

InnoForEST

Smart information, governance and business innovations for sustainable supply and payment mechanisms for forest ecosystem services

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D5.4: Design on training events to develop innovation capacities and innovation knowledge

Main authors:

Christian Schleyer, Jutta Kister & Michael Klingler

With contributions from:

Peter Stegmaier, Ewert Aukes, Lasse Loft, Martin Špaček & Stefan Sorge

Reviewers:

Sara Broogard, Francesca Bussola & Klaasjan Visscher

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Executive Summary

This Deliverable compiles and reflects all forms of training and/or training events that have been designed and implemented in the InnoForESt project. This includes, first, the training approaches used, as well as experiences gained, through providing internal training in its various forms. Second, examples are given for how the CINA approach and the large suite of accompanying tools and methods have been used by members of the InnoForESt project for teaching (young) academics. The experiences gained through providing internal training in its various forms during the InnoForESt project inform this manual for training practitioners and scientists. This includes formats (e.g., webinars, physical workshops, manuals, training material made available online) as well as components introduced during these events (e.g., introduction to the CINA approach, on empirical and analytical tools like Stakeholder Analysis and Role Board Games). This Deliverable contains formats and components that worked, elaborates on the necessary practical, technical, and other preconditions that proved to be important, and reflects on the (experienced and/or anticipated) factors that made a particular format or method less effective and provides suggestions on how to overcome or mitigate obstacles and/or provides alternatives.

The experiences made during the InnoForESt project show that the general coordination was effective and smooth, and a set of coordination processes was established to promote mutual exchange between scientists and with the IR team. However, what one should pay more attention to in future projects is more training in methods (e.g., stakeholder interaction and strategic data collection of these interactions) and skills (non-scientific communication, networking, team building, ability to play the role of change agent). Here, the broad range of methods offered - although not 'requested' - and the tasks to be carried out in the IRs and by the IR teams was perceived as overwhelming by some IR teams. Focussing on fewer methods and tasks may have allowed for more in-depth training in those.

Further, one should not consider it self-evident that the scientific and practice partners would be able to lead group processes, be it to moderate workshops or to motivate and mobilise stakeholders, to organize initiatives and to develop independent projects, initially with help of the project and then even without the project would continue the initiative. This is a typical phenomenon and challenge in transdisciplinary projects, yet is seldom sufficiently anticipated and addressed in the composition of the research team and in the project design. Thus, a stronger focus on enabling, i.e. training, scientists and practitioners to work in a transdisciplinary way is strongly recommended for future projects.

InnoForESt project members will certainly use the InnoForESt approach, its related methods and tools, as well as the findings for continuing teaching (young) academics. Yet, also practitioners can learn from the experiences gained in InnoForESt and from the opportunities and challenges of applying the respective approaches, methods, and tools. For that purpose, target-group specific training formats - based on the training approaches used during the project - will be developed including webinars, three-day training courses, or a week-long Summer School. Depending on the targeted audience and participants of these training events, the stage of the innovation process (if already known or identified), and the format (e.g., webinar, three-day training course) lecturing elements are combined with various forms of interaction (e.g., group work developing brief narratives for possible innovation-related scenarios; carrying out short RGBs; etc.).

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List of Abbreviations

InnoForEST	Abbreviation for the project ‘Smart information, governance and business innovations for sustainable supply and payment mechanisms for forest ecosystem services’
IR	Innovation Region
NGO	Non-governmental organisation
CINA	Constructive Innovation Assessment
CTA	Constructive Technology Assessment
GSA	Governance Situation Assessment (refers to InnoForEST Deliverable 5.1, Aukes et al. 2019, and InnoForEST Deliverable 5.5, Aukes et al. 2020a)
RBG	Role Board Game
STA	Stakeholder Analysis (refers to InnoForEST Deliverable 5.2, Schleyer et al. 2018)
SETFIS	Socio-ecological-technological forest innovation systems
SYKE	Finnish Environment Institute

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1. Introduction

This InnoForESt Deliverable 5.4 compiles and reflects all forms of training and/or training events that have been designed and implemented in the InnoForESt project. This includes, first, the training approaches used, as well as experiences gained, through providing internal training in its various forms. This was particularly challenging due to the high interdisciplinarity of scientists across all Work Packages (WP) and a similarly heterogeneous composition of the Innovation Region (IR) teams consisting of scientific and practice partners. Second, examples will be provided for how the CINA approach and the large suite of accompanying tools and methods have been used by members of the InnoForESt project for teaching (young) academics. The experiences gained through providing internal training in its various forms during the InnoForESt project inform this manual for training practitioners and scientists. This includes formats (e.g., webinars, physical workshops, manuals, training material made available online) as well as components introduced during these events (e.g., introduction to the CINA approach, on empirical and analytical tools like Stakeholder Analysis and Role Board Games). This Deliverable contains formats and components that worked, elaborates on the necessary practical, technical, and other preconditions that proved to be important, and reflects on the (experienced and/or anticipated) factors that made a particular format or method less effective and provides suggestions on how to overcome or mitigate obstacles and/or provides alternatives. Building on the experiences made, third, suggestions for future forms of training events both for scientists as well as practitioners will be outlined.

In Section 2, we briefly introduce the InnoForESt approach and highlight the importance and challenges of continuous exchange on and training of the CINA approach and its related tools and methods.

In Section 3, we elaborate on the main elements of internal training designed and implemented in the InnoForESt project. For each element, we describe the objective(s) and development context, briefly introduce the actual design(s), and conclude with key lessons learnt. It is important to note that both objectives and design were usually not static but needed to be - and often were - adapted to the project needs and demands for training articulated by the various members of the InnoForEStproject. In particular, we will focus on 1) the ongoing assistance and integration activities for the individual IRs as well as the training approaches for 2) the Stakeholder Analysis (STA) and Governance Situation Assessment (GSA), 3) the CINA approach at large, 4) the Role Board Games (RBG), 5) the institutional mapping, 6) platform and network building, including facilitation and training for InnoForESt platform users in IRs, and 7) the socio-ecological-technological forest innovation systems analysis (SETFIS). In the last subsection, 3.8, we describe and reflect on experiences made by InnoForESt project members with teaching the CINA approach and its related methods and tools to (young) academics at different universities.

In Section 4, we give a brief outlook and point to possible future forms of training targeting practitioners and/or (young) academics.

2. The InnoForEST approach

2.1 What is the approach

The InnoForEST approach is based on close collaboration between all partners in a case-sensitive manner. InnoForEST uses the so-called **Ecosystems Service Governance Navigator & Manual for its Use** (InnoForEST Deliverable 5.1, Aukes et al. 2019), developed over the first year of the project in close collaboration with all partners and in close exchange with them about what needs and can be done under each regional circumstance. It *“entails a compendium of ‘heuristics’ understood as a set of practical tools (yet rooted in theory) integrating the project knowledge generation and communication approach to forest ecosystem services (project glossary, analytical framework, fact sheets, typologies, workshops, etc.). It aims at giving orientation, not setting hard rules.”* (Aukes et al. 2019: 1). The updated version of this is InnoForEST Deliverable 5.5 (Aukes et al. 2020a) and will be publicly available from the end of December 2020. This Navigator looks at the approach in retrospect on the completed project and draws numerous examples and references from studies accompanying the innovation efforts that have since been completed.

The approach is based on the assumption that two requirements need to be met in order to have a chance to get innovations off the ground: the basis in **thorough research** into the current initial situation and past efforts to achieve something similar (comprehension and recognition of the real, existing Forest Ecosystem Services (FES) governance problems) as well as **personal, continuous, and trusting cooperation** in the IRs with local partners and stakeholders (i.e., real stakeholder inclusion and recognition). We have always been guided by the premise that the innovation work is not an end in itself of an artificially created project from Brussels, but must be based on the real needs and perspectives of the stakeholders themselves. Finally, it is about their real economic and forest-ecological existence, so InnoForEST is not just an abstract exercise.

2.2 What is crucial about applying the approach

The InnoForEST approach has been designed to fulfil an **Innovation Action**¹. The aim was, on the one hand, to initiate new governance innovations or to give existing ones a new boost, and, on the other hand, to develop and test prototypes of these innovations. This means that InnoForEST did not primarily conduct research for its own purposes, but employed research approaches and methods as a means to conceptually, methodologically, and empirically support actual ongoing innovation work ‘on the ground’. The main tasks in the InnoForEST project thus revolved around coordination, assistance, reflection, and training. This deliverable also takes this primary set of tasks into account.

Coordination concerned the cooperation between the various IRs and the overall project as well as that between the work packages and the regions. Project meetings for mutual exchange had to be coordinated as well as the daily work and research with which the innovations were to be initiated and advanced.

¹ In *HORIZON 2020 – WORK PROGRAMME 2018-2020 General Annexes, Section D. Types of action: specific provisions and funding rates, Part 19 – Commission Decision C(2017)7124*, an Innovation Action is defined as “Action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.”

Assistance was the continuous support of the innovation efforts in the regions by those project members who led the research and the interactions with the stakeholders. **Reflection** revolved around making content and procedures that had emerged in one place and perhaps even proven to be available as ideas to the other partners. It should also enable a learning curve and contribute to replication and upscaling. In the course of this, it was also clear that a whole range of skills had to be carried into the broader project through **training** offers. Given the very heterogeneous disciplinary background of project members and the great variety of concepts and methods employed in the project, key training areas had to be reduced to a few common denominators, such as core approaches to preparatory research (on Governance Situation Assessment, cf. InnoForEST Deliverable 5.1, Aukes et al. 2019; on Stakeholder Analysis, cf. InnoForEST Deliverable 5.2, Schleyer et al. 2018), carrying out strategic workshops (CINA approach, cf. InnoForEST Deliverable 5.5, Aukes et al. 2020a), and documentation of the innovation work (cf. InnoForEST Deliverable 4.2, Aukes et al. 2020b). This was considered crucial for the implementation of a consistent approach to stakeholder participation, prototype creation, and comparability of results. The following Section 3 describes the various forms of training and their objectives in more detail and presents lessons learned based on the experiences made in the InnoForESTproject.

3. Trainings and experiences in InnoForEST

3.1 Ongoing assistance and integration for individual Innovation Regions

3.1.1 Objectives and context

There was a **continuous working relationship** between the people in the overall project who were responsible for shaping the interaction with the stakeholders and the teams in the regions consisting of scientific and practice partners in the form of ‘innovation work assistance’. Information was exchanged, workshops were planned, prepared and afterwards discussed, and reports created together (e.g., InnoForEST Deliverable D4.2, Aukes et al. 2020b; InnoForEST Deliverable D4.3, Loft et al. 2020; InnoForEST Deliverable D3.2, Kluvánková et al. 2020). An important dimension of all of this has always been the imparting of practical knowledge and action orientation for interactive innovation work. The connection between **cooperation and knowledge transfer** is characteristic of InnoForEST. This was necessary because the participants in the project come from very different professions and disciplines and also because the central CINA approach is not common knowledge. It therefore not only had to be taught how to operate it, but also explained **in a motivating way** why it can be so fertile if done correctly. It was also clear that they wanted to convey the basic idea of the approach, but at the same time wanted to do justice to the other local conditions. For this it was necessary to reinvent the approach for each region and innovation - to adapt it to the respective situation without undermining it.

3.1.2 Design

The assisting accompanying work had its own rhythm. First, the **knowledge base** had to be created (Stakeholder Analysis, Governance Situation Assessment) in order to be able to **use the CINA approach** in a second step (identify, understand, and mobilize stakeholders and build scenarios and workshops on them).

In order to achieve the necessary quality of **Stakeholder Analysis (STA)** (see Section 3.2), it had to be explained thoroughly (what to look for and how the data could be collected, arranged, and interpreted) and, in turn, motivated to take on the effort of this preparatory work. Thorough preparatory research is by no means common everywhere.

In addition, the so-called **Governance Situation Assessment (GSA)** was developed and conveyed (see Section 3.2). While all this was still going on, preparations for the first workshops began in the regions. In order to be able to clarify what was needed for a normal workshop or a strategic CINA workshop, the training had to take place at this stage. There was a **webinar with CINA training** (see Section 3.3), in which the approach and core components such as scenario creation and workshop composition were taught. Since it was not enough to just convey the idea, but also to put the CINA idea into practice, an **ongoing support process** began, geared towards the preparation of a concrete CINA workshop in the respective Innovation Region. This included on-site support by the CINA experts in the project and follow-up exchanges in the form of manoeuvre critique, but also making the case to the IR teams for taking the comprehensive documentation of the CINA workshops and its analytical categories (see InnoForESt Deliverable D4.2, Aukes et al. 2020b) seriously as a means of reflecting past activities and developments and as basis of furthering the governance innovation under scrutiny. To that end, the InnoForESt project members assisting the Innovation Regions were **often on site in the regions** when workshops were held. They took part in many meetings that served the purpose of project coordination and content-related work.

3.1.3 Lessons learnt

- In order to initiate an innovation with real people and relevance on the ground, project partners - i.e. scientific and practice partners - need to get to **know each other well and build trust** among each other.
- In the course of this, a **working relationship** has to be found that is characterized by knowledge, respect, and commitment.
- The support of the regional partners has brought us closer and closer to their situation over time. Let's imagine that we would not only have had numerous online contacts to get to know ourselves and the location, but had **visited all regions and had been shown around** long before the first workshop. We might have found a deeper basis between people and factually: we could have better assessed and addressed each other.
- It is important to strike the right note: not patronise but **enable**.
- One has to be aware and budget (time- and money-wise) that this means **a lot of effort**: numerous online meetings are necessary in order to stay up to date with the work in the regions and develop a feel for how and where to track and dig deeper
- Not everyone has learned **how innovation work functions** and how to provide strategic knowledge as a researcher so that innovation can be developed empirically and fostered on the ground. Many project partners have to learn that first. To do this, they need **targeted advice and training**.
- It is also necessary to train **how to use those involved** in a smart way with regard to their strengths and weaknesses.
- The preparatory and accompanying research in accordance with the GSA and STA is not easy for colleagues from outside the field. Here, the project has to **train and sensitise, accompany and help at an early stage**. These are not methods that can be carried out according to a completely standardised scheme. You have to learn to adapt them to the circumstances and still achieve systematic results.
- The same applies to the project-level assistance providers, who have to **learn** how they themselves develop a working relationship, what is important from the project perspective and how this can be achieved, how they try it out and evaluate initial experiences.
- There is a need for **training for the assistance providers** themselves on how they in turn develop a working relationship, what is important from a project perspective, and how this can be achieved. It may be necessary to try it out, evaluate first experiences and then train - or train them to do it themselves. Some level of 'self-training' to become a 'better' assistance provider may also be wise.

3.2 Training approaches for Stakeholder Analysis and Governance Situation Assessment

3.2.1 Objective and context

The InnoForEST multi-actor-approach foresees **stakeholders' engagement** as key for exploring innovation potentials for governing FES sustainably and for putting them into use. The identification of practice-relevant problems and the perception of these problems, interests and demands, as well as the collaborative development of innovative and practice-relevant governance solutions are therefore highly dependent on the successful and comprehensive **identification of and engagement with stakeholders** in the IRs. To ensure a certain standard of stakeholder characterisation and governance context description and to allow for some comparability of results across IRs, the implementation of training approaches for preparing and conducting the STA and, later, the GSA in the IRs was crucial. This enabled IR teams to gain implicit **knowledge** as well as identify **knowledge gaps** about stakeholders, institutional arrangements, and policies, and to help them gather new information that may support 'their' innovation processes.

3.2.2 Design

The training approaches employed were in line with the overall InnoForEST stakeholder's engagement strategy (see Interim Guideline for Stakeholder's Engagement Strategy) to ensure the internal coherence of activities in the IRs and to respect different types of stakeholder's engagement actions, their purposes and responsibilities.

In order to familiarise the IR teams with the concepts of STA and GSA and to support their implementation by the IR teams, a **fact sheet for each of the respective assessments** was produced. It provided a structured, yet flexible and methodological frame for preparing and carrying out the analyses (see annex 1 in InnoForEST Deliverable 5.2, Schleyer et al. 2018 for the factsheet on STA, and InnoForEST Deliverable 5.1, Aukes et al. 2019 for the factsheet on GSA). In practice, the fact sheets proved to be a helpful tool to identify and characterise relevant stakeholders and stakeholder types, offered a suite of empirical approaches to compile existing and/or gather new relevant information, and also emphasised 'practical' and conceptual synergies between STA and GSA. In order to illustrate the application of the GSA and to help the IR teams to put it into practice, another **fact sheet on the empirical and practical approaches actually employed for STA in the Austrian IR Eisenwurzen** was produced. Further, the conceptual and methodological elements and options of both STA and GSA as well as their crucial role for preparing the activities in the regions fostering the governance innovation processes were frequently discussed with each IR team during a **sequence of virtual meetings**.

In addition, the presence of both scientific and practice partners of all IR teams as well as the other scientists of the InnoForEST project, often for several days, at **project internal meetings and InnoForEST Consortium Assemblies** was actively used to introduce/reiterate the objectives and key conceptual and methodological features of STA and GSA and to discuss their practical implementation in each region. Those physical meetings provided also a unique possibility to discuss and reflect in person the latest results of STA and GSA and to promote cross IR exchange of stakeholder specific information, knowledge, and networking activities.²

² The following meetings featured discussions of concept, implementation, and results of STA and GSA, using fact sheets and stakeholder maps: 1) Internal meeting WP2/WP3 and WP4, Bratislava, 16 January 2018; 2) Combined meeting of WP4/WP5 and WP2, Berlin, 24. April 2018; 3) CINA webinar in September 2018; 4) 2nd Consortium Assembly, Trento, October 2018; 5) 3rd Consortium Assembly, Schlierbach, November 2019.

Based on the results of the GSA in the IRs, stakeholder maps were produced to visualise the respective stakeholder landscapes and to facilitate their reflection by the IR team, but also to allow for some comparison of GSA results between the IRs. More precisely, GSA-relevant information from each IR was compiled in lists of stakeholder categories and stakeholder-specific attributes, then visualized in Venn diagrams, and finally reflected upon with the respective IR teams in a series of virtual and face-to-face meetings. The first results of the GSAs were presented and discussed at the 2nd Consortium Assembly in Trento in October 2018 and, in an updated form to account for changes in the stakeholder landscape, at the market place event during the 3rd Consortium Assembly in Schlierbach in November 2019.

3.2.3 Lessons learnt

- The **development of fact sheets** on the purpose and practical implementation of the STA and GSA, including the illustrative example of the GSA in the IR Eisenwurzen, and the subsequent **virtual and ‘physical’ consultation loops** were essential to enable highly interdisciplinary IR teams with often no substantial experience in (empirical) social science research to carry out the assessment and to tailor them to their IR specific needs, innovation contexts, and capabilities. The factsheets provided easily accessible information and methodological tools to gather the relevant information.
- The **visualization of stakeholder mappings** (e.g., in Venn diagrams) as well as the presentation as posters at physical meetings facilitated the comparison of and reflection on the different stakeholder networks in the IRs and thus stimulated discussions between the IR teams.
- The STA was built mainly on qualitative data collection. Many stakeholder interviews were conducted by phone, Skype, or face-to-face in the IRs to gather knowledge about the stakeholder’s perspectives and areas of interest (see InnoForESt Deliverable 4.1, Sattler 2019). However, the IRs followed **different approaches** in preparation, data collection (e.g., structured, unstructured interviews, use of audio/video recordings) and analysis (e.g., transcription of interviews, coded content analysis, etc.). On the one hand, this sometimes made it difficult to compare results between IRs. On the other hand, and more importantly however, this room for manoeuvre was important to allow for differences with respect to pre-existing stakeholder knowledge and relations, the different ‘sizes’ of the network of relevant stakeholders, and different competencies and experiences with conducting empirical social science research on part of the IR teams. In future projects, more **hands-on training offers** (e.g., workshops on the application of empirical tools and methods like stakeholder interviews) as well as more **room for discussing experiences** with the empirical process of identifying, describing, and assessing stakeholders’ interests, visions, and concerns and governance contexts would need to be considered.

3.3 Training approaches for Constructive Innovation Assessment (CINA)

3.3.1 Objectives and context

CINA was one of the **core methods** used in InnoForEST to support the governance innovation processes concerning forest ecosystem services. Its uses were both practical and scientific. On the one hand, with roots in Technology Assessment, it was well-fit to structure innovation processes in practice and support the further development of the innovation idea in question. On the other hand, it was an entry point for studying the functioning of innovation processes, in this case in the environmental domain. A methodological innovation in its own right, this calls for an evaluation and an account of the lessons learnt regarding how the training on CINA was achieved within InnoForEST.

3.3.2 Design

CINA is in the tradition of Constructive Technology Assessment (CTA), long known for the assessment of emerging technologies (Rip & te Kulve 2008; Rip & van den Belt 1986) and used to **explore** alternatives that are more robust and acceptable socially, technically, commercially, politically, ethically, legally or otherwise (see also <https://cta-toolbox.nl/>). As forest ecosystem service provision and governance involves much beyond technology, the CTA approach has been redesigned (cf. Aukes et al. 2020a, b, c; Stegmaier 2020; Visscher et al. 2019; Stegmaier & Visscher 2017).³

The way we used the CINA approach in InnoForEST, it had never been practiced before. We also fleshed it out during the first year of the project in close collaboration with our partners in the Innovation Regions. Therefore, in this project we did not have any ready answers and examples for many questions. Instead, most of it was worked out in direct communication with the IR teams as a generic act of co-creation. We offered a first formal training in September 2018 in the form of a half-day **webinar** (Figure 1).

Figure 1: The agenda for the CINA webinar in September 2018

10 min	Introduction
10 min	Rationale underlying CINA strategy articulation workshops
10 min	Method of CINA: Scenario development
40 min	Exercise: Applying CINA to current CS: scenario ideas for your cases
10 min	Break
60 min	Scenario mini-clinic: Report back rough ideas for your scenarios
10 min	Method of CINA: Workshop format
20 min	Before and after CINA: Stakeholder invitation, workshop reporting
10 min	Break
30 min	Christian Schleyer: Stakeholder assessment; implications for stakeholder invitation
10 min	Conclusion by Carsten Mann

³ For more detail, see InnoForEst Deliverables 5.3, Aukes et al. 2020c and 5.5, Aukes et al. 2020a.

Most of the partners from the regions took part. We explained the CINA idea and procedures in connection, discussed the creation of the scenarios, and also spent a good part of the time on practical exercises for creating scenarios (Figure 2). In doing so, we relied on materials and examples that had already been used successfully as CTA - but had translated them previously into the FES context and the CINA format.

Figure 2: The exercise during the CINA webinar in September 2018

Steps:

Prior research (WP2, stakeholder analysis, governance situation assessment, ...)

- (1) Identify the **socio-technical & socio-ecological processes** impacting the governance innovation in your case
- (2) Identify how the **governance innovation** in your case impacts its socio-technical and socio-ecological environment
- (3) Identify societal developments, which are not under project's control
- (4) Identify current & expected **uncertainties**
- (5) Discuss imaginable **variants** of the innovation (up to 3 variants, for a start)
- (6) Discuss how these variants may be embedded in socio-technical & socio-ecological **futures**
- (7) **Formulate a narrative** encompassing dimensions 1-6

When the first CINA application examples from the regions were available, we discussed directly with the colleagues who did them. In order to disseminate useful knowledge across the project and at the same time to collect even more suggestions from all partners, we also received an entire agenda item, a '**scenario clinic**', at the Consortium Assembly 2018 in Trento to discuss the status of the development of innovation scenarios with everyone. We called this the 'The InnoForEst CINA workshop preparation - scenario clinic meeting', for which we had almost three hours (Figures 3 & 4).

Figure 3: The scenario mini-clinic during the webinar in September 2018

Let's do it now!

Every case study group, please ...

- ✓ Works on the scenarios (30')
 - Continue on existing ideas; start new ones ...
- ✓ Consider spectrum of participants (10')
 - Those directly relevant, indirectly; enablers (initiators) & selectors (users)
- ✓ Present and discuss in the forum here (60')
 - Each group 10'
 - Brief sketch of rough scenarios, then discussion

Now, let's hear more about your scenario ideas

- (1) What's the thrust of each scenario variant
(1 headline, brief explanation)
- (2) What were you struggling with during the exercise?

Figure 4: The agenda of the scenario clinic at InnoForESt General Assembly in Trento, October 2018

5 min	Introduction
120 min	Scenario construction for CINA strategy articulation workshops
25 min	On practicalities of the CINA Workshop documentation

On this occasion, all IR teams presented preliminary draft scenarios (Figure 5) which they had prepared before. We discussed them from a CINA-practical perspective as well as in terms of content. Everyone now was able to present draft scenarios and we could discuss and compare their structures. The same in terms of content: from this point it was clear to everyone who was planning similar or different, but still exciting, promising activities. From then on, the regional teams began to exchange ideas with one another more directly/bilaterally.

Figure 5: Example of tabular scenarios as presented by the Finnish Innovation Team at InnoForEST General Assembly in Trento, October 2018

Scenarios Aspects	Scenario 1 Authority-driven mechanism	Scenario 2 Voluntary contracting	Scenario 3 Nature values bank
Actor configuration	<ul style="list-style-type: none"> Landowners offer sites for restoration Added (nature) value assessed by the authority or an assigned expert Authority chooses suitable offset sites (Moderate) monitoring responsibility with the authority 	<ul style="list-style-type: none"> Landowners offer sites for restoration Assessment carried out by an accredited consultant Compensating actor receives a certificate Landowner restores and possibly manages the site Consultant will monitor impact of offset Authority sets principles for contract and oversees legality of contracts 	<ul style="list-style-type: none"> Landowners offer sites for restoration Bank monitors sites and development of nature values Authority oversees only the bank.
Governance arrangement	<ul style="list-style-type: none"> Authority sets the conditions 	<ul style="list-style-type: none"> Terms negotiated between the actor needing the compensation and the landowners offering the offsets 	<ul style="list-style-type: none"> Bank sets conditions for offsetting, following legal and possible strategic guidance principles
Organisational embedding	<ul style="list-style-type: none"> Ministry of the Environment Ministry of Agriculture and Forestry 	<ul style="list-style-type: none"> Landowners' Union Ministries Companies needing compensations Consultants 	<ul style="list-style-type: none"> Nature values bank, which is a foundation like actor and an intermediary
Business model	<ul style="list-style-type: none"> Government-driven, can include competitive supply 	<ul style="list-style-type: none"> Supply and demand develops in a network like market 	<ul style="list-style-type: none"> Landowner sells or leases the sites to the bank as nature capital Bank sells added nature values to actors needed compensations Supply and demand meet through bank
Role of citizenry	<ul style="list-style-type: none"> Legal hearings? 	<ul style="list-style-type: none"> Expressing social demand for compensation? 	<ul style="list-style-type: none"> Small / no role? Expressing social demand for compensation?
Role of technology & science	<ul style="list-style-type: none"> Moderate, organized & predictable demand for impact assessment & monitoring Selection & pairing of sites can benefit from new technologies & algorithms 	<ul style="list-style-type: none"> Impact assessment & monitoring can benefit from innovative knowledge processing Selection & pairing of sites can benefit from new technologies & algorithms Possibly new virtual market space 	<ul style="list-style-type: none"> Impact assessment & monitoring can benefit from innovative knowledge processing Selection & pairing of sites can benefit from new technologies & algorithms Possibly new virtual market space

At the same Consortium Assembly, during another extra time slot, we thoroughly **introduced and discussed** the documentation of the CINA work on the basis of a specially designed report template. The aim of the report format was not only to let the regional teams highlight and document the strategies, content, and results of the CINA work, but also to draw attention to aspects that are important for CINA through the specific structure of the topics to be reported. The results of this comprehensive form of documentation can be found in InnoForEST Deliverable 4.2 (Aukes et al. 2020a).

However, as already indicated, our training was not limited to specially designated seminar moments, but always took place **during the numerous bilateral online meetings** for the preparation and follow-up of workshops (we called this ‘ongoing assistance’, see Section 3.1). In addition, CINA-experts from the InnoForEST project were **present in all regions at many workshops** and were able to collaborate there, as far as their language competence allowed for that. That always took on an instructive character, but was at the same time direct co-production work. For example, IR teams were guided by an idealized CINA workshop flow (Figure 6), which had to be adapted to the respective circumstances and to reflect what was done for what reason and how differently, or better left as originally conceived.

Figure 6: Idealised CINA workshop workflow

Welcome, introduction	<ul style="list-style-type: none"> – Emphasise what's good for participants (project secondary) – Working mode – Let's probe our best ideas, put into scenarios – "Let's talk out of the box!"
Brief introduction to scenarios	<ul style="list-style-type: none"> – Key points in comparison – Participants have seen them before (sent by mail in advance)
Discussion of scenarios	<ul style="list-style-type: none"> – Now, in the hands of the moderator(s) to sense what participants want to emphasise – ... and when to channel the discussion to other aspects, too – Primarily open discussion, but can for some moments be filled with mini-games (sorting of options, voting, ...)
Joint summary: results of scenario appraisal	<ul style="list-style-type: none"> – How to see scenario alternatives – What needs to be modified (added, changed, etc.) – Which scenarios or parts of them should be pursued further?
Discussion of implications of selected scenario(s)	<ul style="list-style-type: none"> – Given the most attractive/realistic scenarios ... – what do to, what to focus upon? – whom/what else to include (missing in the innovation so far)?
Joint summary: results	<ul style="list-style-type: none"> – Summary of implications – Who commits to what? – Expression of expectations what should be done/come next
Finale	<ul style="list-style-type: none"> – Summary of overall results (if more general results need to be expressed than those in step before) – Eventually open discussion again for things that also need to be said – Expression of expectations what the next strategic workshop should address – Planning of next steps together

3.3.3 Lessons learnt

- We have managed to **establish** a completely new approach for the area in six different regions while maintaining a rough line so that the CINA handwriting is largely **recognizable** in many workshops.
- We have **further developed** the CINA approach and were able to **include many suggestions** (formats for stakeholder interaction, composition of stakeholder groups, scenario variants, obstacles and detours, moderation styles and the inclusion of external moderators; cf. InnoForESt Deliverable 5.3, Aukes et al. 2020c).
- The explanations and instructions have remained all too **abstract** for many partners. We didn't practice enough and didn't work enough on the individual regional projects.
- The practice partners in the regions would have found it useful to have some very **practical examples** of activities to implement during the workshop to involve stakeholders, present the topics and structure the meeting. it was obviously not enough to discuss such issues during preparatory meetings only.
- We should have taken **sufficient time** at the webinar: (a) Make the introduction more interactive, so that the approach is directly related to their local projects and thought through by all partners, (b) not only the scenario work, but also the planning of the workshops play through the partner for the first time, and finally (c) distribute the workshop over two points in time so that you start planning and scenarios at the first appointment and meet again in the respective teams after a few days of further work and discussed the first results of the real exercise.
- We counted on doing the practical applications in close contact with the partners anyway, which was also the case, but by then **too much time had passed after the webinar**, so that a lot had to be explained again. The CINA preparation process had not yet been started during the webinar.
- If that had been successful, the relevance of the information given in the webinar would have become much more clear and would have been better integrated into the work in the regions.
- Time and again, not **all those people** who had something to do at the workshop were **present** at the trainings and preparatory meetings. This turned out to be problematic because it meant that the teams did not have a sufficient understanding of how to work. So it has to be made sure that all important people are always there. If this is not possible, separate meetings have to take place. It will hardly be possible to avoid the fact that everyone is not always there - for example, because appointments collide or external moderators are only called in at a later date or the teams did not see them as important participants in the meetings.
- What can also help is to **record the training units** and make them available to the partners for supplementary training.

3.4 Training approaches for Role Board Games

3.4.1 Objectives and context

The Role Board Game (RBG) is an interactive agent-based model and represents a **simulation of real-world decision making situations**. The main purpose is to **test novel policy/governance instruments** and **facilitate the collective learning process and knowledge exchange** as it allows for repeated interactions and communication. In InnoForESt, RBG was designed to test innovations in sustainable FES provision and to be applied - if possible - in all six different IRs with their specific conditions and with real stakeholders' participating in the Games. In reaction to this, the RBG design allowed **adaptation of some components according to the local conditions**. At the same time, however, it was necessary to maintain some key elements of the design to enable subsequent comparison of results across regions.

3.4.2 Design

To ensure a smooth application within the InnoForESt project, the following training-related steps were undertaken:

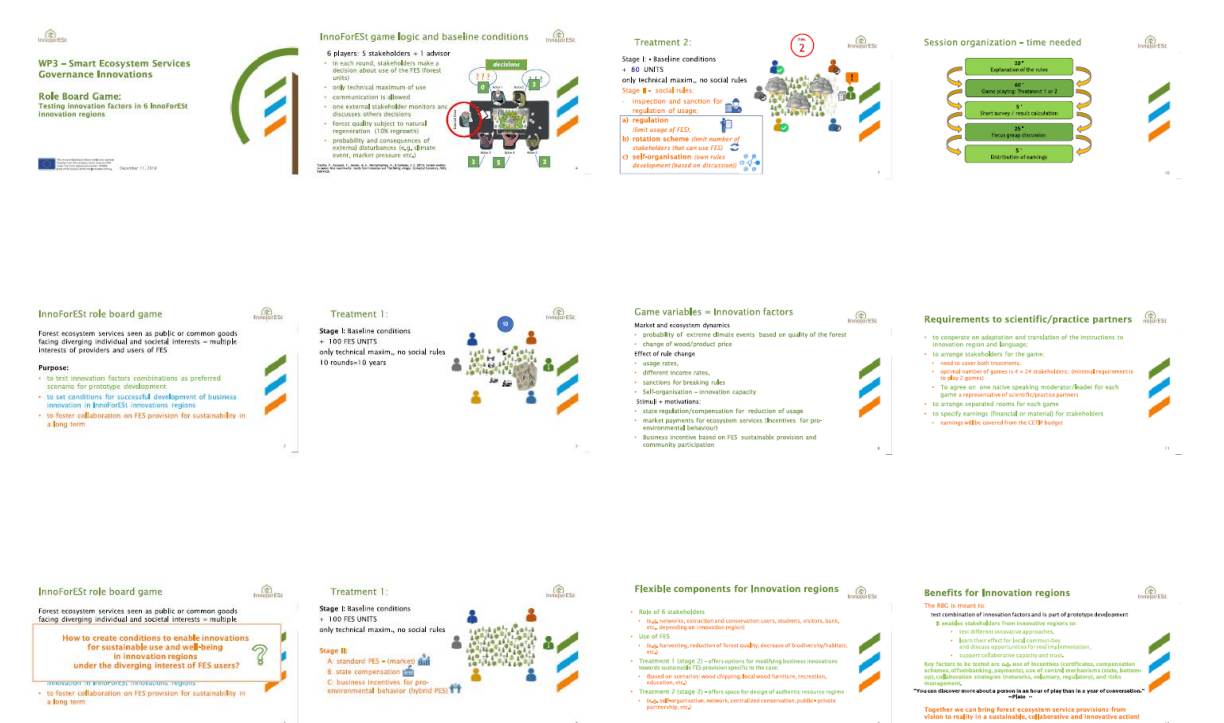
- **Preparation and pre-tailoring** of the basic RBG design based on scientific literature and knowledge about the IR contexts;
- **Bilateral discussion with practice partners** about flexible components based on scenarios;
- Further modification and **adaptation of RBGs for IRs**, partly based on comments on draft concepts from practice partners;
- Approval of the final version of adaptation and preparation of the necessary materials (if necessary, also their translations);
- Setting up suitable dates for RBGs and organising the practical **hands-on training** with local assistants - mainly from the respective IR team - prior to the RBG session;
- Formulating conclusions of the RBGs and analysing the results.

To this end, RBG in InnoForESt has formed a **central role on transdisciplinary co-production** as of repeated interactions with representatives of the Innovation Regions, both practice and scientific, though with some differences with respect to frequency and intensity. Further, the necessary transfer of knowledge and learning about RBG had to take place, including training IR teams in organising the respective RBG sections.

On a more general InnoForESt project level, the basic parameters of the RBG were first presented at the 2nd Consortium Assembly in Trento in October 2018, where also its demonstration took place and much time was devoted to its discussion with all project partners. This was followed by a series of bilateral online meetings with representatives of some of the IR, where the concept was presented and its modifications for the needs of practice partners were discussed in more detail. During these meetings, it was necessary to provide training not only on the 'rules of the Game', but also on the organization of the experiment itself. This was done partly online during these meetings, but in particular also during a personal meeting before the workshop where the game was featured. For this purpose, additional documents were prepared, for example, Powerpoint presentations (Figure 7), an info sheet⁴, checklists, team role descriptions, etc.

⁴ Tatiana Kluvánková, Veronika Gežík, Martin Špaček, Viera Baštáková, Carsten Mann, Lasse Loft (2018): RECONFIGURATION OF INNOVATION FACTORS for prototype development (Behavioural experiment – Role board game) - Infosheet. See InnoForESt Deliverable 3.2 Kluvánková et al. 2020.

Figure 7: PPT on Role Board Game: Testing innovation factors in 6 InnoForEST innovation regions



Usually, the RBG itself was led by CETIP representatives in English (or Czech and Slovak) and local partners acted as assistants. Only in the case of the Czech Republic and Italy, for language reasons, it was necessary to provide more substantive training for the local organizers on the management of the RBG session directly, including the translation of all materials.

3.4.3 Lessons learnt

- It is necessary to devote **sufficient time** to discuss and develop trust and a collaborative relationship with local teams responsible for communication with stakeholders in order to clarify any ambiguities regarding the RBG concept itself and the experiment(s) it contains.
- It is crucial to highlight and to **communicate effectively to stakeholders** and the IR teams the **value added of the RBG** as a stimulating activity rather than ‘only’ being a Game.
- If possible, **adjust** the design of the experiment and its narrative **as close as possible to specific local conditions** so that participants can identify with the simulation as much as possible. However, at the same time, it is necessary to maintain/keep some basic technical parameters of the concept to allow for cross-IR comparisons.
- The **clear division of roles and responsibilities** within the RBG team is key, in this case: monitor 1 as the leader of the game, monitor 2 responsible for the calculation of results and software, monitor 3 operating the answer sheets and table, monitor 4 makes notes from discussion and progress of the game. It is recommended to prepare tasks and responsibilities for team members in written form and also to record the discussion.
- It is important to hold a meeting of all the organizers (just) before the RBG session, in order to provide **training on the organization of the session**, to mutually agree on the process to minimize disruptive elements, and to check the functionality of the software and other components of the experiment. Here, it is recommended to prepare a check-list in advance.
- It is key to **take sufficient time to interpret results** and interconnect them in overall findings.

3.5 Training approaches for Institutional Mapping

3.5.1 Objectives and context

As part of the WP 2 task of mapping and assessing forest ecosystem services and institutional frameworks, the decision was made to analyse strategies, laws, and other policy documents. For all IR countries and the EU level, this included forest strategies and forest laws, as well as the biodiversity- and bio-economy-related strategies. The final product is a database which contains mainly quantitative information on relevant factors/variables mentioned in the analysed documents. These were further analysed with SPSS to create cross tabulations and to see which of these factors/variables show correlations (or a lack thereof) between them (InnoForESt Deliverable 4.1, Sattler 2019)

The core of the empirical work consisted of coding policy documents to map the institutional landscape for FES provision in Europe. Most of the strategies were available only in national languages. For the coding, InnoForESt project members but also other staff from InnoForESt partners from the relevant countries, capable of reading policy documents in the respective languages, were asked to code the documents following a specific coding scheme and submit this information via a web-based tool (Webropol; <https://webropol.com>) by filling in a standardised questionnaire. In addition, the importance of factors were to be weighted, direct quotes could be attached and the analyst's own interpretations could be added.

3.5.2 Design

For being able to fulfil this task, a close collaboration with the InnoForESt members who assessed and coded the policy documents was essential. Given the heterogeneity of the documents concerning setup and language as well as the broad disciplinary background of the InnoForESt members, training was needed beforehand. To increase inter-coder reliability and streamline with other InnoForESt activities, the coding platform was developed in an **iterative process allowing several rounds of commenting** by the project partners **in a face-to-face meeting, over Skype, and via email**. The iteration aimed at providing a common ground for the final coders and addressing potential uncertainties regarding how innovations, actors and governance could be categorized. The **country team members** who coded the policy documents **were instructed** to use the document analysed as their starting point and to only include observations from the documents, refraining from any personal knowledge or opinions.

For calibrating the coding, **several sets of collective coding sessions** were organised, and a **manual with examples** to support grading and extracting excerpts was supplied. This **comprehensive manual** (see InnoForESt Deliverable 2.2, Varumo et al. 2019, Annex 2) was developed to aid and standardize the document analysis and coding via Webropol. The aim of the comprehensive manual was to provide explanations to all coding items and the formulation of the questions, clarifying key terms, such as 'innovation' or 'rights'. The manual also contained instructions on the order and ways to code and provided general advice and tips on using the survey tool. It was anticipated that documents might often not address the FES, innovation, or other inquired factors explicitly; thus, the manual includes examples of operationalisations and implicit mentions of FES, innovation, and other factors.

In addition to the manual, **interactive online video training sessions** for the InnoForESt members who would code policy documents with Webropol were organized. These sessions were **used to train and to calibrate the document analysis together** as a group. In this way, **three 2.5-hour sessions with similar content** were organised. The sessions included the introduction to the structure of the Webropol questionnaire, anticipating technical issues while coding, and a collaborative analysis of FES, wood, and bioenergy from the EU Forest Strategy.

The joint analysis of this EU Strategy helped calibrating answers and resolved uncertainties of interpretations. The results of the joint analyses were included in the instruction materials together with the manual (InnoForESt Deliverable 2.2, Varumo et al. 2019).

3.5.3 Lessons learnt

- For using the Webropol survey format for coding the policy document analysis, it is essential to coordinate, support, and calibrate the personnel to fill out the survey. It worked well, given that there were resources for coordination, support, and calibration. On average, it took 2 to 3 days for a person to analyse one policy document. The time needed was influenced by the length of the document, the language and the analyser's previous familiarity with it. People were encouraged to share their experiences on the analysis process via email.
- Various forms of training and assisting were needed to instruct coders (extensive manual, online meetings, assistance via email, etc.)
- A low level of expertise is required to do the analysis when following the instructions laid out in the manual.
- Based on the manual, further iterations of the questionnaire to analyse additional policy documents were straightforward and rather self-explanatory.
- A challenge of the method is calibrating the responses when several people are doing the document analysis. Even if you instruct people to respond only to the questionnaire based on the content of the document, previous knowledge will likely influence the interpretation.
- It was a challenge, for example, to weigh a FES, as analysts had to decide to 'compare to what'.

3.6 Training approaches for platform building and for InnoForESt platform users

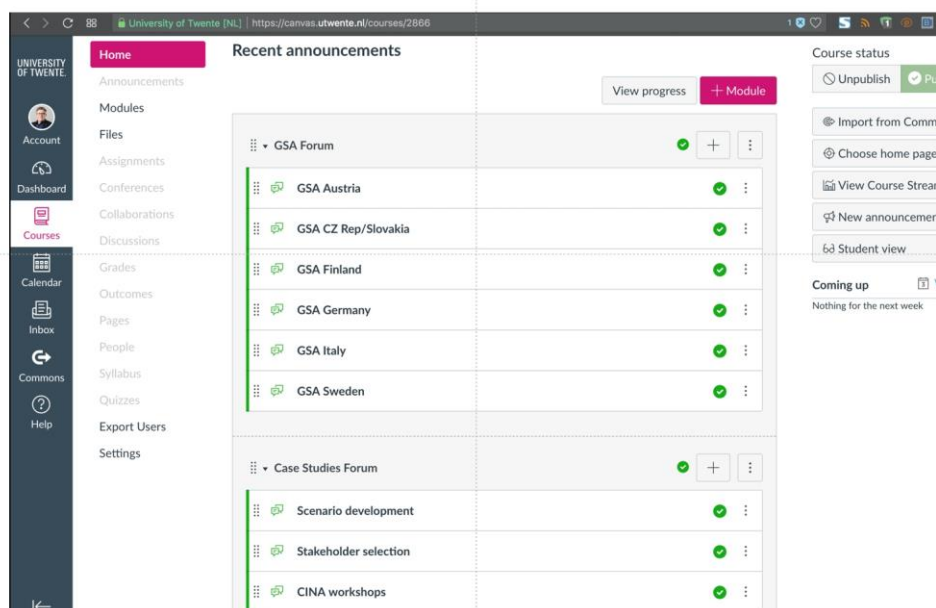
3.6.1 Objectives and context

The InnoForESt approach features meeting platforms in the real and in the virtual world that represent the work floor for innovation development. Both types of platforms offer spaces to meet, exchange, and work together in meetings, seminars, and workshops. First, the infrastructure in the respective IR constitutes the physical parts of the InnoForESt platform (see InnoForESt Deliverable 5.5, Aukes et al. 2020a). This includes a stakeholder interaction facilitator with an office space to work and meet with stakeholders, but also all formal and informal meetings. The local stakeholder interaction officer organizes and manages the network and workshop activities taking place in his/her IR.

Second, the InnoForESt website (www.innoforest.eu) essentially represents the digital platform. The website's protected section is exclusively accessible for project partners and allows for different types of knowledge exchange, for example, through fact sheets, blogs, etc. (Figure 7). Further connections to other digital platforms like OPPLA (<https://oppla.eu/>) are currently explored. Additionally, within the digital platform, each Innovation Region has its protected online space (subdomain) adapted to local needs. These local digital platforms support the facilitation of communication, the exchange of information, and the provision of updated details on workshops outcomes, as well as latest news and event announcements in the local languages. For example, at the digital platform of the IR Eisenwurzen (<https://eisenwurzen.innoforest.eu/>), stakeholders also presented themselves using a digital profile, which showed their name, company and address as well as their personal motivation to be part of the network.

Figure 8: Enabling digital communication platforms at the 2nd Consortium Assembly, Trento

What action is needed within the project?



3.6.2 Design

The physical platforms were established by the IR teams themselves, usually at a facility ‘belonging’ to the respective IR practice partner. Thus, there was no guidance or training needed and conducted to facilitate this process.

For the co-design of the digital platforms, a session at the 2nd Consortium Assembly in Trento in October 2018 was used to explore its potential basic features with the IR teams reflecting the concrete needs in the regions. Representatives from each WP and all IRs participated in this workshop-style session. Based on these inputs, a basic architecture was provided by the InnoForEST project.

The functions and use of these digital platforms were introduced through a webinar for all IR teams in May 2019. The introduction to the functions was recorded and the video⁵ shared with the IR teams. In addition, a factsheet on ‘Functions and use of the internal InnoForEST website and Innovation Region Digital Platforms’ was produced and distributed to all partners (InnoForEST Deliverable 5.5, Aukes et al. 2020a). Further, the contact to the web developer was provided as a first contact for further adapting the platforms to the needs of the IRs individually.

Four IR used this offer and established a digital platform for regional platform development. In some cases, websites operated by project partners were used instead to support the platform building related to the InnoForEST project (InnoForEST Deliverable 5.5, Aukes et al. 2020a).

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<https://www.dropbox.com/s/uhg5i2hyqoxvj3a/Intro%2520new%2520website%2520features.mp4?dl=1&sa=D&ust=1606335834362000&usg=AOvVaw2MJFqkwEHXnAfgaBjS6FTP>

3.6.3 Lessons learnt

- The use of physical platforms was very successful, due to their ‘location’ (i.e. mainly where the workshops and other meetings took place) within the practice partners facilities. Thus, a feeling of ownership was established right from the beginning.
- The co-design process for the digital platform should have started early in the process, and perhaps focussed on those IRs that needed it the most. Further, many IRs already had their running digital web infrastructure already known and recognised as a point of reference by stakeholders. The InnoForESt digital platform was thus more perceived as a project identification product as one of the Innovation Regions themselves.

3.7. Training approaches for Socio-ecological-technological forest innovation systems analysis (SETFIS)

3.7.1 Objectives and context

In order to facilitate the socio-ecological-technological forest innovation systems analysis (SETFIS), a manual was developed. It explains the operationalisation of this analytical framework within the InnoForESt context in order to identify influencing factors and how it can be used as a complementary tool for better understanding of governance innovation situations (comparable to action situation as conceptualised by McGinnis & Ostrom (2014) in the IRs, but also within other forest-related contexts. One part of the manual provides an extensive list of questions, containing the most promising dimensions and factors extracted from literature as an orientation. This guideline also pointed to questions that could be chosen - or skipped - depending on the IR and governance innovation context applied to. Further, the manual provides a list of the defined system dimensions and related factors as well as columns to be filled in with information regarding a) the relevance of factors in a specific IR, b) their importance, and c) the direction of influence. This information was collected and stored by SETFIS users and served as a guideline for future analysis. It provides an important information basis for prototype development, prototype assessment, and for drawing policy and business recommendations. Feedback processes from its empirical application were expected to improve the understanding of governance innovation processes in the IRs and beyond.

3.7.2 Design

The SETFIS manual contained the following information (see InnoForESt Deliverable D3.2, Kluvánková et al. 2020):

Application of framework: First, the system dimensions, including factors and external influences, and in a second step the innovation process itself, need to be transferred into questions for the semi-structured interviews. A question catalogue is provided. Important to remember is the level of analysis and the current development stage during the interviews, because every single innovation level/stage requires a different data set, which needs to be considered. It is not mandatory, neither necessary, to ask or use all of the questions. Some may have already been answered by stakeholders within other activities and documents.

1. *Data generation:* Required data for framework application will be generated, for example, with help of semi-structured interviews, focus groups or workshops with stakeholders in Innovation Regions. The provided question catalogue should be seen as a supporting tool for upcoming workshops and interviews.
2. *Analysing and evaluating results:* Answers from the interviews need to be coded and analysed. The coded answers then have to be categorized to a specific valuation of dimensions/factors that has to be evaluated during the workshops and interviews.

3. *Translating results into future steps & preparation of an analysis:* The answers need to be translated into future steps for the respective stakeholders, and they also provide a useful analytical basis for practitioners. The analysis could deliver an overview on the factors that are developed well and the ones with potential to improve, as well as possible threats and opportunities in order to find options to upgrade the innovation or increase its resilience.
4. *Extracting crucial factors:* Results from the interviews may create/define crucial dimensions and factors, as well as new combinations for further development of the innovations in prototypes.
5. *Feedback for framework development:* Final results, new factors and factor relations shall serve as a basis for prototype development. In addition, feedback shall be used to continuously improve and develop the analysis framework for future analysis.

3.7.3 Lessons learnt

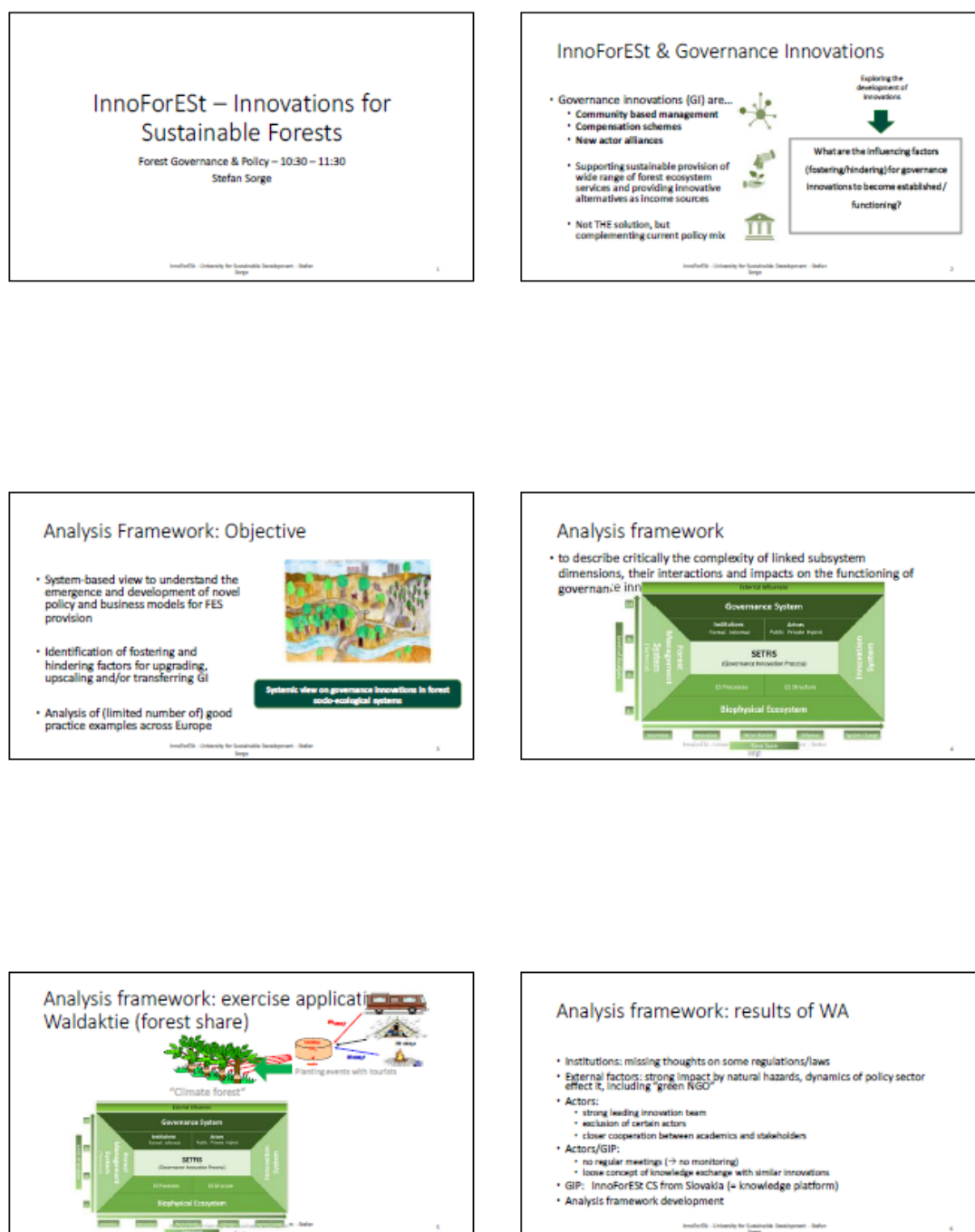
- In the InnoForEst project, interviews in five IRs were conducted by HNEE and one Innovation Region, CZ/SK, by CETIP due to language matters. Overall, we received positive feedback on the analytical framework and the manual. Few improvements were recommended, including factors and related questions that were too similar and that were combined. The same feedback was received from the IRs after an introduction of the objective, the procedure of the analytical framework, the interview and the analysis of the answers. Due to this deductive-inductive interplay process and participation of project members, the SETFIS framework and the manual itself were improved. Additionally, after the interviews, analysis of the interviews and feedback, 12 factors were added that had not been extracted from literature before.
- It is important to translate the results of the SETFIS analysis in concrete suggestions to improve the innovation development process, preferably at a CINA workshop, to motivate changes in course if necessary.
- During conferences and seminars, requests from scientists were less on the manual and its application within another context than on the conceptualisation of the SETFIS framework, additional factors, and on the overall methodology.
- It is important to communicate the ‘what’ and ‘why’ of SETFIS to the IR teams to make it more a tool that they can use themselves.

3.8 Teaching the InnoForEst approach

3.8.1 Stefan Sorge (at HNEE): Innovations for Sustainable Forests - Focus on SETFIS

Master programme Forestry System Transformation: Exercise on the Innovation Region Mecklenburg-Western Pomerania (Waldaktie/Forest Share). We explained the Master students the background, idea and operationalisation of the analytical framework and the students had to identify possible crucial influencing factors in the context of this specific Innovation Region. This short exercise showed the user friendly applicability of the framework and the holistic view gained on the Innovation Regions afterwards.

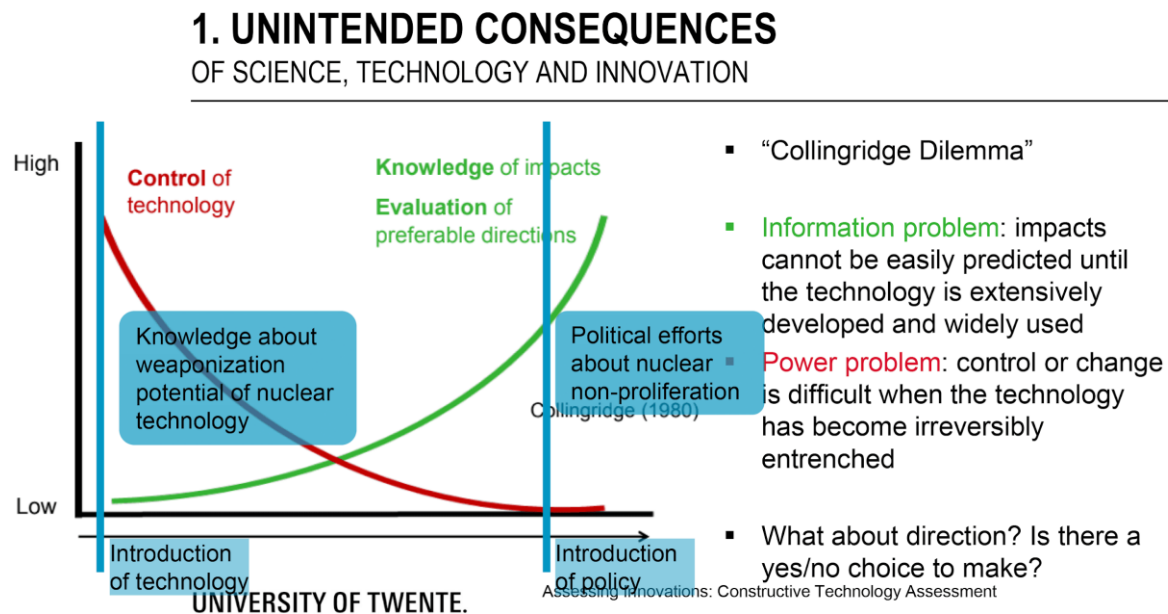
Figure 9: Presentation slides SETFIS presentation - Stefan Sorge at HNEE



3.8.2 Ewert Aukes (at HNEE): CINA in InnoForEST

In May 2019, a lecture and exercise was offered in the Module ‘Socio-technical system transformation’ in the master programme Forestry System Transformation. Under the label of ‘Approaches for Innovation testing’, the Constructive Innovation Assessment approach was introduced. Learning goals of the session comprised (a) an introduction to the CINA and its roots in Constructive Technology Assessment (CTA), and its critical juxtaposition vis-a-vis essentialist kinds of technology assessment; (b) an introduction to scenarios, their role and function within CINA (and CTA) as well as a methodology to construct them; (c) applying the acquired knowledge about scenarios to one of the InnoForEST Innovation Regions, i.e. the Mecklenburg-Western Pomeranian Waldaktie.

Figure 10: Presentation slide detailing the 'Collingridge Dilemma' - Ewert Aukes at HNEE



The lecture began with a discussion of why we should assess science, technology, and innovation in the first place. This linked to the societal realization (and subsequent social-scientific reflection, cf. Ulrich Beck) that many of the environmental disasters that had occurred, for example, after World War II are instances of societal risk, often initially invisible. CTA (and CINA) along with other forms of technology assessment present the possibility of gauging the impacts of a technology before it is actually applied. Based on insights from innovation studies (i.e. Collingridge dilemma, Multi-Level Perspective, bridging events between enactors and selectors of innovations), this leads to the necessity of developing plausible scenarios that depict “where the future may go” (see Figure 11). During the session, definitions of the concept ‘scenario’ were illustrated with previous scenario elaborations. For the exercise, the students had to develop scenarios for the Waldaktie innovation according to a 7-step scenario methodology that was introduced. Towards the end of the session, the students presented their scenario ideas and an open discussion ensued about the implications of scenarios (see Figure 11). With few alterations, especially pertaining to a translation to a virtual format due to the Covid-19 pandemic, the session was offered again in May 2020.

Figure 11: Presentation slides detailing the in-class assignment concerning scenario development - Ewert Aukes at HNEE

HANDS-ON ASSIGNMENT 1

1. Develop an interesting innovation for Waldaktie in terms of forest ecosystem services
2. Compile elements in the situation that seem useful for your innovation
3. Think of MLP-type developments that may influence your innovation

- ~ 20 minutes
- Use provided material and background knowledge (i.e. Stakeholder analysis + Governance Situation Assessment)
- Additional information Waldaktie: <http://www.waldaktie.de/>

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HANDS-ON ASSIGNMENT 2

1. Pick up your innovation from Assignment 1
2. Develop 1 scenario working through the scenario methodology (see scenario methodology lecture)
3. Focus on steps 3, 4, 5
 - STEP 3: Strategic space (main driving forces & uncertainties)
 - STEP 4: Uncertainty / relevance matrix
 - STEP 5: Scenario plots
4. Pitch your scenario to the whole group
 - ~ 20 minutes
 - Max. 5 minutes pitch

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3.8.3 Peter Stegmaier (at UT): CINA

CINA was taught in the course Deliberative Governance of Knowledge & Innovation (see Figure 12 below, the green text), part of the Science & Technology Profile of the Master's program in 'Public Administration' (PA) and as an optional course in the Master's 'Philosophy of Science and Technology' in Society (PSTS). The students learned and worked on the basis of examples from the InnoForEst project.

They each developed a series of workshops for topics that they were currently working on for your master's theses, thus taking up the multi-phase approach of CINA, as it was developed for InnoForEST (cf. InnoForEST Deliverable D5.3, Aukes et al. 2020c). A bachelor thesis of a guest in the master's program was also written in this sense (van der Neut 2020).

Figure 12: CINA as part of the course Deliberative Governance of Knowledge & Innovation - Peter Stegmaier at UT

Deliberative Governance of Knowledge & Innovation

Draft, as of 3 February 2020

Classes, Dates	Topics in class at home	Exercises in class at home
Class 1a 05-02-20	Introduction, organisational issues Discussion of trial research topics, sites, focus	Q&A in class (oral) Decision on trial research topic
(06-02-20)	Preparation time for students	Develop trial research topics for yourselves Familiarisation with course plan, in anticipation of what you would need to know with regards to your trial research topics
Class 1b 12-02-20	Deliberation, Participation, and Policy Analysis	Q&A on texts from reader (written)
Class 2a 13-02-20	Doing exploration, observation, interpretation I	Q&A on texts from reader (written) Hands-on exercises: observation
Class 2b 24-02-20	Doing exploration, observation, interpretation II	Q&A on texts from reader (written) Hands-on exercises: interviewing, moderation
Class 2c 25-02-20	Doing exploration, observation, interpretation III	Q&A on texts from reader (written) Hands-on exercises: interpretation, data analysis
Class 3a 02-03-20	Conceptualising frame analysis, by Dr Aukes	Q&A on texts from reader (written) Q&A in class (oral)
Class 3b 05-03-20	Doing frame analysis for CTA/CINA and STIR, by Dr Aukes	Hands-on exercises: frame analysis
Class 4a 11-03-20	The CTA/CINA approach: Constructive Technology/ Innovation Assessment	Q&A on texts from reader (written)
Class 4b 12-03-20	Doing CTA/CINA I	Hands-on exercises: assessing the innovation situation Preparing for a CINA action: exploratory innovation assessment (homework)
Class 4c 18-03-20	Doing CTA/CINA II	Hands-on exercises: building scenarios Preparing for a CINA action: exploratory innovation scenarios (homework)
Class 4d 19-03-20	Doing CTA/CINA III	Hands-on exercises: planning a workshop Preparing for a CINA action: exploratory workshop sketch (homework)
(25-03-20)	Preparation time for students	Developing a deliberation project idea
Class 5a 26-03-20	Socio-Technical Integration Research (STIR), by Dr Fisher (in direct broadcast from Arizona State University)	Q&A on texts from reader (written)
Class 5b 01-04-20	Doing STIR, by Dr Fisher (broadcast)	Hands-on exercises: t.b.a.
Class 6 02-04-20	Wrap-up, discussion of deliberation projects ideas	Hands-on exercises: project clinic
(17-04-20)		Final assignment: deliberation project idea outline

The communication of CINA to students **differs** mainly from the professional practice partners in that the former are more open because they have even less developed their own routines. They are also not tied to FES governance, which means that there is a broader diversity and key questions can be made very clear from the contrast. When students are motivated, it is easier for them to think out of the box - they are less subject to constraints that the practice partners are exposed to. On the other hand, the latter have acquired a great deal of specialist knowledge, which in turn leads to much deeper-rooted and more mature considerations of how one can involve the stakeholders and have to consider the innovations.

3.8.4 Christian Schleyer (at UIBK): InnoForEST and innovation ideas in the Innovation Region Eisenwurzen

In May 2020, this lecture was given to students in the master program 'Global Change - Regional Sustainability' at the University of Innsbruck in a course on 'Space and Region in the Context of Global Change' (in German) that focussed on biosphere reserve as model regions for sustainable development. Here, InnoForEST approach was introduced, yet the main part of the presentation focussed on the Austrian IR Eisenwurzen and the need for governance innovations with respect to FES provisioning, and the scenarios and options discussed at and between the CINA workshops.

Figure 13: Slide introducing the three innovation ideas discussed in the IR Eisenwurzen - Christian Schleyer at UIBK

Drei Innovationsideen

- a) Möbel, Design & Region
- b) Mobile Holzhäuser & Tourismus
- c) Wald & Holz erlebbar machen



25. Mai 2020

VU Raum und Region



InnoForEST

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4. Conclusions and Outlook

The general coordination was effective and smooth, and a set of coordination processes was established to promote mutual exchange during the project. However, what one should pay more attention to in future projects is more **training in methods** (e.g., stakeholder interaction and strategic data collection of these interactions) **and skills** (non-scientific communication, networking, team building, ability to play the role of change agent). Here, the broad range of methods offered - although not 'requested' - and the tasks to be carried out in the IRs and by the IR teams was perceived as overwhelming by some IR teams. Focussing on fewer methods and tasks may have allowed for more in-depth training in those.

IR teams used and 'owned' the InnoForEST approach and the related tools and instruments in a quite different way: some really pushing, proactively using them and asking for 'help', i.e. training, and thus being 'in charge'. Others, however, felt that these tools/instruments were imposed on them, thus being reluctant to really get familiar them and with carrying out a respective method themselves.

Further, one should not consider it self-evident that the scientific and practice partners would be able to lead group processes, be it to moderate workshops or to motivate and mobilise stakeholders, to organize initiatives and to develop independent projects, initially with help of the project and then even without the project would continue the initiative. This is a typical phenomenon and challenge in transdisciplinary projects, yet is seldom sufficiently anticipated and addressed in the composition of the research team and in the project design. Thus, a stronger focus on enabling, i.e. training, scientists and practitioners to work in a transdisciplinary way is strongly recommended for future projects.

InnoForEST project members will certainly use the InnoForEST approach, its related methods and tools, as well as the findings for continuing teaching (young) academics. Yet, also practitioners can learn from the experiences gained in InnoForEST and from the opportunities and challenges of applying the respective approaches, methods, and tools. For that purpose, target-group specific training formats - based on the training approaches used during the project - will be developed including webinars, three-day training courses, or a week-long Summer School. Depending on the targeted audience and participants of these training events, the stage of the innovation process (if already known or identified), and the format (e.g., webinar, three-day training course) lecturing elements are combined with various forms of interaction (e.g., group work developing brief narratives for possible innovation-related scenarios; carrying out short RGBs; etc.).

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