PLATFORM

Platform of bioeconomy ERA-NET Actions

(H2020 Grant number 652635)

REPORT

Workshop on Monitoring, Evaluation and Impact
June 8th - 9th, 2017, Copenhagen

Organised by:
WP1 - Practice: Efficient, effective, and inclusive organisation of ERA-NET activities

Use of Terminology

ERA-LEARN	Also known as ERA-LEARN 2020 (a continuation of ERA-LEARN) is a support action (CSA) funded by Horizon 2020. It started in January 2015 as a support platform for the Public-Public-Partnerships (P2P) community. It continues and expands services previously provided by ERA-LEARN, NETWATCH, and JPIs To Co Work. ERA-LEARN 2020 will involve the main stakeholders engaged in designing and deploying the broad structures and functions for the coordination and cooperation of national and/or regional research programmes; the P2P community will be supported in investigating what has been learned and achieved by existing networks, if expectations have been met, and which positive effects have been observed by participating organisations or countries.
Horizon2020	The EU Framework Programme for Research and Innovation
Member States	Countries within the EU community.
P2P	Public-to-public partnership.
PLATFORM	*A* forum for funders and programme managers in European Research Area Networks (ERA-NETs) in the fields that make up the bioeconomy: food, agriculture, aquaculture, fisheries, forestry, climate, biodiversity and biotechnologies. PLATFORM aims to improve exchange and cooperation and to strengthen their impact on the ERA and the European bioeconomy.
RTD	Research and Technical (or Technological) Development
SME	Small and Medium enterprises (Staff: < 250; Turnover: < €50 mio.).

Organising team of Masterclass on ERA-NET Cofund Management 7-8 June and Workshop Monitoring, Evaluation, and Impact Assessment 8-9 June, Copenhagen

Ivana Trkulja, AU-ICROFS	Task leader for T1.2 Master Classes on implementing Cofund calls; Lead author for report Master Class, 7-8 June 2017
Niels Gøtke, DAFSHE	Task leader for T1.4 Workshop on evaluation and monitoring; Lead author for report Workshop, 8-9 June 2017
Per Mogensen, DAFSHE	Contact person meeting logistics; Rapporteur contributing to Workshop report
Brenda Kuzniar-van der Zee, WUR	Contact persons for programme Workshop; Contact person website and registrations; Editor for the reports
Christine Bunthof, WUR	PLATFORM Coordinator; Contributor to programmes; Contact for pilot impact assessment; Contributor to reports

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The programme, participant list, report and all presentations can be downloaded in pdf format from the PLATFORM website www.era-platform.eu

Introduction

The question of monitoring and evaluation of the added value of ERA-NETs is gaining increasing attention from funding organisations. In response several bioeconomy ERA-NETs are discussing the most appropriate indicators and implementation procedures for monitoring and evaluating their performance. Monitoring and evaluation constitutes an issue common to all ERA-NETs. For the ERA-NETs Cofund monitoring and evaluation of their funded research projects is a prerequisite in H2020.

Besides the monitoring the ERA-NETs are performing the EC initiated through ERA-LEARN2020 an evaluation and impact assessment to measure the impact of the funded research projects. The pilot was set-up together with PLATFORM and the results are presented at this workshop. To assist the bioeconomy ERA-NETs on this issue PLATFORM organised a lunch-to-lunch workshop on monitoring, evaluation and impact assessment.

The workshop will focused on self-evaluation of ERA-NETs. The assessment of the impact of joint calls is a key aspect of evaluation. The audience target group consists of current or future ERA-NET monitoring and evaluation task leaders in bioeconomy ERA-NETs.

1. Welcome

The welcome introduction was made by **Niels Gøtke** from the Danish Ministry of Higher Education and Research. Following the introduction **Lisbeth Munksgaard**, Head of Aalborg University (AAU), Center for Food Research, welcomed the participants to the AAU campus in Copenhagen with a short introduction to the university and the kinds of education and research being done.

The initial introductions were continued with a tour de table which gave participants the opportunity to introduce themselves.

38 representatives from 13 different European countries participated in the workshop. Most participants were from public organisations that are either funders or managers and active in P2P networks.

Christine Bunthof concluded by introducing the agenda for the workshop (presentation).

2. How to build on research results?

The first speaker of the workshop was **Louise Pierrel Mikkelsen** from InvestorNet-Gate2Growth, Denmark, who gave insight in how results of P2P projects can be exploited, using her experience working with SMEs and the Horizon2020 (H2020) SME instrument (presentation).

As illustrated in figure 1 there are 2 main routes to exploit R&D results.

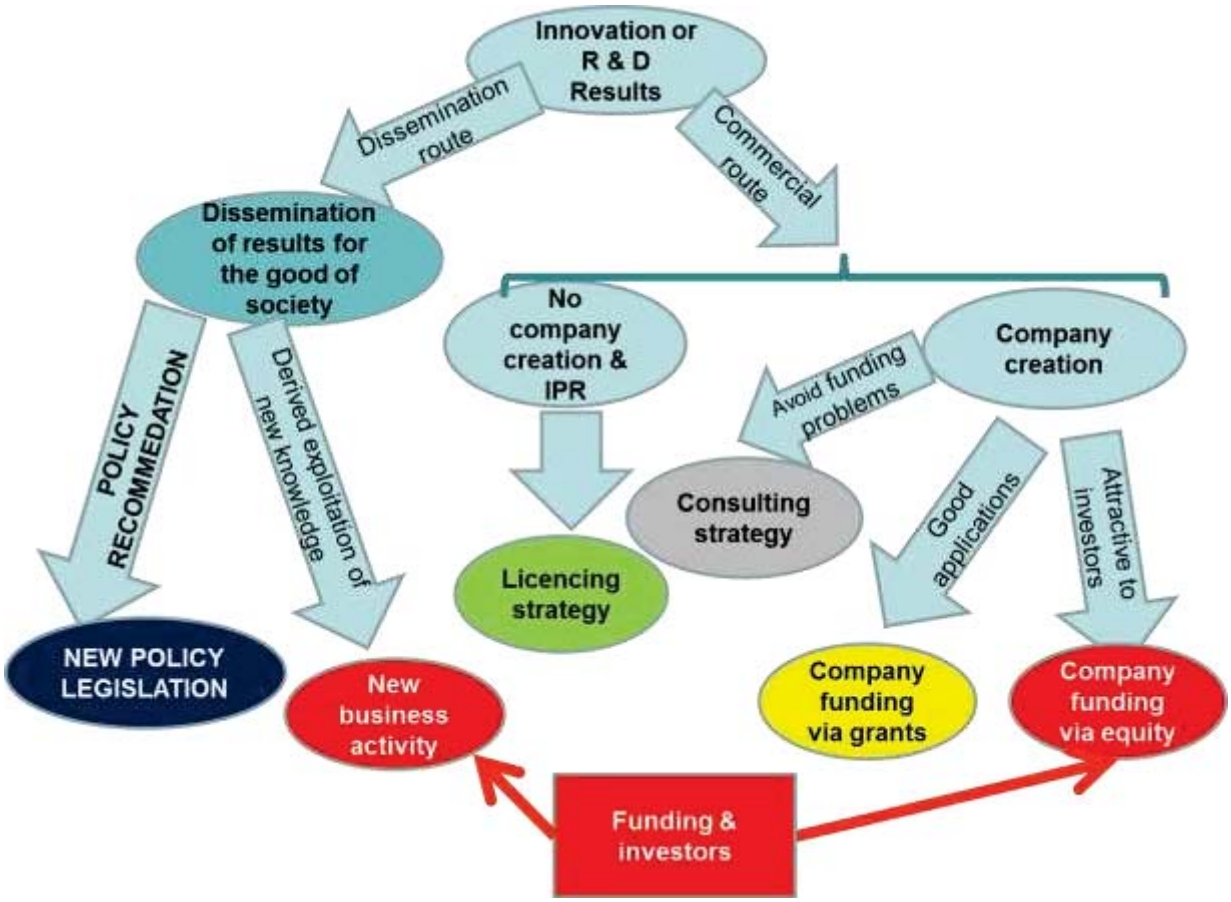

Fig. 1: Exploitation routes for R&D results.

The dissemination route is the most familiar to most P2Ps. This is the route most results of P2Ps travel, ideally leading to new policy legislation or new ideas that can be used to advance the knowledge pool in the field, and increased awareness/promotion of the field in the general public.

The commercial route is less explored by P2Ps. This route ideally leads to a product or service that can be commercialized.

The two exploitation routes are very much interlinked, and results flowing down one route can significantly affect the other route. It would, for example, not be unthinkable that a result travelling down the commercial route and ending up in a commercial product could benefit from the result travelling down the dissemination route to policy makers and end users. The benefit could be that new legislation is created that will aid the commercialization of the product or that user awareness will boost sales.

Since the dissemination route is well known to P2P partners, more awareness should be directed at the possibilities of the commercial route. An increasing number of P2Ps are considering the possibility of bringing in private companies as partners in funded project. This comes with a set of new challenges that needs to be addressed. Because how do you combine the researchers need for open access data with the need of companies to be able to protect their products?

This is a difficult question that cannot be decided unilaterally but will have to be decided for each P2P call. However, there are several things to be aware of when considering commercialization of the end result(s). Key elements to consider are: 1) Intellectual property rights (IPR), 2) Licensing and 3) Patents.

For a consortium that sees the potential to commercialize some of their results, the first thing on the agenda should be to draw up a business plan as early as possible. Figure 2 shows a traditional list of content of a business plan.

Fig. 2: Traditional list of content of a business plan.

Preferably the business plan is drafted in parallel with the written application for a call. Even though a business plan is not necessary for a project to be accepted, it might influence the work packages in such a way that an amendment to the project application would be needed if implemented at a later stage. This might not be acceptable for the funders. On top of the key elements mentioned above a business plan usually also includes the finances of the commercial venture. Although this is not required in the P2P funding evaluation, it is highly recommended to include this aspect as early as possible.

There are essentially 2 ways of commercializing the results of a project; 1) 'Do it yourself', or 2) Licensing. Either way involves a firm grip on IPR, meaning that a plan to handle as many as possible of IPR conflicts/questions should be prioritised.

IPR are usually protected by applying for patents. However, it is not always so straight forward to know if a result should be patent protected. First of all because it can be quite expensive to attain a patent, and also the expenses to such patents should be included. Secondly, it takes time to attain a patent. Is it worth the time and effort?

Other issues can be evaluated using the "Freedom to operate" analysis.

The "Freedom to operate" analysis is important, even if the business case/technology is not fit for IPR protection because a) In some countries (e.g. the US) other "inventions" than "technology" can be IPR protected, b) Even if you have "invented it yourself" someone else might have come to the same solutions and filed a patent, c) A patent provides protection for "Your Invention" only, but in order to turn the invention into a product you might need access to a lot of other technology/solutions – which might be patent protected.

When all the necessary rights to the product have been obtained it is time to look at the funding.

Categorically speaking, there are five ways of funding innovation projects:

- **The "Hard way":**
  - "Bootstrapping": Secure that revenues from consultancy or sales can cover the cost of the innovation project.
- **The "Expensive" way – but also often the intelligent way:**
  - Convince investors to invest in the company and provide funding for the innovation project, and "give away" part of the ownership in the company.
- **The "Strategic way":**
  - Convince strategic business or industrial partners to provide funding, either as equity or in the form of convertible loans or similar financial instruments.
- **The "Difficult" way":**
  - Borrow in the Bank. - Just try – you will find it is rather difficult. Banks love security – and hate risk. Remember, you will need to repay the loan!
- **The "Smart" way:**
  - Apply for public or private "Grants". You do not give away ownership. No need for repayment of the money, and evaluation criteria focus on opportunities – and if funded it might also attract investors!

No matter which of the funding opportunities is chosen, the only way to get funding is to have a good business case that provide a clear message to the funders: The business case is sound and thought through and the is a market for the product. ***The investment will most likely be returned.***

Figure 3 shows four of the most used investment indicators, and the resulting investment opportunity.

Fig. 3: Four of the most used investment indicators, and the resulting investment opportunity.

To relate the information to a specific P2P, Louise used ICT-AGRI ERA-NET as a case, and ended the presentation with a short introduction to the H2020 SME instrument. The H2020 SME instrument is an excellent opportunity for an ERA-NET project to commercialize their results.

You can read more about the SME instrument at the Commission website: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/sme-instrument.

3. PLATFORM University: Lecture on Impact Assessment

Effie Amanatidou from Manchester University, UK, and a member of ERA-LEARN, presented the ERA-LEARN 2020 Guide for impact assessment of P2Ps (presentation).

Using P2Ps as example, there are several steps to performing an Impact assessment:

Step 1: Defining the intervention logic of the P2P.
Step 2: Linking the challenges and objectives.
Step 3: What are the inputs and activities that will achieve the objectives.
Step 4: What are the outputs of the programme and project activities?
Step 5: What are intermediate and global impacts?
Step 6: Setting up a monitoring system of inputs, outputs and outcomes.
Step 7: Defining output, outcome and impact indicators.
Step 8: Data collection and analysis methods.
Step 9: From planning to actually conducting a P2P evaluation.

Before starting an Impact assessment, several different aspects must be considered to maximize the usefulness of the assessment. The clearer the intended purposes of an evaluation are outlined in advance, the more useful an evaluation can be. The following questions are recommended answered before going any further:

- Who is performing the evaluation (i.e. external evaluators, managing authorities, or funding agencies) and how will transparency be ensured?
- What are the objectives of the evaluation?
- At what times must different evaluation outputs be finalized (reports, meetings, etc.)?
- What will be the results/outputs of the evaluation?
- How will the evaluation outputs be used, published and communicated to decision-makers?

Also, the following statements should be taken into consideration when developing the framework of an impact assessment:

- The more stakeholders that are involved in the evaluation, the more useful evaluations are and vice versa;
- Dissemination of the results widens the usefulness of an evaluation - utilisation and dissemination plans should be part of the evaluation design;
- We need to understand how decisions and activities occur in a diffused decision-making model such as a P2P network;
- We need to recognise that networks evolve through stages of development and that their shape and structure are important influences on their development as well as delivery of impacts;
- We need to acknowledge that it takes time to organize networks effectively and show results - however, it is possible to see progress.

Figure 4 shows the cascade of concepts/steps, from challenges to impact, that needs to be considered in the design process.

Fig. 4: Concepts to consider in the design process.

Step 1: Defining the intervention logic of the P2P

Starting the design process, the first things we have to consider are:

- The clearer and more verifiable the objectives of a programme, the more useful its evaluation.
- We need to consider that networks have a "chain of impact" that includes
  - the network's impact on its members (network level)
  - the members' impacts on their local environments, (national level)
  - the members' combined impact on their broader environment (trans-national)
- Evaluations designed to examine impact must understand the relationship between these three levels and be clear about where their focus lies.

Step 2: Linking the challenges and objectives

Important questions to ask at this stage are:

- Why was the P2P established? Which challenge, problem, or situation does it aim to address?
- What are the main assumptions about the way the specific challenge, problem, or situation should be addressed?
- What are the short-term, operational objectives, the medium-term, intermediate objectives and longer-term, global objectives of the specific P2P?

Figure 5 illustrates the different context levels.

An example (Fig. 6), using JPI Urban Europe as case, illustrates how the context model of figure 5 can be put into practice:

Fig. 5: Objectives at increasing context levels.

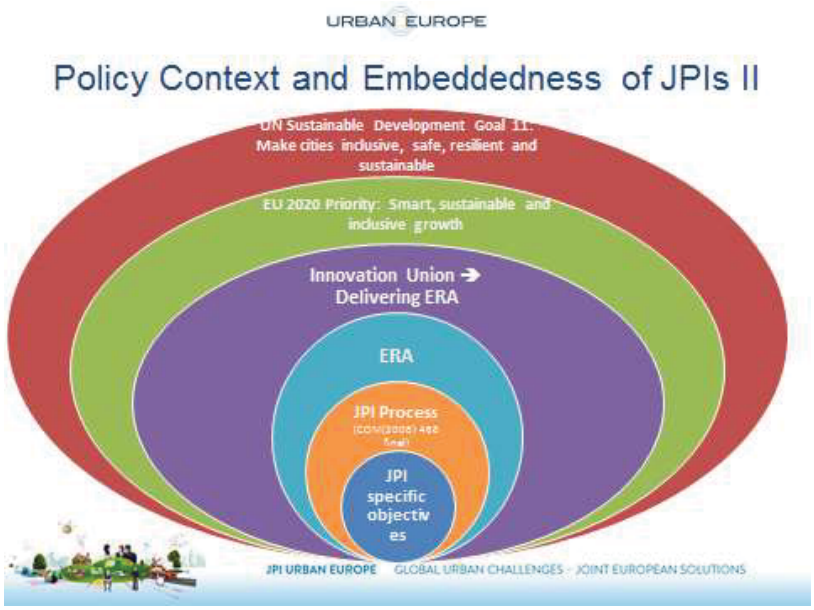

Fig. 6: The objectives/priorities of JPI Urban Europe placed into a context level illustration.

Objectives need to be SMART:

Specific: Objectives should be precise and concrete enough to avoid being open to varying interpretation.
Measurable: Objectives should refer to a desired future state (as compared to the baseline situation) so that it is possible at some later date to see whether the objective has been achieved or not.
Accepted: If objectives and target levels are intended to influence behaviour, they must be accepted, understood and interpreted similarly by all of those who are expected to take responsibility for achieving them.
Realistic: Objectives and target levels should be ambitious but they should also be potentially achievable so that those responsible see them as meaningful.
Time-dependent: Objectives and target levels remain vague if they are not related to a fixed date or time period.

Step 3: What are the inputs and activities that will achieve the objectives

Inputs are the means used to support activities and action and to produce outputs. Inputs include budgetary costs (financial, administrative and human resources), but also costs for the beneficiaries or target population (co-financing, compliance costs stemming from administrative burden) and costs for third parties (Member States, intermediary organisations, etc.). Inputs need to be documented and monitored as one of the main evaluation issues that is usually examined is efficiency, i.e. the extent to which the desired effects are achieved at a reasonable cost.

At the same time, the management and governance structures, and processes governing the operation of the P2P, i.e. how the P2P is set to operate may also be regarded as inputs. These elements are of major importance when assessing another evaluation issue, that of network health and connectivity.

Key questions to ask at this stage are:

- Which activities are expected to help achieve the objectives set (research collaboration, dissemination of results, training, mobility, sharing of infrastructure, network expansion, strategy building, monitoring and evaluation of the P2P, etc.)?
- What are the key inputs that these activities require (in terms of money, time, human resources, and capacities)?
- What are the governance and management structures and processes that will govern the implementation of these activities (decision making processes, management processes, internal/external reporting processes, etc.)?

Step 4: What are the outputs of the programme and project activities?

The activities supported by the inputs invested lead to certain outputs; these are usually tangible outputs such as projects supported under joint calls, joint strategy documents stemming from strategy building activities, training modules of students/researchers trained, databases with mapped national/regional programmes, new partners from different Member States brought together, etc.

The activities carried out cause interactions among individuals, and organisations, blending of minds, creation of links, etc. This does not stop with the production of the agreed outputs. The growing collaboration among the P2P partners as well as the engagement of beneficiaries leads to medium term impacts (or otherwise outcomes) on the P2P target group(s). These impacts may be directly associated with the outputs such as improved skills and capacity building from training activities, research results from the projects supported, new collaborations among P2P beneficiaries, etc. They can however include impacts that are not directly associated with the outputs produced but have more to do with the interactions and increasing collaboration among P2P partners and beneficiaries, i.e. process impacts, for instance increased trust and improved collaboration among partners, increased awareness of a policy area at national or cross-national level, etc.

The emergence of short to medium-term impacts may be strengthened even further by a favourable wider context. They can translate, either intentionally or even unintentionally, to long-term impacts on target groups as well as society and economy at large. These are called global impacts. Given that it takes time for such type of impacts to occur, attribution of these to the specific policy intervention is rather difficult.

Step 5: What are intermediate and global impacts?

Comparing the three types of impacts, outputs are items directly produced by certain activities (e.g. workshop reports, SRAs, databases of programmes, etc.) and they are produced within the short-term.

Intermediate impacts are rather medium-term and may refer to both direct and indirect beneficiaries while global impacts are longer-term and refer to the wider environment surrounding the intervention.

Figure 7 and 8 shows the impact timescale for different activities and impact categories.

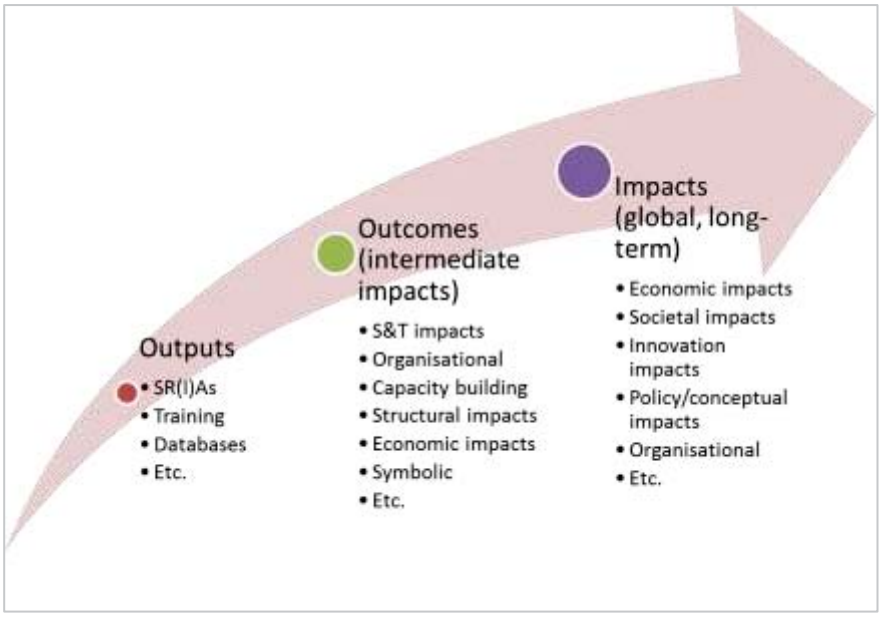

Fig. 7: Overview of short-, medium- and long-term impacts.

	Short-term	Intermediate	Long-term
Societal	Researchers' posts created	Change of consumer practices	Solutions for specific challenge
Economic	More national resources in as area	A national programme	Increased R&D spending in area
R&I	New knowledge Patents, prototypes	Commercialisation of invention	Innovation upscaling
Policy	More attention to the field addressed	A national strategy in the field	Influence of EU/world strategies
Structural	Inter-ministerial bodies for coord	More coordinated national p-making	Creation of inter' al structure
Behavioural	Change of user behaviour	More org. collaborations	International coop. strategies
Symbolic	Improved reputation	Increased track record in projects	Increased international collab

Fig. 8: Examples of time-scale impacts for different impact categories.

Because step 4 and 5 are closely linked it would make sense to combine them in the development phase.

Key questions at this stage would be:

- What are the key outputs of the activity examined? How are the outputs likely to influence direct beneficiaries in the short-term time? How are they to affect indirect beneficiaries? How are they to affect a broader set of stakeholders in the medium to long-term?
- How are the various outcomes of the P2P likely to affect the wider environment in which the P2P is situated, particularly in the long-term? (consider all levels: national, cross-national and European/international).
- What is the correspondence between outputs, intermediate and global impacts with the Objectives' Hierarchy?

Step 6: Setting up a monitoring system of inputs, outputs and outcomes

Monitoring is a continuous and systematic process of data collection about an intervention. So it is important to ensure that the monitoring system works from the outset and that data will be collected reliably and smoothly from the appropriate sources.

Many monitoring indicators can only be created and developed when the activity is implemented, because you need the cooperation and agreement of stakeholders in developing them and in collecting the relevant information.

Consider carefully and provide for the cost of setting up and maintaining a monitoring system over the lifetime of an intervention. This cost may not be negligible; either to the administrators who need to collect the required information and data or to those expected to deliver it.

Key questions at this stage:

- How much will the setting up of the monitoring system cost and what kind of resources will be needed to run it? Are these resources (human, financial, time) in place and can they be ensured?
- What data needs to be collected and how is it to be used (for inputs, outputs as well as outcomes)?
- When should the relevant data be collected (during the monitoring phase, ex-post, how often, etc.)?
- By whom should the required data be collected (e.g. P2P management team, project team, a centralised P2P systems)? Is the required capacity both in time and skills resources available?
- Can the process be aligned with the monitoring/reviewing process of the P2P partners? Can the process be aligned with the reporting schedule for the evaluation/impact assessment?
- How will required data be gathered and stored? Where will the data be stored? Can this be aligned with other monitoring systems?
- What are the necessary data protection protocols to ensure the system will meet security and data sharing requirements?
- How and by whom will the data be verified to ensure it is accurate and consistent with the relevant requirements? Are the required skills and resources available for this task?
- What are suitable methods and instruments for collecting, storing and processing follow-up data?

Step 7: Defining output, outcome and impact indicators

Before proposing new data requirements, you should carefully assess to what extent the existing data reflect the objectives set and whether the missing key data can be collected via existing monitoring structures.

It is essential to understand that indicators are subject to a number of limitations. They cannot measure all aspects of the reality while indicators that are defined ex-ante can only capture intended impacts. Societal impacts appear especially difficult to measure but don't fall into the trap that 'Impact is only what we can measure'!

It may be the case that the most accurate indicators are extremely resource intensive to collect; thus a balance will have to be struck between indicator suitability and ease of collection.

Qualitative indicators can be highly illustrative of the outputs and impacts of activities but are more difficult to aggregate and to subject to quantitative analyses.

The appropriateness of indicators is case and context dependent.

All indicators should be 'RACER', i.e.:

Relevant to the objectives and should measure the right thing;
Accepted (e.g. by staff, stakeholders who hold responsibility)
Credible for non-experts, unambiguous and easy to interpret.
Easy to monitor (e.g. data collection should be possible at low cost).
Robust against manipulation (e.g. If the target is to reduce administrative burdens to businesses, the burdens might not be reduced, but just shifted from businesses to public administration).

Key questions at this stage:

- Which are the key outputs, outcomes and impacts of an activity?
- For each one of these, how can they best be measured / captured?
- Is there a quantitative or qualitative way (or both) that they can be measured / captured?
- What is the added value of applying a quantifiable or a qualitative measurement or a combined approach in measurement?
- Is the cost of gathering data for the indicators set affordable? Are the necessary skills available?
- Are any relevant indicators already being estimated at Member State or EC level? Can access and compatibility be ensured?

Step 8: Data collection and analysis methods

This is the final stage in the planning phase with the implementation phase. And here everything should begin to come together.

It is where we finally get to the question: "What exactly will we examine?" This refers to the evaluation issues that are essentially addressing the relations across the different elements of the framework and usually come from specific questions that we have in mind.

For instance the question 'to what extent is an intervention relevant with respect to the needs, problems and issues identified in target groups?' refers to the issue of Relevance. The question 'to what extent do the effects induced by an intervention correspond with its objectives as they are outlined in the intervention strategy?' refers to the issue of Effectiveness. The question 'how economically have the resources used been converted into effects?' refers to the issue of Efficiency. The question 'how do the effects of an intervention compare with the wider needs of the target populations?' refers to the issue of Utility. There are also other evaluation issues that can apply to P2Ps. 'Network health': a P2P's ability to engage its members, sustain their engagement, and adapt as needed. Has the P2P secured the necessary resources (capacities, money, and infrastructure) to become self-sustained? What are the network's governance rules and are they effective? Do the decision-making processes encourage members to contribute and collaborate? How are the network's internal systems and structures adapting over time? Do all members share a common purpose for the network? Are all members working together to achieve shared goals, including goals that emerge over time? Are members achieving more together than they could alone? Has a sense of trust developed amongst the network participants? 'Network connectivity': the extent to which the members' ties to each other are resulting in efficient and effective "pathways" for shared learning and action. Has the P2P assembled members with the capacities needed to meet network goals (experience, skills, connections, resources)? Who is connected to whom? Who is not connected but should be? Is membership adjusted to meet changing network needs? What are the number, quality, and configuration of network ties? How dependent is the network on a small number of individuals? Is the network structure adjusted to meet changing network needs and priorities? 'Added value': What is the additional value resulting from the P2P, compared to what could be achieved by Member States alone at national and/or regional levels? To what extent do the problems/challenges addressed by the intervention require action at EU level? What would be the most likely consequences of stopping or withdrawing the existing policy intervention?

Key questions at this stage :

- What are the evaluation issues and associated evaluation questions that we need to examine?
- What are the key activities and associated outputs, outcomes and impacts that can contribute to answering the respective evaluation issues and questions?
- Which of the relevant output, outcome and impact indicators we shall examine?
- How can the data for the selected indicators best be captured (through monitoring data already available, through new data; quantitatively, qualitatively, both)?
- Based on the above what are the suitable methods to apply? (Consider also time, and resources limitations).

Step 9: From planning to actually conducting a P2P evaluation

In relation to conducting the evaluation itself it is important to reflect on the following:

- When will the evaluation start and end?
- Will the evaluation be externally commissioned or conducted in-house?
- Who will be responsible for specification development, tendering, project management and quality assurance? What will the quality assurance processes be?
- When does any new data collection need to take place?
- Who will be the project manager, provide analytical support, be on the steering group?
- What budget is to be used for the evaluation and is this compatible with the evaluation requirements?

At this stage it is relevant to decide about the timing and duration of the evaluation including whether it should be commissioned externally or conducted (either partly or wholly) in-house and the implications of this. Having a clear idea about the internal available resources and capacities for the evaluation will influence selection of the most appropriate evaluation approach.

Some P2P networks have commissioned the evaluation task to external evaluators while others are considering doing it in-house. It may be useful to undertake a scoping or feasibility study to support this decision making process. This can foster greater understanding of what can and cannot be evaluated at the specific point in time, and therefore what level of investment as well as of capacities are required internally to determine whether the task should be assigned with an external evaluator or not. Commissioning the evaluation exercise partly or wholly to external evaluators might also serve the purpose of safeguarding objectivity.

Evaluations, whether conducted internally or externally, however, will often require significant input to ensure they are designed and delivered successfully. For larger evaluations involving dedicated data collection, this will generally require an appropriate internal project manager with the relevant skills to oversee the evaluation, a supporting team, and a steering group to govern the evaluation. The level of input required of different members of the project team will be greatest at key points (in particular, the design, commissioning and reporting stage), but there will be an ongoing resource requirement even if the project is externally commissioned and this should not be underestimated.

Further reading
ERA-LEARN have developed a short “Guide on P2P evaluation / impact assessment”, as well as several other documents about P2Ps and evaluation / impact assessment. The documents are available at the ERA-LEARN website: https://www.era-learn.eu/monitoring-and-assessment/Monitoring-and-impact-assessment-of-networks.

4. Interactive group part: World Café

The overall aim of the interactive group discussion was to help participants understand and clarify the different types of impacts that may appear at the project or network level of a P2P. To facilitate this understanding, participants were separated into 3 role playing groups where each workshop participant was playing the role of a partner in a fictive ERA-NET.

The discussions involved the experiences of the participants in trying to identify, measure and assess network or project impacts and the challenges they will face in doing so. This way of discussing P2P impact

had the advantage over a normal lecture in that more than one opinion/experience was conveyed to all participants. More experienced participants could add to the lecture(s) already given, and the less experienced could participate with observations and clarifying questions that would nuance the discussions and illuminate key issues.

At the end of the session the 3 groups were asked to present their main findings within their respective topic (see below).

As explained in the above P2Ps can produce various types of impacts at different levels. They may affect the partners participating in the network by leading to changes at the organisational and also national levels, through cultural, structural or conceptual impacts reflecting changes to mind-sets or behaviours. Such impacts refer to the network level. These impacts are directly linked with the overall, common aim of P2Ps, i.e. to achieve coordination and alignment of national/regional programmes towards achieving jointly set objective. Any framework for P2P evaluation should enable the examination of such types of impacts as they are equally important to those stemming from the P2P-supported projects.

P2Ps fund joint research activities and projects which in turn affect the participating organisations as well as the wider socio-economic and policy environment in which they are elaborated. Such impacts may range from scientific/technological impacts on the specific research area addressed, to economic, policy or societal impacts. In the general evaluation context these impacts are usually examined at the project level.

At the same time, impacts can be medium-term (in which case they are usually called outcomes) or long-term impacts, while those that appear in the short-term usually refer to the outputs of the examined activities, or projects. Impacts can also be of different types depending on the various users' perspectives. For instance businesses might be more interested in economic impacts while academia may put more emphasis in measuring scientific impacts without excluding the importance of policy impacts.

World café

The participants were split in 3 groups of about 10-12 persons. Each group discussed one of the topics defined below for 25 minutes and then moved to the next topic. After each group had discussed all of the topics there was a wrap-up in which the results of the discussions of the 3 topics were presented (30 minutes, 10 minutes per topic).

For each of the topics the following questions were discussed:

a) What kind of impacts can you identify in your networks (e.g. 3 impacts at research project level and 3 at network level?)

b) What are the factors affecting the delivery of these impacts?

c) How can these be measured?

The results of the discussions were presented by the moderators.

Topic 1 (short-term) impacts (Moderators: Bettina Heimann (reporter) and Stefanie Margraf):

Impact factors for networks (ERA-NETs) included the following:

Including additional activities, generally showing visibility, dissemination, keeping close contact with recipients/stakeholders, and supporting the funded projects.

How does the funded projects level interact with the ERA-NET level? This is not always so obvious. The interaction should be stressed more. In the COFUND instrument there is not much time for this interaction. Core Organic was mentioned as a good example because they are very good in their communication strategy to support the projects to get the results out in the broader world whatever the result and end use might be.

Impact factors for projects: Publication should not always be counted because in projects with industry linkage there can be problems regarding Intellectual Property Rights (IPR).

Topic 2 (Medium term impacts) (Moderators: Patries Boekholt (reporter) and Angus Hunter):

A lot of different impacts were found to be relevant for the medium term.

Impacts were separated into 3 categories; 1) Impact on the organisations taking part (agencies, funders, etc.). Internal impact: Better coordination between agencies/funders within countries. External impact: Learning to work together with agencies/funders in other countries – cross-border collaboration. Adapting processes to each other. Building trust. All of these lead to bigger appetite for participation in more ERA-NETs and other P2Ps in general. 2) Impacts on the research community: Research excellence. Access to more knowledge, data and research infrastructure. Learning to work more across borders and with different cultures. P2Ps are a good first step for "newcomers" to get into the international community and Horizon2020. 3) The applications: Availability of technology, commercialization of results, improving the IPR rules so that the industry is getting more and more in.

Factors affecting impact: Availability of funding. Legislative frameworks. Good, committed people/champions who will push for things to happen and get them moving forward. Communication/dissemination with stakeholders and getting them committed.

Topic 3 (Long term impacts) (Moderators: Effie Amanatidou and Louise Pierrel Mikkelsen (reporter):

Is it possible to measure impact without using quantitative measures? Qualitative measurements might be better suited for longer term impacts. You can create a narrative where you include both the qualitative and quantitative measures. Long term impacts are the hardest to prove. And because ERA-NETs effects might be marginal, impacts are even harder to measure. Dig up good stories. There are cultural differences to consider – also non-EU countries participate, such as Canada, New Zealand and Morocco.

As a last comment it was mentioned that it is important to remember that impact measurement (whether short, medium and long term) needs to keep in mind the focus of the project. If, for instance, the focus of the ERA-NET is primarily to get private companies to participate and generate monetary value for society, you can include a measure of added profit during a determined period. But if the goal of the ERA-NET is to change legislative policy it would not make any sense to include the monetary measure. It might then be more appropriate to use qualitative measurements to describe changes in national priorities.

5. Pilot for centralised project-level impact assessment – outcomes and experiences

Following up on the World Café, **Angus Hunter** from Optimat, UK, and also a member of ERA-LEARN, presented the pilot for centralized project-level impact assessment performed by ERA-LEARN (presentation). Representatives from 3 ERA-NETs (Susfood, ERA-IB-2 and Core Organic II) who had participated in the pilot impact assessment contributed with their views on the process.

By the middle of 2015, around 4500 transnational projects had been funded by the P2P networks representing a combined investment of close to 5 billion Euro. The 2016 ERA-LEARN Annual Report indicates that the volume has now increased to over 5000 projects. But what is the impact of this huge investment? The simple answer is that no one knows, but the question is becoming increasingly important to the future sustainability of both national and EU funding for P2P actions.

This is where ERA-LEARN comes in, because one of the objectives of ERA-LEARN is to "Implement a systematic process for monitoring & impact assessment of P2P networks, including their impacts at the policy, programme and co-funded RTD project-level".

The data collection pilot was performed in partnership with PLATFORM, and the focus was on networks with projects that finished during (or before) 2016. The survey was launched in April/May, and involved 3 networks; Core Organic II, Susfood and ERA-IB-2. The networks were asked to invite participants to submit data to the ERA-LEARN web portal. Each network received an e-mail, to relay to participants in funded projects, with a link to the portal, asking to answer 13 common framework questions.

76 responses were received, with an overall response rate of 27%.

Results from this pilot study revealed several interesting findings:

1. The motivation for researchers to join a P2P funded project is mostly driven by the possibility to build scientific relationships compared to commercial and political relationships.
2. Generally the quality and ambition of transnational projects were viewed as higher when compared to national projects. However, this comes at the cost of a higher administrative burden.
3. Most participants in transnational project had had previous experience in international collaborations. Mostly within the EU framework programmes (e.g. FP7 and Horizon2020) or by co-funded instruments (e.g. ERA-NETs). Few had experience from schemes that extend beyond Europe (e.g. Belmont forum or Intelligent Manufacturing Systems).
4. Participants found to a large degree co-funded projects (e.g. ERA-NETs) had a higher application success rate, were more flexible and less bureaucratic in administration. Also, they were more restricted when choosing partners, and there was a slight leaning towards co-funded projects being more solution-oriented. But co-funded projects did not necessarily produce higher quality results than H2020 projects.
5. The most exploitable outcomes were seen to be Enhanced research network to compete for future European project funding and improving the scientific evidence base. On the other hand, new organizational or technical processes were not found to be significant factors.
6. Only about 5% of participants had applied for one or more patents on the basis of the intellectual assets from the project.
7. The most expected impacts on the participant's organisations were: Improved competences and skills, improved access to networks and consortia and getting a higher profile in the European/international research community. Commercial aspects were generally not perceived to be of significant importance.
8. When asked to assess the impacts having been through at least some of the process, participants were overall very pleased with the science/innovation related impacts (e.g. improved competence, skills, access to networks) and the behavioural impacts (e.g. increased interest in collaboration). The economic aspects were seen as having less immediate impact.
9. Several beneficial impacts for society were foreseen. Specifically that users will be able to improve their products and services and that the outputs will make a contribution to advances in complementary scientific or technological areas. The impact on job creation was not expected to be significant.
10. Several factors were seen as having an effect on the course of the project. Scoring particularly high in this field was: Having good consortium leadership and management, a good quality interaction between consortium partners, and that the consortium partners possessed the necessary knowledge/expertise.

11. This last question was an open text field entry, so many different answers were received. However, the following benefits stood out, being mentioned in several answers: Enlarging network, access to novel expertise/ideas/data and increased funding opportunities.

    After the presentation by Angus Hunter, representatives of the 3 pilot networks gave a quick sum up of their views of the experience.

6. PLATFORM University: Lecture on Monitoring and Evaluation in Cross-Border Cooperations

Patries Boekholt from Technopolis Group, Netherlands, gave an introduction to Policy and Evaluation Challenges in Public to Public Cross-border Partnerships (presentation).

First of all we need to know what P2Ps aim to add to the European research landscape. P2Ps aim at changing the governance pattern of European research policy by c*reating a bigger leverage with EU funding and by a closer involvement of national research funders.*

This aim is envisioned brought to life by aligning research funding strategies across borders and create a bigger critical mass in research programmes, thereby avoiding fragmentation and duplication. There are of course more elements hidden within this alignment vision. Figure 9 shows 'The change theory', i.e. how different elements may lead to- and interact with other elements to create different types of impact/change.

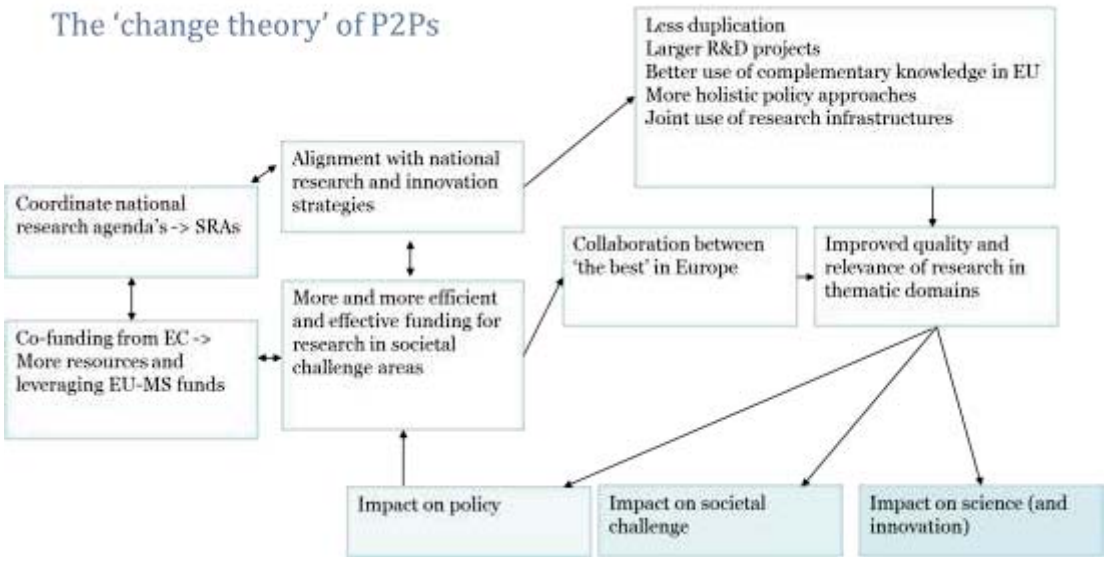

Fig. 9: The 'Change theory'.

But with P2Ps there comes new complexity to impact assessment. Not only do we expect the 'traditional' science, technology and innovation impacts, the P2Ps address a response to societal challenges and adds

thereby a long-term dimension of evaluation complexity. And can we be sure that the additional transaction costs of P2Ps are outweighed by the benefits of the trans-national partnership model?

There are basic bottlenecks for monitoring and evaluation of P2Ps. To name a few:

- Research Programming usually have broad focus and fuzzy objectives.
- Data on P2P participation in each Member State is not collected centrally
- Data on how P2Ps have changed national research programming is also a black box
- Could the results of the P2Ps have been achieved by a series of national programmes? How do you measure this?

What is the State-of-Play in P2P evaluation?

Individual P2Ps have started to be evaluated – but only in small numbers, and mostly focused on outputs.

At instrument level an analysis of ERA-NET Cofund under H2020 (2016) found that the clearest result is better cooperation between national agencies. And an evaluation of Joint Programming to Address Grand Societal Challenges (2016) found that there are concerns about the leverage of JPIs.

ERA-LEARN 2020 is currently developing manuals and conceptual frameworks for evaluating P2Ps.

A Mutual Learning Exercise (MLE) about P2P Policy Support Facility, involving 11 countries, has been conducted and produced the following findings:

- *Governance Structures have strong influence on 'alignment'.*
- *A lack of processes to prioritise which P2P to join.*
- *Inter-Ministerial, Ministry-Agency and Agency-Agency coordination is a big challenge.*
- *Lack of human resources to be actively involved in the governance bodies of relevant P2Ps.*
- *In all MLE countries: monitoring and evaluation is underdeveloped.*

So what are the recommendations for P2Ps in the future?

- The complex and time consuming governance of the P2Ps needs rethinking.
- More attention should be directed to the added value of joining a P2P and developing national decision frameworks for prioritisation.
- More joined up governance within Member States allowing a more coherent framework of objectives for P2P participation and programming.
    - *E.g. collaboration between Ministries of Research, Environment, Maritime Affairs.*
- We need better mapping and data collection at project and participants level as a necessary first step.
- There is still a lot of work to be done to make better estimations of P2P transaction costs, i.e. the human resources bottleneck.

7. Monitoring and Evaluation of projects

Bettina Heimann from Aalborg University, Denmark, gave an insight into her approach and thinking process concerning the monitoring and evaluation of the FACCE SURPLUS and ERA-GAS research projects (presentation). Since this is work in progress no final results could be presented.

The monitoring and evaluation is based on the results of two questionnaires, mid-term and end-term, that each project has to fill in. Since the projects in ERA-NET calls cover usually a relatively broad spectrum it is vital that the persons dealing with monitoring and evaluation are familiar with the scope of the call and the projects selected. Thus it will be possible to determine the questions that, besides project progress, also allow giving an idea on possible impact of the respective project results beyond the purely scientific. Information gathered through a questionnaire to be filled during and shortly after the end of a research project will always have limits but some insight on diffusion of results and contact to potential beneficiaries of the respective research can be observed. It will help to make visible successful initiatives and barriers and challenges in outreach activities encountered.

Bettina Heimann illustrated her considerations by going through the mid-term questionnaire she had elaborated for the projects of the FACCE-SURPLUS ERA-net.

The mid-term questionnaire partly includes questions delivering the statistical data required by the Commission and questions concerning the progress of the respective projects. However also questions about potential beneficiaries and how projects intend to get in contact with them, diffusion initiatives, TRL status of projects etc. are included in the questionnaire. At the end of the projects the end-term questionnaire can then follow up on these questions and, not least, the responses of the respective projects.

In conclusion, Bettina Heimann stressed that questionnaires always need to be adapted to the projects of any given call and can only to a certain extend be standardised. It is vital that research administers also look at their work from the research project participants' perspective and try to make things as smooth as possible for all parts involved in the process.

8. Monitoring and evaluation of networks and their activities besides calls

Stefanie Margraf from Project Management JUELICH, Germany, presented the strategy and approaches for monitoring and evaluation; what to measure, how to start the process and whom to involve, using FACCE-JPI as a case.

The Framework for monitoring and evaluation of FACCE-JPI and its joint actions was published in September 2013.

There are 3 targets of FACCE-JPI:

- Target 1. to improve the alignment of national and European research programmes,
- Target 2. to increase high quality transnational research activities within food security, agriculture and climate change

- Target 3. to improve the societal impact on the challenge of food security, agriculture and climate change.

Target 1 is an ongoing process where the outcome feeds into the two other targets. Target 2 provides results of the high quality transnational research activities and the dissemination of these results. Target 2 feeds into target 3 by solving specific societal challenges and fulfilling the Strategic Research Agenda, thereby providing impact.

The methodology to achieve target 1 has been to send a survey to FACCE-JPI Governing Board members and to use data held by the FACCE-JPI secretariat. The FACCE-JPI Governing Board was asked to answer questions about their organization; How they view Coordination among FACCE-JPI members, Alignment of research strategies, Alignment of research funding, FACCE-JPI actions, Future expectations and if they had any Additional comments. These questions provides an insight into how the different organisations/countries views and handles Organisation and decision making, Strategic alignment, Joint actions, Future expectations, etc.

The secretariat data included financial data/participation, meeting attendance, etc., which gives an indication of Commitment.

A few lesson learned:

1. Data collection and analysis take longer than anticipated.
2. Be persistent.
3. Free-text responses: examples or categorizing can help.
4. Interviews can be useful in some circumstances.

Topic 3 is much harder to box in. First of all, there usually is a time lag before you see the effects of the results from topic 2. Impact is expected to happen much later (10-15 years after the launch of FACCE). Also, exactly which societal impacts are P2P networks able to improve – and how?

9. Interactive session / Conclusion

The workshop was concluded by an interactive session where participants summed up the results of the workshop by defining indicators of good performance, how to harmonize mid-term & end-term reporting formats and how to use seminars and evaluators in research project monitoring. The aim of this interactive session was to define indicators of good performance and to harmonize the formats currently used by P2P networks for the monitoring and evaluation of Joint Transnational Calls and the funded research projects. Monitoring in practice is not an easy task, in this session we focussed on to hear about and how to tackle difficulties. This session focussed on helping the bioeconomy related P2P networks to shape the reporting forms for the project monitoring and evaluation in coordination with each other.

The participants were split in 3 groups of about 10-12 persons:

1. Group 1 indicators of good performance (Effie Amanatidou and Stefanie Margraf)

- There should be at least one indicator for each outcome.
- Good indicators should be valid, reliable, precise, measurable and timely
- Use process indicators to monitor the number and types of activities carried out
- Use results indicators to evaluate whether or not the activity achieved the intended objectives or results.
- Monitoring and evaluation frameworks and plans should incorporate both process and results indicators.

2. Group 2 discussed and formulate questions for the mid-term and end-term reporting form (Bettina Heimann and Patries Boekholt)

    - Linking project result to ERA-NET objectives → tailor made
    - You have to know your projects scope → you have to adapt your questions accordingly
    - Analyse why it occurs that projects do not reach objectives, was the call not clear? Do this already in mid-term
    - Reduce burden on researchers, keep it smart and simple
    - In future more deliverables in valorisation activities
    - Look at connections with other P2Ps/PPPs and Stakeholders (e.g. ERA-NET Biodiversa)
    - Organise workshop/seminars to present results various reports, publicise reports, invite stakeholders
    - Gender balance not yet included

3. Group 3 discussed the use of seminars and evaluators in progress monitoring (Petra Schulte and Ivana Trkulja)

    - Presentation of research projects: kick-off, mid-term, end/final
    - Research seminars
        - monitoring process vs
        - dissemination activities
    - Involvement of external experts and internal committee members in seminars
    - Frequency and timing? When?
    - Content of monitoring: monitoring implementation question, not research networking among researchers → set a scene for monitoring
    - Status/research seminar
        - Research overlap – identify common areas and join work
        - Contact founders as valuable elements
        - Events – dissemination and correlated to external event
        - Monitoring – content assessed and need for funders to be present

The Workshop was concluded by a short evaluation by the organisers, special thanks were to the speakers, who not only presented but also moderated the group work.

Annex I: Workshop Programme

Thursday 8 June 2017

12:00 – 13:00 **Registration and welcome lunch**
Together with the participants of the Master Class on ERA-NET Cofund call management

13.00 **Welcome** Niels Gøtke, Expert Group "ERA-NET Cofund evaluation", Ministry of Higher Education and Research, Denmark and Lisbeth Munksgaard, Head of AAU Center for Food Research, Denmark
Tour de table
Introduction to current approaches in bioeconomy P2Ps
Christine Bunthof, PLATFORM, Wageningen University and Research, The Netherlands

BLOCK 1: IMPACT ASSESSMENT

13:30 **How to build on research results?**
Louise Pierrel Mikkelsen, InvestorNet-Gate2Growth, Denmark
Entrepreneurship, licencing, new research, policy support, societal innovation, exploitation and market uptake

14:15 Coffee break

14:30 **PLATFORM University: Lecture on Impact Assessment**
Effie Amanatidou, ERA-LEARN, Manchester University, UK
Introduction to the Logical Framework. Focus on the impact assessment, medium and longer term impact, impact for beneficiaries and funding agencies, different kind of impacts: behavioural, science related impacts. What to do and what not to do when measuring impact?
Interactive group part: World Café *Distinguishing key elements for impact; identifying types and timings of impact*

16:45 **Pilot for centralised project-level impact assessment – outcomes and experiences**
Angus Hunter, ERA-LEARN, Optimat, UK & ERA-NET call managers participating in the pilot: Nikola Schulz (SUSFOOD); Marta Norton (ERA-IB-2) & Ivana Trkulja (Core Organic)
ERA-LEARN, PLATFORM, and 3 ERA-NETs from the bioeconomy area are conducting a pilot for centralised project impact assessment. The approach, the survey questions and first results will be presented and discussed.

17:30 End of day

19:00 **Dinner and social evening**

Friday 9 June 2017

BLOCK 2: MONITORING AND EVALUATION

09.00 **PLATFORM University: Lecture on Monitoring and Evaluation in Cross-Border Cooperations**
Patries Boekholt, Technopolis Group, The Netherlands *Focus on monitoring and evaluation part of the Logical Framework and applying it to cross border cooperation. The influence of international collaboration on funding agencies and policy makers; the importance of monitoring and evaluation of P2Ps for funding agencies in convincing policy makers.*

10:00 **Monitoring and Evaluation of projects** Bettina Heimann, FACCE SURPLUS & FACCE ERA-GAS, Aalborg University, Denmark
Offering an insight in the approach and thinking process in the FACCE SURPLUS and ERA-GAS calls

10:20 **Monitoring and evaluation of networks and their activities besides calls**
Stefanie Margraf, JPI FACCE, PTO-JUELICH, Germany *Strategy and approaches for M&E, what do we want to measure, how to start the process, whom to involve.*

10:40 Coffee break

11:00 **Interactive session** *Defining indicators of good performance, harmonizing mid-term and end-term reporting formats & the use of seminars and evaluators in research project monitoring*

11:45 Wrap up

12:00 – 13:00 **Lunch & Goodbye**

Annex II: List of Workshop participants

Last name	First name	Organisation name	Country
Afentaki	Paraskevi	General Secretariat for Research and Technology (GSRT)	GR
Allegrini	Marco	Ministry of Agricultural, Food and Forestry Policies (Mipaaf)	IT
Amanatidou	Effie	Alliance Manchester Business School	UK
Bassler	Arnd	Federal Office of Agriculture and Food (BLE)	DE
Behrens	Hanna Lee	The Research Council of Norway (RCN)	NO
Bergsson	Arnljótur Bjarki	Matís ltd. - Icelandic Food and Biotech R&D (Matis)	IS
Boekholt	Patries	Technopolis Group	NL
Breuer	Christian	Research Centre Jülich (PTJ)	DE
Broekaert	Katrien	Institute for Agricultural and Fisheries Research (ILVO)	BE
Bunthof	Christine	Wageningen University and Research (WUR)	
Chojnacka	Justyna	Ministry of Economy and Competitiveness (MINECO)	ES
Darmendrail	Dominique	French National Research Agency (ANR)	FR
Dumitrache	Nicoleta	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)	RO
Fuchs	Annika	Federal Office of Agriculture and Food (BLE)	DE
Gilarranz	Miguel A.	Support for innovative business groups (AEI) / Ministry of Economy and Competitiveness (MINECO)	ES
Gøtke	Niels	Danish Agency for Science and Higher Education (DAFSHE)	DK
Gouriveau	Fabrice	French National Institute for Agricultural Research (INRA)	FR
Heimann	Bettina	Aalborg University (AAU)	DK
Hunter	Angus	Optimat ltd. - Research and strategy consultants (Optimat)	UK
Jablonowski	Veronika	Research Centre Jülich (PTJ)	DE
Kistner	Catherine	German Research Foundation (DFG)	DE
Kuzniar	Brenda	Wageningen University and Research (WUR)	NL
Lansac	Rocio	National Institute for the Agricultural and Food Research and Technology (INIA)	ES
Lisbjerg	Dennis	Technical University of DK - National Institute of Aquatic Resources (DTU Aqua)	DK
Margraf	Stefanie	Research Centre Jülich (PTJ)	DE
Mikkelsen	Louise	InvestorNet-Gate2Growth	DK
Mogensen	Per	Danish Agency for Science and Higher Education (DAFSHE)	DK
Munksgaard	Lisbeth	Aalborg University (AAU)	DK
Nagy	Zsuzsa	Project Management Jülich (FZJ)	DE
Norton	Marta	Foundation for Science and Technology (FCT)	PT
Redd	Tom	The Research Council of Norway (RCN)	NO
Rodríguez	Mar	Barcelona Supercomputing Center (BSC)	ES
Schavemaker	Yvonne	Dutch Organization for Applied Scientific Research (TNO)	NL
Schulte	Petra	Project Management Jülich (FZJ)	DE
Simić	Barbara	Geological Survey of Slovenia (GEO-ZS)	SI
Sinigoj	Jasna	Geological Survey of Slovenia (GEO-ZS)	SI
Trkulja	Ivana	The International Centre for Research in Organic Food Systems (ICROFS)	DK
Young	Chris	UK NCP Energy	UK
Zobell	Oliver	Research Centre Jülich - Project Management Juelich (PTJ/FZJ)	DE