

EUROPEAN RESEARCH AREA BOARD

ERAB recommendation on research and innovation policy for Grand Challenges

Delivered after the end of ERAB's mandate on behalf of the chair only

In its 1st Report (2009) ERAB advocated that Europe needed a New Renaissance as a future societal model and to get there ERAB argued that Europe needed more than ever its S&T&I base to meet the Grand Challenges.

ERAB advocated that Grand Challenges involve a combination of major public and private interests, key for realizing future economic growth. Grand Challenges are not to be defined, assessed or solved by any single scientific or technological discipline or within one specific sectorial policy framework. To meet the Grand Challenges, new policies, new governance models, new innovation solutions and strategies and new investment models are needed. Grand Challenges involve many different stakeholders, are multidimensional, trans-disciplinary, systemic and they require new ways of thinking which go beyond traditional frameworks and disciplines. And they lead to a need to re-think research and innovation policy. Putting the Grand Challenges approach at the heart of Europe's R&I strategy is therefore more than a thematic prioritization.

ERAB is pleased that today, the Grand Challenges approach is widely accepted in European policy making and that it is one of the key building blocks of the EU Framework Programme for Research and Innovation 2014-2020 (Horizon 2020).

In its final working year ERAB discussed how to strengthen the European Grand Challenges approach in S&T&I as it felt the discourse on the Grand Challenges also needed to be translated into reality. ERAB therefore commissioned a study to explore to what extent there is evidence for a shift towards a challenge driven research and innovation approach and if so, how selected countries around the world translated the approach into reality¹.

Recommendations

1. A comprehensive approach is needed

Where in Europe the Grand Challenge approach is translated into a jump to (fundamental) scientific challenges, the USA has a stronger focus on jumping to technologies and creating longer term industrial opportunities.

Most Asian countries however, develop a more *Comprehensive approach*, building on their tradition of national priority setting. This comprehensive approach aligns university training, scientific research, technology development, industrial innovation and social organization for a

¹ *'Investing in Research and Innovation for Grand Challenges'* by Joint Institute for Innovation Policy (JIIP), January 2012.

systemic transition towards green *growth*, green *industry* and green *employment*.

ERAB recommends a comprehensive R&I approach for the Grand Challenges.

2. A demand led approach to be followed.

The wealth of regional and local R&I policy initiatives in Grand Challenges like health, point to a strong interest at the level of innovation and diffusion of innovations in market and society. Fostering and “up scaling” initiatives at this level may prove to be very beneficial for the goals of research excellence and industrial growth and leadership as well. It may turn a challenge field into a highly dynamic and demanding market which triggers the development of new institutions, organizational innovations, new technologies and fundamental research questions.

ERAB recommends that R&I policy for the Grand Challenges follows a demand led approach.

3. EC leadership is welcome

Going through the policy documents of Member States and backed by ample reference to European Commission and Union documents, there is a relatively strong consensus at Member State level about the nature of the challenges. This provides *an opportunity for stronger guidance and/or process management by the European Commission*, even when many of the challenges are part of policy domains which largely fall under the Member States' responsibilities.

ERAB recommends to reinforce and speed up the Joint Programming Initiatives, to make them more ambitious and call for larger coordinated investment from the side of Member States.

4. An arm's length agency to implement the programs

When implementing R&I programs in Europe, the setting up of arm's length agencies, as advocated by ERAB in its Common Strategic Framework (CSF) advice (2011), is recommended.

Examples from the agencies in the US and the private sector initiatives show us that a degree of political and organizational independence from changing governments and administrations usually leads to more effective programs.

The agencies should not so much be seen as (research and innovation) funding bodies, but rather try to be “change agents” or “trans-institutions”, building upon the relatively strong and stable political consensus with regard to the specific challenge. Each agency requires a platform/mechanism where the different stakeholders can engage in real constructive dialogue.

ERAB recommends exploring how the European Innovation Partnerships can fulfill a role in the setting up of a more agency based approach.