



Interim evaluation of Horizon 2020

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European Commission**



STRUCTURE OF THE PRESENTATION



Key features of Horizon 2020



Scope, methods and evidence-base



Where we stand (after three years)



Key findings



Next steps



KEY FEATURES OF HORIZON 2020

#1

The first **integrated programme**, covering both basic research and close-to-market innovation.



Total budget of ~ **EUR 77 billion**. Less than 10% of public R&D spending in the EU.



A **3 pillar approach** with one general objective: *"To contribute to building a society and economy based on knowledge and innovation across the Union."*



KEY FEATURES OF HORIZON 2020



Excellence as guiding principle.



Central management by EC, guided by **Strategic programming** process.



A wide **toolbox of instruments** and actions.



Radical **simplification** compared to predecessor (FP7).



WHERE WE STAND ALLOCATION OF FUNDING 2014-2016

**Additional
priorities:
EUR 994 million
to 270 projects**



**1. Excellent
Science Pillar :
EUR 7.5 billion
to 5964 projects**

**3. Societal
Challenges Pillar:
EUR 7.4 billion
to 2941 projects**

**2. Industrial
Leadership Pillar:
EUR 4.5 billion
to 1933 projects**

75% of funding for collaborative projects

23.9% for SMEs (above the legal target of 20%!)



SCOPE, METHODS AND EVIDENCE-BASE

5 EVALUATION CRITERIA FOR ALL ASSESSMENTS

- Relevance
- Efficiency
- Effectiveness
- Coherence
- EU Added Value

- Better Regulation – **"evaluate first"** principle.

First Vice-President Timmermans: *"We must be honest about what works and what doesn't."*

INTERVENTION LOGIC - THE BASIS OF ALL ASSESSMENTS



- Horizon 2020 legal base Art. 32: Detailed outline of **evaluation coverage**
- **18 "thematic" assessments** annexed to SWD - for each Horizon 2020 specific objective
- **EIT, Art. 185 and Art. 187 initiatives:** included, but also in separate, dedicated evaluations



SCOPE, METHODS AND EVIDENCE-BASE



STRENGTHS

- > **Wide evidence base**
- > Use of **counterfactual analysis**
- > Benchmarking with FP7
- > Building **in-house evaluation culture**



CHALLENGES

- > Very **few projects completed** (~0.6% of budget committed)
- > Time-lags for R&I impacts
- > **Data availability** & quality, lack of impact indicators
- > Multi-faceted policy **context** and non-linear **impact pathways**



A WIDE EVIDENCE BASE

TRIANGULATION, TRANSPARENCY AND REFERENCING

DATA SOURCES

Surveys, interviews, case studies, expert groups, Horizon 2020 monitoring data (e.g. CORDA), Commission administrative data (e.g. budget), existing databases (e.g. OECD, Eurostat, ORBIS) and publications (incl. European Parliament, European Economic and Social Committee, Court of Auditors)

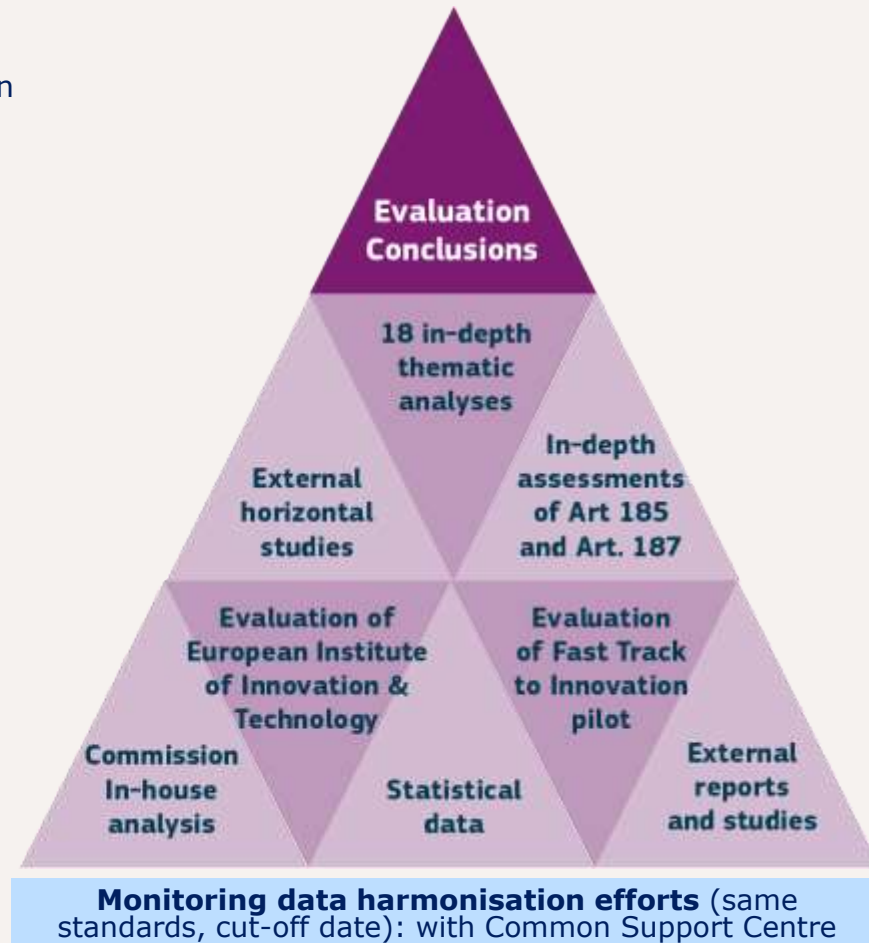
METHODS

Macro-economic modelling, counterfactual analysis, Social Network Analysis, descriptive statistics, bibliometric analysis, text and data mining analysis, document review, case studies, synthesis of thematic assessments

STAKEHOLDER CONSULTATIONS To contextualise findings

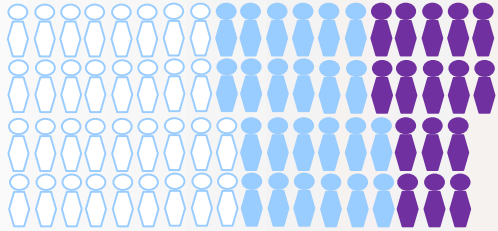
Stakeholder consultation on the Interim Evaluation of Horizon 2020 (*~3500 survey replies, 300 position papers*)

Surveys of National Contact Points, Simplification Survey, Call for Ideas on the European Innovation Council





WHERE WE STAND APPLICANTS, PROPOSALS AND SIGNED GRANTS

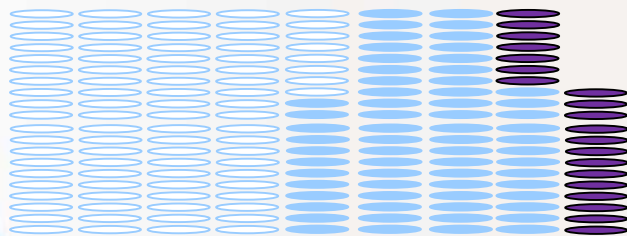


~75,000 applicants
submitted over **100,000 proposals**
requesting **EUR ~173 billion**

~11,000 grants were signed for
~EUR 20 billion



Overall **success rate was 11.6%**



Less than 1 in 4 high-quality proposals could be funded



KEY FINDINGS FROM THE INTERIM EVALUATION OF SOCIETAL CHALLENGE 2

Food security, sustainable agriculture and forestry,
marine, maritime and inland water research and the
bioeconomy



SC2 INTERIM EVALUATION

Background and methodology

- **Specific objective of SC2:** *transition to a sustainable European bioeconomy & securing sufficient supplies of safe, healthy & high quality food & other bio-based products, by developing productive, sustainable & resource-efficient primary production systems*
- **State of play** (01/01/2017): EC contribution of EUR 832.1 million (11% of Horizon 2020 funding to Societal Challenges), 365 grants signed, success rate of 13.0%
- Interim evaluation carried out with the assistance of an **independent Expert Group**
- **Methodology:** desk research, composition analysis (CORDA data), interviews, survey of participants, projects mapping



SC2 INTERIM EVALUATION

Main achievements

- ▶ Clear scientific **rationale** and policy **relevance** of SC2 in line with the EU's Bioeconomy strategy, the EC policy agenda, CAP, CFP
- ▶ On track to achieve its **main objectives**
- ▶ More **focus on innovation**: BBI JU setup, SME Instrument projects, significant technological advances (higher TRLs)
- ▶ Strategic **international cooperation** improved, e.g. Atlantic Ocean Research Alliance
- ▶ Strong **coherence** with other EU policies (e.g. CAP, CFP, maritime & climate policies)
- ▶ New **multi-actor approach** increases users' involvement and uptake



SC2 INTERIM EVALUATION

Areas for improvement

- Still **potential to strengthen links** between SC2 and other parts of Horizon 2020, namely ERC funded research and the EIT
- **High level challenges** (e.g. food security, waste etc.) are being addressed, but could be better evidenced and articulated
- Need for a better programme-level strategic framework: **Translation of high level challenges** and objectives into **specific call topics** not always clear
- Finding the **right balance** on project size, coverage of topics, R&I
- Further room for improvement in **widening participation** from new Member States



For more details on the evaluation of Societal Challenge 2, see Annex 2, Part K of the SWD on the interim evaluation of Horizon 2020:

[https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd\(2017\)221-annex-2-interim_evaluation-h2020.pdf](https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd(2017)221-annex-2-interim_evaluation-h2020.pdf)



KEY FINDINGS FROM THE HORIZON 2020 INTERIM EVALUATION



HORIZON 2020 INTERIM EVALUATION KEY FINDINGS - RELEVANCE



ITS INITIAL OBJECTIVES ARE STILL FULLY VALID

- the EU still underinvests in R&I activities
- the identified Societal Challenges are still present



IS ATTRACTIVE TO STAKEHOLDERS

- ~33,000 applications per year (vs. 20,000 in FP7)



HAS PROVEN FAIRLY FLEXIBLE

- to emerging needs and political priorities (e.g. emergency Ebola call, more funds to deal with migration)



HORIZON 2020 INTERIM EVALUATION KEY FINDINGS - RELEVANCE

ROOM FOR IMPROVEMENT

Scope for establishing an **impact-focused, mission-oriented approach**.

The strategic challenges and objectives are **not always clearly translated in specific calls** and topics.

Low involvement of civil society (but improved over FP7). Need to **bring R&I closer to the public**.



HORIZON 2020 INTERIM EVALUATION KEY FINDINGS - EFFICIENCY



ON TRACK TO BE MORE EFFICIENT THAN FP7

- Administrative expenditure below the 5% legal target
- Time-to-grant 110 days faster than FP7



NETWORKS A WIDE RANGE OF STAKEHOLDERS

- Participants from over 130 countries
- 52% of participants are **newcomers**; more of them come from EU-13 (31.2%) than EU-15 (19.7%)



LARGE-SCALE OVERSUBSCRIPTION

- Success rate only 11.6% (vs. 18.4% in FP7)
- ~EUR 1.7 billion spent to write unsuccessful proposals



HORIZON 2020 INTERIM EVALUATION KEY FINDINGS - EFFICIENCY

ROOM FOR IMPROVEMENT

Over **EUR 60 billion more** needed to fund **all high quality proposals**.

Comprehensiveness of **evaluation feedback** is a concern.

International cooperation could be further increased.

Low participation from **EU-13**, but improving over time.



HORIZON 2020 INTERIM EVALUATION EFFECTIVENESS - SCIENTIFIC IMPACT

INVOLVING AND TRAINING THE BEST



- Attracting **EU's and world's best institutions** & researchers
- ~340,000 researchers supported
- International mobility for 27,000 researchers (MSCA)

GENERATING SCIENTIFIC BREAKTHROUGHS



- ~4,000 peer-reviewed publications (2/3 in Open Access), **cited more than 2x world average**
- 17 Nobel Prize winners supported
- 71% of ERC projects made scientific breakthroughs



BUILDING COLLABORATION NETWORKS

- 1 in 5 publications from collaboration **academia-private sector**
- More **interdisciplinary publications** than in FP7 (7.5%)



HORIZON 2020 INTERIM EVALUATION EFFECTIVENESS - SCIENTIFIC IMPACT

ROOM FOR IMPROVEMENT

Slow progress on **spreading excellence** in Europe.

Scope for making Horizon 2020 data and publications even more **openly accessible**.

Too early to have a full picture of results.



HORIZON 2020 INTERIM EVALUATION EFFECTIVENESS - ECONOMIC IMPACT

PRODUCING INNOVATIONS & COMPETITIVENESS



- More **private sector participations** (33.2%) than FP7
- Funded projects ~40% more likely to be granted patents; patents are of **higher commercial value** than other peers
- 70% of SMEs aim at **new-to-market innovations**

GENERATING JOBS, GROWTH & INVESTMENTS



- GDP gain between EUR 400 to EUR 600 billion by 2030
- Every euro invested **brings back 6 to 8.5 euros**

SUPPORTING & NETWORKING BUSINESS & SMEs



- 5,700 organisations funded under Access to Risk Finance
- EUR 13 billion **private funds leveraged**



HORIZON 2020 INTERIM EVALUATION EFFECTIVENESS - ECONOMIC IMPACT

ROOM FOR IMPROVEMENT

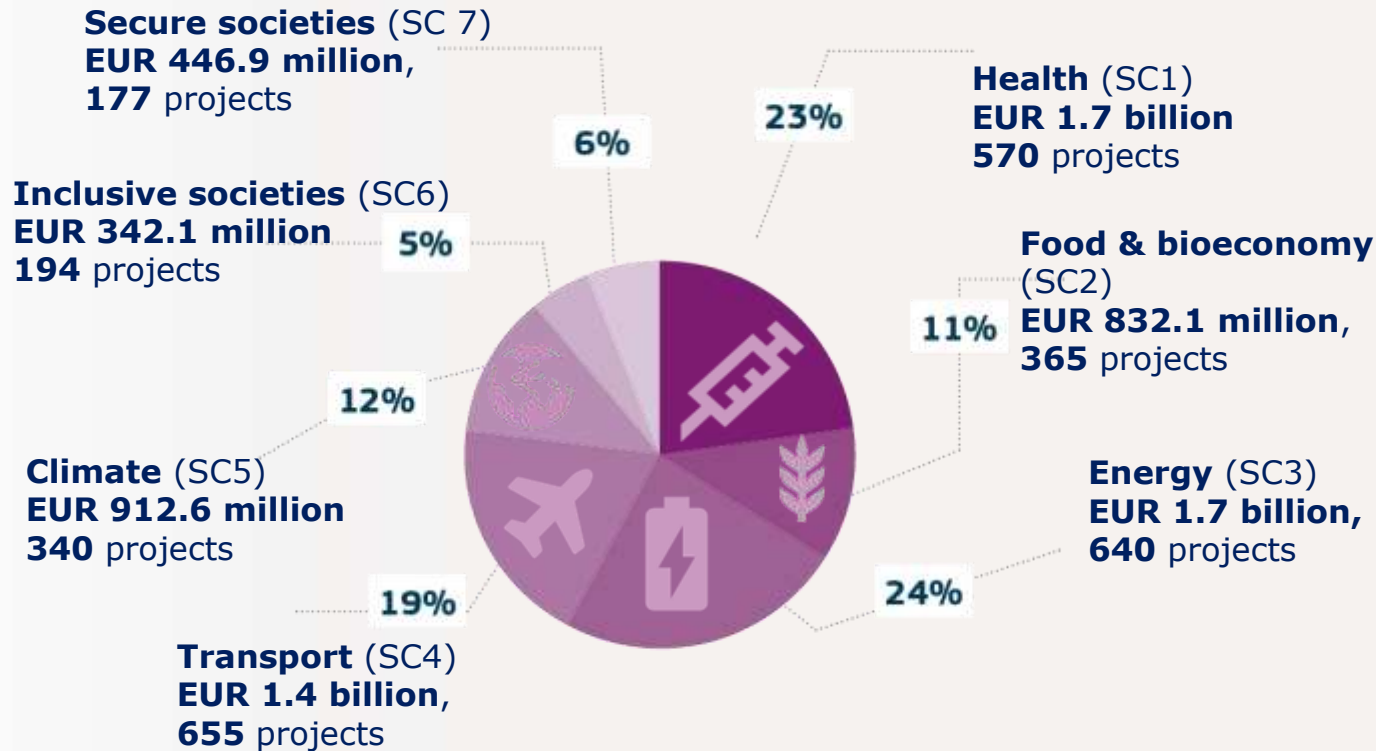
Support for **breakthrough, market-creating-innovation** can be strengthened.

More could be done to foster **demand for innovative solutions & user-driven innovation.**

Need to **address potential barriers to innovation** (e.g. regulation, access to finance) for full market uptake.



HORIZON 2020 INTERIM EVALUATION EFFECTIVENESS - SOCIETAL IMPACT



- **Cross-cutting impact on the Societal Challenges** expected in most projects





HORIZON 2020 INTERIM EVALUATION EFFECTIVENESS - SOCIETAL IMPACT

ROOM FOR IMPROVEMENT

Targets for expenditure on **sustainable development and climate action** are not yet met.

Gender equality and the embedding of **Social Sciences and Humanities** can be further promoted.

Feedback from R&I projects to policy-making could be reinforced.



HORIZON 2020 INTERIM EVALUATION KEY FINDINGS - COHERENCE



INCREASED COHERENCE WITH OTHER INITIATIVES

- With **Structural Funds**: e.g. through the Seal of Excellence
- **Structuring effect**: e.g. through ERC quality label & Teaming for Excellence
- R&I: engine to implement the **Sustainable Development Goals**





HORIZON 2020 INTERIM EVALUATION KEY FINDINGS - COHERENCE

ROOM FOR IMPROVEMENT

R&I funding landscape is complex and could be rationalised.

Internal coherence can be further improved, e.g. limit the **number of focus areas**.

Synergies with ESIF & other EU funding can be strengthened.

Need to ensure balance of **technology readiness levels**.



HORIZON 2020 INTERIM EVALUATION KEY FINDINGS – EU ADDED-VALUE



SPEED, SCALE AND SCOPE

- Create excellence through **EU-wide competition**
- Improve **competitive advantage** of participants
- Critical mass to tackle **global challenges**
- Raise **EU attractiveness** as a place to carry out R&I



COMPARED TO NAT. & REG. LEVEL, EU-FUNDED TEAMS

- Attract **2x more researchers** from other EU countries
 - **Achieve results faster** in **45%** of projects
 - Have **2x more collaborations**
-
- 83% of projects **would not go ahead without EU funding!**
 - **No evidence of substitution** effect (EU - national support)



HORIZON 2020 INTERIM EVALUATION KEY STRENGTHS



An **attractive, simplified and well-performing programme**, highly relevant for stakeholders and societal needs.



On track to deliver **value for money** and **to meet its knowledge-creating objectives**.



Strong **EU Added Value** through unique opportunities, competition & access to new knowledge.



HORIZON 2020 INTERIM EVALUATION KEY AREAS FOR IMPROVEMENT



Underfunding

Has lower success rates than FP7, esp. for high quality proposals, which constitutes a waste of resources for applicants and of good proposals for Europe



Support for market-creating innovation

Demonstrates potential for breakthrough, market-creating innovation, but it should be strengthened substantially.



Greater outreach to civil society

Could better communicate the results and impacts of R&I for society, and involve users & citizens more in the agenda-setting & implementation (co-creation).



PUBLIC PUBLIC PARTNERSHIPS - KEY STRENGTHS AND AREAS FOR IMPROVEMENT

Based on SWD on interim evaluation of Horizon 2020

For more details, see Annex 1, Part I of the SWD on the interim evaluation of Horizon 2020:

[https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd\(2017\)221-annex-1-interim_evaluation-h2020.pdf](https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd(2017)221-annex-1-interim_evaluation-h2020.pdf)



INTERIM EVALUATION OF PUBLIC-PUBLIC PARTNERSHIPS

- **ERA-NET Cofund** and **Joint Programming**: Expert groups, reports published on ERA-Learn platform
- **Article 185** : expert groups on 4 interim, 2 final and a meta-evaluation
 - Publication of Staff Working Document on Art. 185 evaluation planned for October 2017, together with SWD on the interim evaluation of Art 187



P2P IN HORIZON 2020 INTERIM EVALUATION

Preliminary conclusions - Key strengths

- Potential for high **European Added Value and National Added Value**: more efficient and effective use of public resources compared to uncoordinated national spending
- **Significant investments**: effective in supporting cross-border collaboration with 600-1000 transnational projects/year complementary to Horizon 2020 actions
- Emerging evidence to facilitate a **better policy cooperation at national level**, notably between R&I and sectorial policy making
- Strong cooperation with **international partners** at programme level



P2P IN HORIZON 2020 INTERIM EVALUATION

Preliminary conclusions – Areas for improvement

- **Limited long-term commitment** (budgetary and legal constraints)
- **Weak coherence and strategic positioning** in relation to national/EU initiatives
- Focus remains mostly on **competitive funding, limited range of deployment**
- **Lack of institutional, organisational and strategic management capacities** in many Member States



LAMY HIGH LEVEL GROUP Mandate



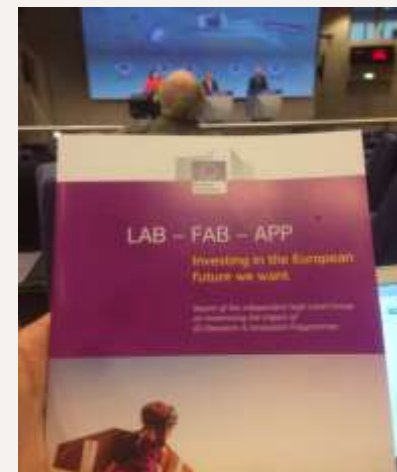
- Set up by Commission Decision in September 2016, in the context of the results of the Horizon 2020 interim evaluation
- The Group's mandate was:
 - **to formulate a vision for future EU research and innovation**
 - **to draw strategic recommendations on maximising the impact of EU R&I programmes in the future, i.e. how to fulfil that vision**
- Four meetings held between December 2016 and June 2017
- Wide range of European stakeholder organisations and EU institutional actors consulted for feedback on key questions



LAMY HIGH LEVEL GROUP

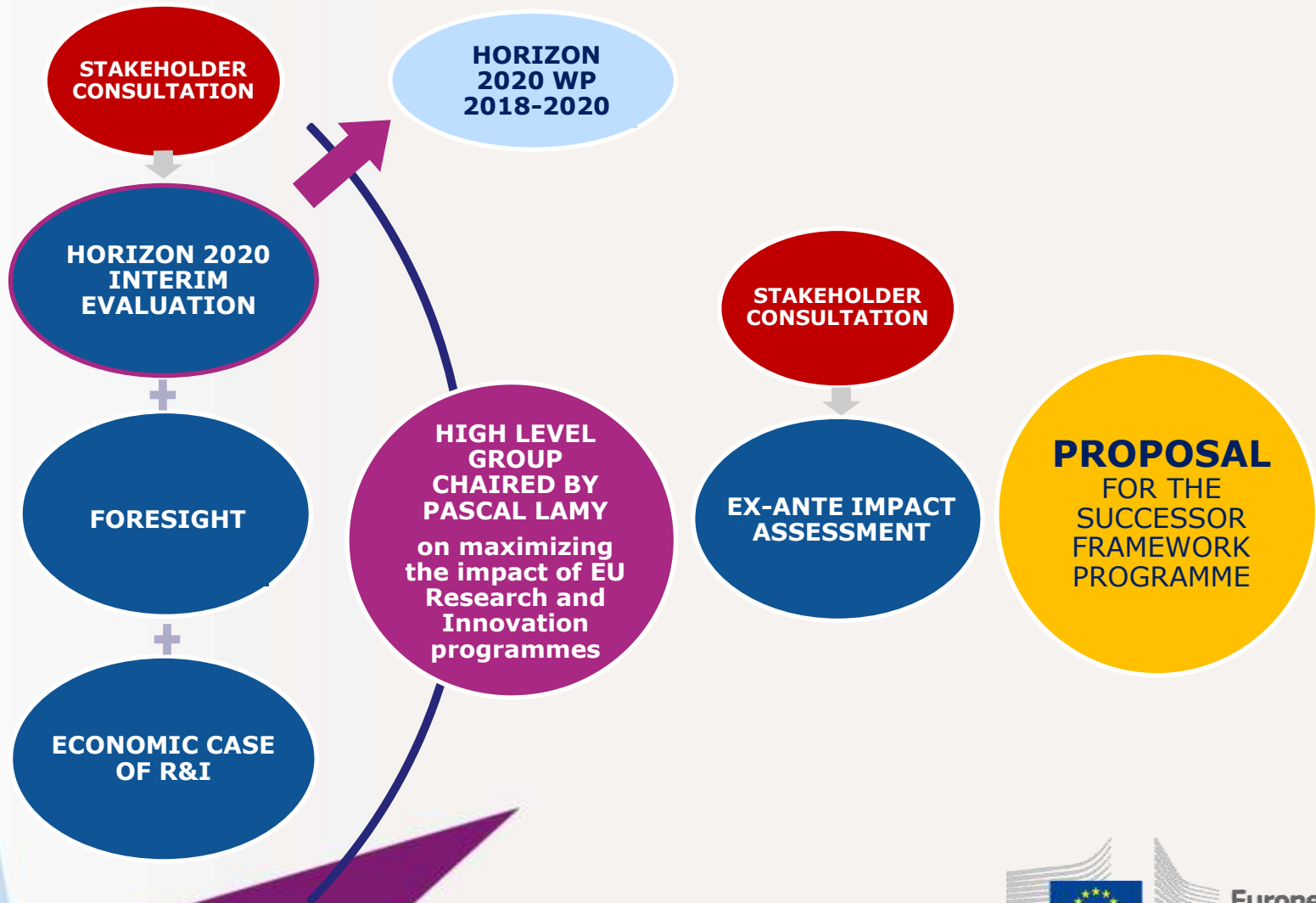
Recommendations related to partnerships

- '*LAB – FAB – APP: Investing in the European future we want*', published 3 July 2017, 11 recommendations
- **Recommendation 5: Mission-oriented and impact-focused approach to address global challenges:**
 - Partnerships should {...} mobilise joint investment in established missions {...}. The **additionality** of other sources of funding and capabilities **in order to realise a mission** {...} should be a key guiding criterion.
- **Recommendation 9: Better align national and EU investment:**
 - EU should limit its co-investment in partnerships with Member States to those which help achieve the EU's missions and **have a high degree of added value**. A **simplified and flexible co-funding mechanism** should be established to this end {...}.





LEARNING FROM THE PAST, CONSIDERING THE FUTURE & BENEFITING FROM CO-DESIGN





TOWARDS FP9



"I am convinced that the core values of Horizon 2020 and its successor have to be:"

EXCELLENCE

OPENNESS

IMPACT



THANK YOU FOR YOUR ATTENTION

Full interim evaluation results to be found on:

ec.europa.eu/research/evaluations/index_en.cfm?pg=h2020evaluation

- In-depth Staff Working Document (SWD)
- 50-pages synthesis SWD
- Executive summary in EN, FR, DE
- Annex 1: horizontal assessments
 - Stakeholder consultation results
 - Key monitoring data and methodologies used
 - Success stories from previous FPs and EU added value case studies
 - Progress on each of the 14 cross-cutting issues
 - In-depth analysis of further horizontal issues, e.g. P2Ps, PPPs, FTI, EIT, impact of simplification and new funding model, new management modes, participation networks
- Annex 2: 18 'thematic' assessments
 - Prepared by Commission services for each Horizon 2020 programme part
 - Following the same structure with the 5 evaluation criteria

