts in the call documentation could be more clearly delineated and articulated. The designation of instrument should be made by the EC with a view to the type of impact required. However, where, for example, the call includes the possibility of more than one type of actions, (Research & Innovation Action and/or Innovation Action and/or Coordination and Support Action), the expected impacts are sometimes given as one list but these actions constitute different project types at different Technology Readiness Levels (TRL) with different starting and end points. The impacts cannot and should not be expected to be the same in each instance. It should also be indicated (in this instance) explicitly if a project is expected to cover all of the expected impacts or a subgroup of them. By having more clearly articulated impact statements, it is anticipated that the evaluation process which uses these as a guide will be improved with less chance for individual interpretation.

EARMA calls for more clearly defined expected impacts in the workprogrammes/call documentation providing also, where possible, links to background policies and documents showing why the topic was chosen as the subject of a call and having due cognisance of the alignment of impacts to the differing TRLs of a specific action type.

In addition, it is not apparent how the document 'H2020 indicators', which outlines how the results and impacts of H2020 at project and programmatic level are to be assessed, influences the development of the impact statements or indeed the actual evaluation of the impact of a given project proposal.

EARMA believes a clear briefing to project officers and evaluators/panel members on the distinction between different categories of impact and how they align to different actions/projects at different TRLs should occur.

#### 3.2 The integration of the Social Sciences and Humanities and the promotion of interdisciplinary research

Societal challenges such as climate change, migration and aging societies and how we face them will be a factor in our socio-economic development in the years to come and it is recognised that fully interdisciplinary research is the key to solving such challenges. Interdisciplinarity can cover a very broad spectrum where the distance between disciplines varies (from remaining within STEM or SSH to the inclusion of both STEM and SSH and beyond as well as the inclusion of a variety of different stakeholders types). As 'interdisciplinarity' is explicitly mentioned in the evaluation process, the provision of a definition of this term (and its distinction from multidisciplinary and transdisciplinarity) should be provided in the documentation as definitions can vary across different funders and it is important that applicants and evaluators in H2020 are using the same context. In addition it should be clearly articulated that interdisciplinarity and SSH inclusion are not the same thing and should not be used interchangeably. Whilst an inconsistent use of terminology only serves to confuse applicants, it remains the case that many of the topics which are the subject of H2020 and in particular the societal challenges have been flagged as relevant for SSH.

EARMA recommends that in any H2020 documentation, the term “interdisciplinarity” not be used where promoting “SSH inclusion” is the intent and vice versa as these terms are not synonymous. Where either term is used it should be done in the appropriate context and consistently. In addition a clear, H2020-wide, definition of “interdisciplinarity” should be provided for both applicants and evaluators. This understanding should be reflected in the evaluation criteria.

### 3.2.1 SSH inclusion

The European Commission’s own report on Integration of SSH in H2020 (Monitoring report on SSH-flagged topics funded in 2014 under the Societal Challenges and Industrial Leadership) shows clearly that the quality of SSH integration is highly uneven across projects as for example with the humanities and arts, which accounted for ‘only 9% of funded projects with an ‘SSH dimension’. 28% of projects funded under topics flagged for SSH do not integrate any contributions from the SSH. There seems to be a misalignment between the intention of the topics flagged, the applications submitted and the applications selected for funding. In addition, SSH can and should play a central role both in the development of Responsible Research and Innovation (RRI) as well as for policy making in Europe.

SSH should not be seen to be an ‘add on’ or ‘decoration’ or merely ‘a service’ to a STEM project. SSH should be fully included in the totality of proposal design, developing a single unified and complete research landscape. However, for this to occur, the scoping and framing of call topics and expected impacts should include inputs from the SSH community at the time of framing. Without this core-involvement of the SSH community in the framing, the resulting calls and proposals (even if flagged as SSH relevant) will lack the flexibility to support the inclusion of SSH.

To counter this ‘add-on’ or ‘decoration’ mindset requires an understanding of the centrality of the SSH contribution to societal challenges in particular, but also within technological developments as part of an integrated framework. For example, interactions between SSH and ICT can help ensure that technological developments are responsible and inclusive by taking into account human and societal concerns about how we relate both to each other and artefacts within an era of increasing hyperconnectivity. However, project officers are not always well versed in understanding what role the SSH could play and trying to promote the integration of SSH at the impact stage without the inclusion of SSH in the call construction is problematic. It would appear that often the call topic is contextualised within a STEM policy framework which then makes it difficult to even envisage expected impacts which would call for the inclusion of SSH. The description of impacts currently can be too narrow. Impact reveals intention. EARMA is not recommending SSH and STEM siloed based impact descriptions but rather descriptions which can be achieved from an integrated STEM-SSH approach. In other words if SSH is not explicitly contextualised in some way in the impact statements, then proposers will not be encouraged to include SSH collaboration in the design and implementation of their proposals.

Whether the inclusion of SSH should be mandatory or not in a proposal for SSH flagged topics remains open to discussion but their integration in a proposal should, where it makes sense and where it has been invited, be reflected in the evaluation system explicitly. What is mentioned at present in the evaluation process is “interdisciplinarity” which is not necessarily the same as ‘SSH inclusion’ (see above).

Statistics produced by the EC refer to the percentage of evaluators who come from a SSH or hybrid background and in many instances their participation levels could be improved upon in general and in particular in panels for review of topics which are flagged for SSH inclusion. In addition improved SSH briefings to all evaluators are needed providing clear examples of the benefit such SSH expertise can bring to a project. Moreover, the concept that one evaluator from SSH can provide an adequate SSH dimension is not reasonable and is akin to saying that someone from STEM can represent the needs of and understanding of all of STEM.<sup>3</sup>

Therefore it would appear that the makeup of expert Advisory groups, the drafting of workprogrammes/call topics and associated expected impacts, the flagging of topics appropriate for SSH involvement, the training given to NCPs, the information/guidance given to experts and the choice of expert evaluators all needs to be addressed if we are to truly integrate the engagement of the SSH community.

<sup>3</sup>The recent proposal to ‘crowdsource’ evaluations is an obvious, logical extension of the ‘triple O’ and would, perhaps, broaden the base of evaluators.

EARMA recommends that topics suitable both for SSH inclusion and SSH lead should be clearly identified and should include a consistent description, framing and specification of expected impacts of SSH integration. To properly assess the SSH contribution, evaluation panels will require more expertise from across the SSH spectrum. In particular, the inclusion of SSH should be reflected in the evaluation (marking) process. Consequently, projects selected for funding in response to call topics flagged for SSH inclusion should include SSH.

### 3.2.2 Interdisciplinarity Management

Interdisciplinarity has too often in the past been a shallow process of engagement, with temporary cross-disciplinary consortia and highly siloed project structures. Whether projects funded in H2020 with many disciplines are truly collaborative and integrative or whether there are separate work packages for separate disciplines would be interesting to understand. Whilst interdisciplinarity is explicitly mentioned in relation to the evaluation of excellence, the success of an interdisciplinary project is dependent in part on the management of the interaction between the various disciplines. This management, whether within STEM or SSH, across the two or beyond in projects brings its own challenges. Many evaluators regardless of background are not actually versed in understanding the management dynamics of a multi partner/country interdisciplinary project where the discipline specific language may vary in addition to difference across the culture and language of those involved. For example, it is sometimes the case that interdisciplinary projects may be slower to get started and have a longer time to impact than those lacking this dimension. The evaluation of the quality and efficiency of the implementation should therefore address not just innovation management but interdisciplinary management if appropriate. Similarly, in evaluation of 'excellence', a strengthening of the wording associated with interdisciplinarity (where appropriate) in terms of its inclusion explicitly leading to the provision of value added marks should be considered.

EARMA recommends that in the case of large scale interdisciplinary projects, in addition to having discipline based experts, there should be a requirement to have individual evaluators and/or a member of the panel review who has the expertise to specifically judge the feasibility of the interdisciplinary management of the project. EARMA further recommends that in general evaluators and proposers are asked to explicitly address the management of interdisciplinarity as part of the implementation of a project.

### 3.3 Reviewing the reviewers

It would be useful to have occasional reviews of the panel discussions to ensure that there is sufficient transparency around the process and that there is consistency across different panel meetings. The reviewer would not be a part of the panel but would act as an observer on behalf of the EC with a remit of ascertaining what aspects appear to be working well or not.

EARMA recommends reviving the observer system in proposal evaluation process for the sake of transparency.

### 3.4 The TRL spectrum in H2020

Issues to do with oversubscription are outlined below but a related issue surrounds growing concerns that aside from the ERC programme, the remainder of H2020 and in particular Pillars 2 and 3 now concentrate on projects with higher levels TRLs. There is therefore a perceived squeezing out of higher level educational organisations from participation in these pillars and that the participation is confined to a smaller number of instruments than in FP7. More flexibility of approach to project make up is needed. The latest figures from H2020 show that whilst Universities are still collecting the largest share of grants (35%), this is down from 44% in FP7. The reasoning for this decrease is the increased concentration on innovation projects but in this regard on an interpretation of innovation as being only associated with projects operating at the high TRL level. Particularly low success rates were associated with bottom-up programmes and those with lower TRLs (far below 10%), where even applications receiving full marks did not necessarily receive funding in the first calls of

H2020. The reduction in funding for lower TRL spectrum projects carries the risk that H2020 will lose its attractiveness for university participants due to frustration on the part of applicants and the apparent attractiveness of other funding opportunities leading to more proposals going elsewhere than H2020. The focus on higher TRL levels in the call topics for Pillar 3 Societal Challenges could lead to the break up of long standing, successful Europe-wide interdisciplinary collaborations and networks that represent important achievements in the development of the knowledge foundation of Europe built up through earlier Framework Programmes FP6 and FP7 and that underpin the ERA.

As Wilhelm Krull, Secretary General of the Volkswagen Foundation, the largest private funder of science in Germany indicated in 2012 and as EARMA would endorse, Research funding bodies must foster risk-taking, be more tolerant of errors, allow for changes in direction - and give scientists the time to develop new ideas.

Whilst the response might be to say that the FET Open programme takes care of collaborative projects starting at a lower TRL level, in essence this is not the case. FET is about high risk and potentially high return. There is a middle of the road - to have the potential for collaborative projects with a variety of stakeholders which start at a lower TRL and moving up the scale to mid range TRL level. These projects can be aligned to call topics in pillar 3 but with expected impacts aligned appropriately to TRLs at this level and could be of the order of 3 to 5 years in duration. Following on from this, there could be an opportunity for such projects to compete for further funding (possibly with some new partners in and some original partners leaving) to move (where appropriate) the projects along the value chain up to the higher TRL level. This second phase competition would be only be available to those who have successfully participated in phase 1. There is also the possibility for cross collaboration where two phase one projects come together and move forward into a joint phase 2 bid. The precedent for this new model is the ERC project moving to a proof of concept phase - not all do, but you can only compete for and secure a proof of concept grant if you have a ERC grant. This concept provides the system with a greater capacity to innovate and to be creative, strengthens our underlying systems and allows only those with higher TRL potential to develop and continue up the value chain. Evaluators of phase 1 projects applying for phase 2 project funding should have the necessary expertise to ascertain if the claim to be able to move up the TRL level is likely to be justified. This type of new activity would be best aligned to societal challenges many of which will still continue to need to be tackled beyond H2020's lifetime.

EARMA recommends that a new two phased project activity instrument could be developed for collaborative projects in pillar 3 with phase 1 aligned with projects covering a spectrum of lower to mid range TRL. Phase 2 funding could be applied for to move appropriate projects from Phase 1 along the value chain and into the higher TRL level.

### 3.5 Tackling Oversubscription and Feedback

A major feature of H2020 so far was oversubscription inducing low overall success rates (average 14% and decreasing). Considering the high economic cost of bid preparation, which may be in the range of a full person-year for one proposal, the cost of applying to H2020 is currently out of proportion and thus discourages further participation, in particular of universities and research institutions. Unless this issue is addressed potential applicants are likely to seek their opportunities in other programmes with greater chances of success (or less cost for preparation) either inside or outside Europe undermining many years of work.

EARMA in general welcomes the recent statement of Robert Jan Smits in Research Europe indicating that the EC is planning to use restrictive two stage evaluation procedures ensuring success rates above 30% in stage 2 in the future. EARMA however cautions that making it simpler to apply in stage 1 without more explicit definition of impacts to be achieved (see section on impact) could result in more oversubscription and not less generating the proverbial 'own goal'. Having an increased emphasis on impact in stage 1 evaluations can only work if, as outlined above, applicants know exactly what the expected impacts (aligned to the correct TRL) are and whether SSH integration should be included.

A two stage evaluation procedure with stringent selection of excellent approaches in the first round evaluation would reduce the workload for applicants until chances for success are reasonable. A reduced number of full applications at stage 2 with a high potential for success would also represent a manageable workload for evaluation panels and should leave space to reconsider evaluation feedback. Evaluation summary reports in stage 1 may be as short and concise as the short proposals. Whilst projects selected for funding do not enter into an negotiation phase, the move from stage 1 to stage 2 can be used not just to develop the proposal more fully but to address any issues outlined by evaluators in stage 1. Those who are invited to a stage 2 proposal should therefore receive feedback from the stage 1 to ensure that the

optimal further development of the proposal is encouraged. Full proposals, by contrast, merit a full individual evaluation report explaining the scores given and any weak sections identified by the reviewers. Such feedback is essential as a basis for improvement of project planning.

EARMA suggests that excellence (for low TRL) and excellence plus very clearly defined impact statements (taken on board the comments in earlier sections) for projects extending into the higher TRLs should be the admission fee for a proposal to access stage 2, where a success rate of 30 to 40% should be ensured. Such an approach would massively reduce the workload for all proposals that are rejected in the first evaluation. EARMA further suggests better feedback after stage 1 is needed to ensure that the optimal development of stage 2 bids is facilitated and that stage 2 evaluators have access to the stage 1 evaluation.

## 4. Conclusion

EARMA recognises that programmes such as H2020 grow and develop all the time. This is a measure of how responsive a programme can be and, on the evidence to date, there is a willingness on the part of the Commission to be responsive.

Recognising that there are many stakeholders in the H2020 process, EARMA acknowledges that we all share many of the same concerns and we support our colleagues in their submissions. However, in this paper we have tried to raise issues that specifically arise for our members or for their clients, the researchers that carry out the work.

We remain willing and able to engage with the Commission and other stakeholders in making H2020 and its successors meet all the expectations that have or will be set for them.