ESF International workshop on peer review: *Broader Impact*
Some issues for further reflection following the workshop of December 2010
Various interpretations of impact

• “Sustained powerful influence”?
• Connecting knowledge production with knowledge use?
• …
Various domains where impact needs to be considered:

• Programme design
  – Overall programme logic

• Proposals/grant applications
  – Encouraging applicants to think beyond the proposal
  – Selecting the best (‘bang for buck’)

• Project implementation

• Ex-post programme evaluation

Peer review comes in here; but links to all domains
Impact on what?

- Scientific field?
- Across disciplines?
- Wider still (society, economy, sustainable development...)

Where should impact be defined? And by who?

- Upstream, in the design and description of the calls for proposals?
- Allow applicants to describe the type of impact in the proposal?
- Combination of above?
- ...
What should peer reviewers be looking for?

- The degree of impact that could be expected from the proposed research?
- The “logistics” being proposed to maximise that impact?
  - Communication, public engagement, user involvement, “productive interactions” etc
- Combination of above?
What sort of peer review experts do we need?

• “Every scientific is a citizen”?
• Specialist expertise?
Intellectual merit (“excellence”) vs. Impact

• Decorrelating the two
  – Can we? Should we?
• Relative importance
  – Set out weightings in advance?
  – Let reviewers judge relative weight?
  – Let programme managers decide afterwards?
Broader impact and Horizon 2020

Alan Cross
What is Horizon 2020

• Commission proposal for a 80 billion euro research and innovation funding programme (2014-20)
  – Adopted on 30 November 2011
• Part of proposals for next EU budget, complementing Structural Funds, education, etc.
• A core part of Europe 2020, Innovation Union & European Research Area:
  – **Responding to the economic crisis** to invest in future jobs and growth
  – **Addressing peoples’ concerns** about their livelihoods, safety and environment.
  – **Strengthening the EU’s global position** in research, innovation and technology
What’s new

• A single programme bringing together three separate programmes/initiatives*

• More innovation, from research to retail, all forms of innovation

• Focus on societal challenges facing EU society, e.g. health, clean energy and transport

• Simplified access, for all companies, universities, institutes in all EU countries and beyond.

*The 7th research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)
Three priorities:

1. Excellent science
2. Industrial leadership
3. Societal challenges
Priority 1  Excellent science

Why:

• World class science is the foundation of tomorrow’s technologies, jobs and wellbeing
• Europe needs to develop, attract and retain research talent
• Researchers need access to the best infrastructures
## Proposed funding (million euro, 2014-20)

<table>
<thead>
<tr>
<th>Category</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Research Council</td>
<td>13 268</td>
</tr>
<tr>
<td>Frontier research by the best individual teams</td>
<td></td>
</tr>
<tr>
<td>Future and Emerging Technologies</td>
<td>3 100</td>
</tr>
<tr>
<td>Collaborative research to open new fields of innovation</td>
<td></td>
</tr>
<tr>
<td>Marie Curie actions*</td>
<td>5 752</td>
</tr>
<tr>
<td>Opportunities for training and career development</td>
<td></td>
</tr>
<tr>
<td>Research infrastructures (including e-infrastructure)</td>
<td>2 478</td>
</tr>
<tr>
<td>Ensuring access to world-class facilities</td>
<td></td>
</tr>
</tbody>
</table>
Priority 2  Industrial leadership

Why:

• Europe needs more innovative SMEs to create growth and jobs
• Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors
• Europe needs to attract more private investment in research and innovation
## Proposed funding (million euro, 2014-20)

<table>
<thead>
<tr>
<th>Area</th>
<th>Funding (million euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership in enabling and industrial technologies (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</td>
<td>13,781</td>
</tr>
<tr>
<td>Access to risk finance</td>
<td>3,538</td>
</tr>
<tr>
<td>Leveraging private finance and venture capital for research and innovation</td>
<td></td>
</tr>
<tr>
<td>Innovation in SMEs</td>
<td>619</td>
</tr>
<tr>
<td>Fostering all forms of innovation in all types of SMEs</td>
<td></td>
</tr>
</tbody>
</table>
Priority 3  Societal challenges

Why:

- EU policy objectives (climate, environment, energy, transport etc) cannot be achieved without innovation
- Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities
- Promising solutions need to be tested, demonstrated and scaled up
<table>
<thead>
<tr>
<th>Proposed funding (million euro, 2014-20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health, demographic change and wellbeing</td>
</tr>
<tr>
<td>Food security, sustainable agriculture, marine and maritime research &amp; the bioeconomy</td>
</tr>
<tr>
<td>Secure, clean and efficient energy*</td>
</tr>
<tr>
<td>Smart, green and integrated transport</td>
</tr>
<tr>
<td>Climate action, resource efficiency and raw materials</td>
</tr>
<tr>
<td>Inclusive, innovative and secure societies</td>
</tr>
</tbody>
</table>

*Additional €1 050m for nuclear safety and security from the Euratom Treaty activities (2014-18). Does not include ITER.
# Role of the EIT and JRC in Horizon 2020

## Three priorities to be supported by:

| European Institute of Innovation and Technology (EIT) *Combining research, innovation & training in Knowledge and Innovation Communities* | 1 360 + 1 460* |
| Joint Research Centre (JRC)** | 1 962 |

* Second tranche pro rata from LEIT and Societal challenges (subject to review)

**Additional €724 m for the JRC to be funded from the Euratom Treaty activities
Simplification: summary

- **Single set of** simpler and more coherent participation rules.
- New **balance between trust and control**.
- Moving from several **funding rates** for different beneficiaries and activities to just two.
- Replacing the four methods to calculate overhead or "indirect costs" with a **single flat rate**.
- Major simplification under the **forthcoming financial regulation**
- **Successful applicants to get working more quickly**: reduction of average time to grant by 100 days (current average of around 350 days under FP7)
Next steps

From 30/11: Parliament and Council negotiations on the basis of the Commission proposals


Mid 2012: Final calls under 7th Framework Programme for Research to bridge gap towards Horizon 2020

By end 2013: Adoption of legislative acts by Parliament and Council on Horizon 2020

1/1/2014: Horizon 2020 starts; launch of first calls
Broader impact in proposal evaluation: 
*Experience of previous programmes*

- A narrowing of the notion of impact from FP5 to FP7
- Sharper wording
- Dropped references to far-reaching objectives
- Wordy, non-scored criteria cause confusion
FP6 POTENTIAL IMPACT

• The extent to which the proposed project is suitably ambitious in terms of its strategic impact on reinforcing competitiveness (including that of SMEs) or on solving societal problems.

• The extent to which the innovation-related activities and exploitation and/or dissemination plans are adequate to ensure optimal use of the project results.

• The extent to which the proposal demonstrates a clear added value in carrying out the work at European level and takes account of research activities at national level and under European initiatives (e.g. Eureka).

FP6 ADDITIONAL CRITERIA (not scored, only commented)

• Are there gender issues associated with the subject of the proposal? If so, have they been adequately taken into account?

• Have the applicants identified the potential ethical and/or safety aspects of the proposed research regarding its objectives, the methodology and the possible implications of the results?

• To what extent does the proposal demonstrate a readiness to engage with actors beyond the research community and the public as a whole, to help spread awareness and knowledge and to explore the wider societal implications of the proposed work?

• Have the synergies with education at all levels been clearly set out?

• If third country participation is envisaged in the proposal, is it well justified and the participation well integrated in the activities?
FP7 Evaluation criteria (2006-2013)

“Cooperation” & “Capacities”

1. S&T Quality (relevant to the topic of the call)
   Concept, objective, progress beyond state-of-art, work-plan

2. Implementation
   Management
   Individual participants and consortium as a whole
   Allocation of resources

3. Impact
   Contribution to “expected impacts” listed in work programme
   Plans for dissemination/exploitation

Example: Structure European epigenetic research...and generate the technology, knowledge and know-how to increase Europe’s competitive position in exploiting the vast amount of epigenome data that will become available in the near future.

Including communication with the public at large
FP7 “Frontier research” (ERC)

Quality of Principal investigator
  research output/track record
  (Intellectual capacity and creativity

Quality of research project
  Ground-breaking
  Potential impact
  Methodology
  High-gain/high -risk balance

Research environment
  Contribution to the project
  Other project participants

In terms of new and important, scientific, technological or scholarly horizons; research environment and capabilities for frontier research in Europe.
Horizon 2020

• A thorough ex-ante Impact Assessment
  – Evidence of benefits of public investment in R&I
  – Reasons for acting at EU level
  – Comparison of scenarios (BAU, national only, Horizon 2020 etc)

• Programme logic minking research and innovation with challenge-based approach

• Clear objectives and indicators
European ‘added value’:

• To maximise impact, Horizon 2020 will focus on objectives and activities that cannot be efficiently undertaken by Member States acting alone.
  – Help structure European R&I funding landscape
  – Maintain critical mass in key areas
  – Continent-wide competition
  – Support trans-national mobility,
  – Take on high risk and long-term R&D,
  – Leverage additional public and private investments in research and innovation;
  – Contribute to the European Research Area
  – Accelerate the commercialisation and diffusion of innovations across the Single Market.
  – Support policy making
Specific Objectives under ‘Societal Challenges’ [extracts]

• Improve the lifelong health and wellbeing of all

• Sufficient supplies of safe and high quality food [...] , ecosystem services, competitive and low carbon supply chains.

• Reliable, sustainable and competitive energy system [...] 

• European transport system that is resource-efficient, environmentally friendly, safe and seamless [...] 

• Achieve a resource efficient and climate change resilient economy and a sustainable supply of raw materials [...] 

• Inclusive, innovative and secure European societies [...]
Additional performance indicators (examples):

• R&D intensity target (3 % of GDP)
• The Europe 2020 innovation headline indicator
• Publications in peer-reviewed high impact journals in the area of the different Societal Challenges
• Share of publications from ERC funded projects which are among the top 1 %
• Patent applications in the area of the Societal Challenges
• EU legislation referring to activities supported under different Societal Challenges
“Award” criteria

• The proposals submitted shall be evaluated on the basis of the following award criteria:
  (a) excellence;
  (b) impact;
  (c) quality and efficiency of the implementation.

• The sole criterion of excellence shall apply for proposals for ERC frontier research
Thank you for your attention!

Find out more:

www.ec.europa.eu/research/horizon2020