Report on Cross-Case Learning Workshop

DELIVERABLE 5.4

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ACKNOWLEDGEMENT

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1. INTRODUCTION

BONUS MIRACLE is a three-year EU-funded research project led by Linköping University that brings together 11 partners from Sweden, Latvia, Poland, Germany, and Denmark. The overall aim of the project is to enact a social learning process that will lead to the identification of new governance configurations to reduce nutrient enrichment and flood risks in the Baltic Sea Region (BSR). The project brings on board a diverse set of stakeholders that have key issues interconnected with nutrient enrichment. It draws on insights emerging from the four case studies, including Berze (Latvia), Reda (Poland), Selke (Germany) and Helge å (Sweden) to develop recommendations on innovative governance configurations that support the provision of multiple ecosystem benefits at the local level and nutrient governance at the BSR level whilst acknowledging future uncertainties in the region.

To enable this, MIRACLE creates a forum to support dialogue and interactions between project researchers and stakeholders as well as among stakeholders from different sectors in all the four case areas. The point of departure is that co-enquiry processes facilitated by social learning can transcend sectoral silos, societal domains and national states to move away from one-dimensional political narratives, to allow for the multiplicity of perspectives manifest in the local contexts, as argued in MIRACLE Deliverable 5.3. The figure below (Figure 1) depicts the social learning process embedded in the implementation of the MIRACLE project.
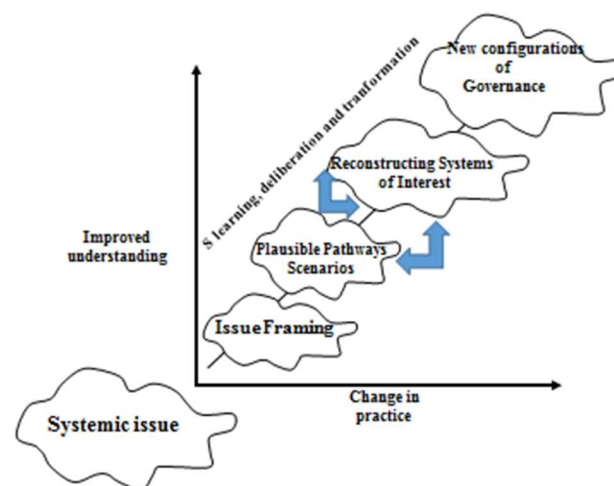
Figure 1. Process for a stakeholder driven implementation of MIRACLE in each case study area

As part of the social learning process enacted within MIRACLE, a *Cross-case Learning Workshop* was held on 21-22 September 2017 in Norrköping, Sweden. By bringing together stakeholders from all the four case areas, the workshop aimed to enable co-learning across the cases, and identify to what extent governance approaches in case areas can be adapted to improve the effectiveness of policies and governance of nutrient

management delivering multiple ecosystem services benefits. In particular, the workshop set out to address the following questions:

- What can we learn from the pathways that were developed in each of the case areas regarding opportunities and barriers for providing multi-functional ecosystem services?
- What would be required to adapt governance approaches in the four case areas?

This report presents the objective and rationale for the process design, summarises the results from the discussions and offers some reflections and lessons learned in terms of supporting the social learning process in this workshop.

2. METHODS

2.1. Rationale for the process design

Distributed leadership in design for learning

Leadership in the process design of the workshop was relatively distributed among researchers responsible for Work Package 5 and other researchers in the project, especially those who had established working relationships with stakeholders from the four case settings. It is in line with the concept of "distributed leadership", which is defined as "emergent property of a group or network of interacting individuals" according to Bennett et al. (2003:7). This type of leadership is enacted by groups and within groups, rather than by individuals acting out their hierarchical roles by providing "top-down" guidance and instructions. It stems from the notion that concerted action through interaction between individual interests and capacities can produce outcomes that go beyond what can possibly achieved by individuals alone. Distributed leadership puts an emphasis on collaboration, knowledge exchange, shared purpose, and especially shared ownership among those participating in the process (Davison et al., 2013; Lefoe et al., 2008). In light of this, we argued that embarking on this form of leadership could facilitate social learning, which is the essence of the MIRACLE project.

First and second-order design

In considering the process design for the cross-case workshop, we embraced the second-order design perspective advocated by Ison et al. (2007) and Blackmore et al. (2016). First-order design embodies "hard systems" approaches, or goal-seeking norm, "blueprint" thinking where control is considered possible. Second-order design is characterized by consideration of context, the designers or practitioners and their history in the design process. According to Ison et al. (2007), second-order logic in the design of learning systems shifts away from delivery of output (first order logic) to delivery of performance, moves beyond the capacity to reproduce knowledge (first order logic) to the capacity to appropriate and embody it, thus to comprehend it. Blackmore et al. (2016) and their experiences in the CADWAGO project further lends credence to our chosen approach.

Here they argue that the second-order approach underpins design for learning, where emphasis is put on contextualization, facilitation, co-production of knowledge and reciprocity rather than teaching and sheer transfer of content and knowledge. In this respect, it is consistent with our conceptualization of social learning in the MIRACLE project and considered useful to deal with the context of water governance, which is often characterized by uncertainty and controversy (Powell et al., 2017).

Key design principles

In order to foster social learning, we set out to enact three key design principles in the design of the cross-case workshop.

- **Principle 1:** Deployment of the systemic issues (emerged from the MIRACLE's case studies) to support emergence of a platform where (i) co-learning is possible which is grounded in practice or action, and (ii) different interests can contest, deconstruct, and reconstruct new common visions and plans (Powell and Toderi, 2003).
- **Principle 2:** Participatory design for learning to enable multiple perspectives on relevant issues and develop joint contributions (Blackmore et al., 2016).
- **Principle 3:** Designing an enabling environment for cross-case learning among stakeholders from the four case areas, and co-production of knowledge by both researchers and stakeholders.

Tools and techniques

The systemic nature in our approach to process design also called for the employment of tools and techniques that would facilitate the participants in interacting with first-order data generated through modelling and cost-benefit analysis, recognizing multiple causes and interests, identifying conflicts as well as possible synergies across multiple levels and scales (Blackmore et al., 2016). The following table (Table 1) shows a brief description of the tools and techniques developed by different work packages within MIRACLE, which we aimed to use to facilitate co-learning in the cross-case workshop.

Table 1. Tools and techniques used in the cross-case workshop

Tool & Technique	Description
Interactive Cost-Benefit Analysis tool (Work Package 3)	An Excel spreadsheet allowing participants to make qualitative judgements about the multiple ecosystem service benefits of the development pathways, thus evaluating the performance of the different pathways in their local contexts.
Visualization tool (Work Package 2, 3, 4)	An open-access web-based visualization interface for the integrated analysis and communication of results from environmental modelling and socio-economic assessments, which will support social learning and contribute to dissemination. (See Neset et al. (2017) for more details)
Correspondence analysis (Work Package 5)	Scatter plots depicting the similarity and dissimilarity of stakeholders' perception of measures, and the similarity and dissimilarity of positionholders' level of agency in relationship to different measures and allowing for interpretation during stakeholder dialogue.

Part of the workshop was to be held in the Norrköping Decision Arena, a visualization platform that enables the illustration, comparison and discussion of various types of data to facilitate dialogues on data interpretation (Liu.se, 2017). It was envisaged that the visualization tool and the correspondence analysis would be presented in the Arena for greater interactivity with the participants. The setting of the Arena allows for simultaneous display of the research results from different case areas.

2.2. Participants

The workshop targeted the key stakeholders that have been part of the social learning process in each of the MIRACLE's case areas. Furthermore, in order to ensure a wide representation of different stakeholders, the participants were selected with consideration of gender, age, and affiliation to public, private and civil society sectors. The invitation process began with the case study leaders who have established close working relationships with the stakeholders in their respective case areas and thus were well placed to identify the suitable stakeholders to invite. In all cases, the invitation was extended via both email and phone. A participant invitation letter was provided to specify the purpose and agenda of the workshop (Appendix A).

In total, there were 28 participants at the cross-case workshop, representing five different countries in the BSR, 17 different organizations, including academia, government agencies, private sector and research institutes. **Table 2** shows an overview of the stakeholder groups, organizations and countries represented by the workshop participants.

Table 2. Workshop Participants

Stakeholder Group	Organization	Country
Academia	Linköping University	Sweden
	Uppsala University	Sweden
	University of Copenhagen	Denmark
	Latvia University of Agriculture	Latvia
	University of Latvia	Latvia
Government Agency	Latvian Environment, Geology and Meteorology Centre	Latvia
	Ministry of Environmental Protection and Regional Development of the Republic of Latvia	Latvia
	Starostwo Powiatowe w Wejherowie	Poland
	Institute of Meteorology and Water Management – National Research Institute (IMGW-PIB)	Poland
	Swedish Meteorological and Hydrological Institute (SMHI)	Sweden
	Osby Municipality	Sweden
	Salzlandkreis Department of Nature and Environment	Germany
	Johann Heinrich von Thünen Institute (Federal Research Institute for Rural Areas, Forestry and Fisheries)	Germany
Private Sector	Regito AB	Sweden
	Södra	Sweden
	POMINNO	Poland
Research Institute	Stockholm Environment Institute	Sweden

2.3.   Workshop format

The two-day workshop comprised introduction, presentations and two interactive parallel working sessions, of which one was held in the Norrköping Decision Arena. The working sessions were designed to encourage participants to exchange knowledge and understanding across the four cases, offer critical reflections on the project results via the deployment of the cost-benefit analysis tool, visualization tool and correspondence analysis. The following table (Table 3) presents the workshop's schedule of activities.

Table 3. Workshop's Schedule of Activities

Time	Session
21 September 2017	
12.00	Registration and lunch at the Norrköping Visualization Centre
13.00 – 14.00	Introduction to the MIRACLE project and the cross-case workshop
14.00 – 17.00	Parallel sessions to share and discuss the results of modelling and cost-benefit analysis from each of the case areas (including coffee break)
17.00 – 18.00	Synthesis
19.00	Dinner
22 September 2017	
08.00 – 08.30	Review of the conclusions from Day 1 and introduction to Day 2 agenda
08.30 – 09.30	Presentation of the results of assessment of institutional settings and governance arrangements in case areas
09.30 – 11.30	Parallel sessions to discuss options for strengthening and adapting policies and governance configurations in case areas (including coffee break)
11.30 – 12.00	Synthesis and conclusions
12.00	Lunch at the Norrköping Visualization Centre & Departure

3. RESULTS AND DISCUSSION

3.1. Outcomes from the cross-case workshop

Key points from Day 1

Day 1 started with a brief introduction to the MIRACLE project as well as the purpose and agenda for the two-day workshop, presented by *Karin Tonderski, Linköping University,* the MIRACLE project coordinator. During the introductory session, the main message was that the BSR faces both socio-economic and climate change related uncertainties. Furthermore, the diversity of the overall policy and institutional framework in the region adds to the complexity of the regional water management challenges. Innovative ecosystems services governance approaches were proposed as a means to overcome these challenges and adapt to an uncertain future. The MIRACLE project has provided such possibility to further examine and compare the issues in each of the case study areas across a mosaic of social and geographical contexts. This, in turn, provided the basis for adaptation of the governance approach pertaining to multifunctional ecosystem services. It was envisaged that this cross-case workshop would enable learning from the different pathways that were developed for each of the case studies in order to get a better understanding on what would be required for the adoption of the aforementioned multifunctional ecosystem services governance approaches.

One of the main concerns raised during the parallel sessions regarding the modeling and cost-benefit analysis results was the capability to implement the chosen pathways in real-world settings. In the Decision Arena discussion, participants from Selke and Berze cases suggested that the pathway including the use of buffer strips as well as reducing the use of fertilizers by 20% would be very hard to implement without adequate incentives, because very often farmers do not prioritize ecological outcomes. Furthermore, in the case of Selke (Germany), it was pointed out that farmers will be unwilling to give up their land for buffer strips due to the higher economic incentive for growing maize, coming from EU subsidies. In the case of Berze (Latvia), it was also mentioned that they have knowledge regarding how some measures are implemented in other countries in the region, but they lack specific information when it comes to the application and feasibility in Latvia; a topic for further research. The participants, despite their concerns regarding bridging theory and practice, stressed that the visualization platform could serve as a valuable tool to raise awareness in dialogues with local stakeholders (farmers) in order to identify jointly the most effective pathways at the local level.

The discussion from Helge å and Reda cases surfaced another important concern - the limitation of the modeling in relation to local needs of decision support. In Helge å, for example, brownification was identified as the systemic issue, however since quantifiable causal relationships have not been established, it cannot be modeled with a reasonable level of certainty using the HYPE model. Therefore, further research is needed to establish an understanding of the processes leading to brownification of surface water. This is a basis for assessing the effectiveness of potential measures targeted for brownification, and their interconnections with other targets such as phosphorous and flooding. In the

Reda case, it was highlighted that nutrient emissions are not the primary concern and that the main interest is in looking into alternative ways of reducing flood risks.

To finalize, except from expressing the concern that some of the pathways are good in theory but will be hard to execute in practice, another weakness that was pointed out is that there is no clear assessment of whom will carry the costs and the benefits of the pathways. This calls for the need to address the assessment more explicitly in the social learning process. Furthermore, the high opportunity costs are also seen as an obstacle for changing land use into more ecological practices. Therefore, the question of funding needs to be addressed. Public funding is currently not sufficient, suggesting that there needs to be a mixture of public and private funding because voluntary measures without adequate incentives for the provision of ecosystem services will not provide for the wanted outcomes.

Key points from Day 2

The workshop on Day 2 started with an assessment of the effectiveness of existing policies and governance structures in terms of delivering multiple ecosystem services benefits at the local level and nutrient management at the BSR level, presented by *Andis Zilans, University of Latvia*. After that, the plenary was divided into two parallel working groups: one group focused on discussing the barriers and possible solutions for more integrated governance configurations, and the other focused on the level of interests and agency of different stakeholders in the water governance regimes in the case areas. After the first hour discussion, the two groups swapped their topic.

Discussion on integrated governance configurations

The first discussion on governance by Helge å & Selke stakeholders resulted in conclusions regarding current barriers and possible solutions for more integrated governance approaches. The following barriers were brought up:

- Existence of incoherence and complexity of rules that land managers need to take into account (difficult to understand what is being asked of land managers and why);
- Lack of acknowledgement and incorporation of knowledge and ideas of land managers in current measures/ schemes – space and flexibility needed to enable this;
- Sectoral focus and scope of measures limits effectiveness, e.g. while measures can be implemented on agricultural/ farm land, forest land is not eligible. Forest policy, in contrast to agriculture, is not an EU competence, but national competence.
- Voluntary agri-environmental measures in intensive areas are: 1) too time-consuming to be considered viable within overall farm management decisions; 2) compete with larger direct payments;

- Lack of recognition of key problems (e.g. sewage treatment plant in Helge å where a new problem emerged over the last few years (ammonium), but the new problem is not recognized and even ignored by existing regulations according to one of the Helge å stakeholders).

Possible solutions discussed within the same group are as follows:

- Providing support to "champions" in order to foster bottom-up approaches and integrate stakeholder interests;
- Generating common objectives at the very outset including consideration of economic interests of land managers;
- Different views of property rights might be needed (in particular in intensive areas) linked with stricter enforcement of existing laws;
- Targeting greening to achieve key environmental benefits.

The second discussion on governance by Berze and Reda stakeholders resulted in the following barriers:

- The water management company created in Reda with land managers, which is responsible for the management and implementation of measures:
  - o established via national water law;
  - o governmental sources of funding, but the main funding source is a fee collected from land managers (all land managers in the area covered by the water management company);
  - o eligibility for RDP funding remains unclear;
- In the Berze case, such joint management company does not exist. Responsibilities are allocated to private landowners (for private land) and municipalities and the state for public land. Funding for the implementation of specific measures on private land is provided to land owners (e.g. sedimentation ponds).
  - o The effectiveness of the measures is not evaluated yet in Latvia, although the selection of measures is based on experiences with different measures in other countries;
  - o The measures are spatially targeted towards nitrate-vulnerable zones (NVZs) and water bodies at risk of not achieving good water quality status;
  - o The funding is mainly through RDP;
  - o The environmental sector (Water authority) is consulted on proposed RDP measures late in the planning process when decisions on funding allocation have already been made.
- Fear of land owners that designation of land for environmental measures restricts land use in the long term, while financial support to offset restrictions is only available in the short term (Berze and Reda);

- Overall shortage of funding affects allocation for environmental purposes – lower priority in budget allocation (Berze).

The following possible solutions were discussed within the group:

- Exchange of private and public land. This has a limited potential in Berze due to small share of public land. Further investigation is also needed on how the governance arrangements of land exchange would be designed but is worthwhile as a recommendation for further examination by researchers in the MIRACLE project and the stakeholders (Reda);
- Model-based implementation of measures to improve and ensure effectiveness. It would also address existing difficulties and complexities in monitoring of measures;
- Pilot testing is questioned as a factor of success. There is a need to introduce temporal dimensions in the conceptual framework of factors of success.

Discussion on the interests and agency linked to different measures

The discussion on diverging interests and agency of different stakeholders was triggered by the correspondence analysis that was run based on the datasets constructed by the case leaders in respective case areas. Below are some of the key insights generated during the discussion.

For the Reda case, the ordination plots depicted a generally good overview of the situation in the catchment (see Figure 2). It was observed that soil liming and catch crops are situated rather far away from the majority of the stakeholders on the ordination plot, but are relatively close to the agricultural organisations and farmers. This indicates that these measures have mainly impacts for agriculture, but not much on the systemic issue - flooding, hence resulting in a lower interest from other stakeholders. Another observation was that the fish industry and angling association were disconnected from the main cluster of stakeholders, suggesting that their interests to a large extent diverge from the rest.
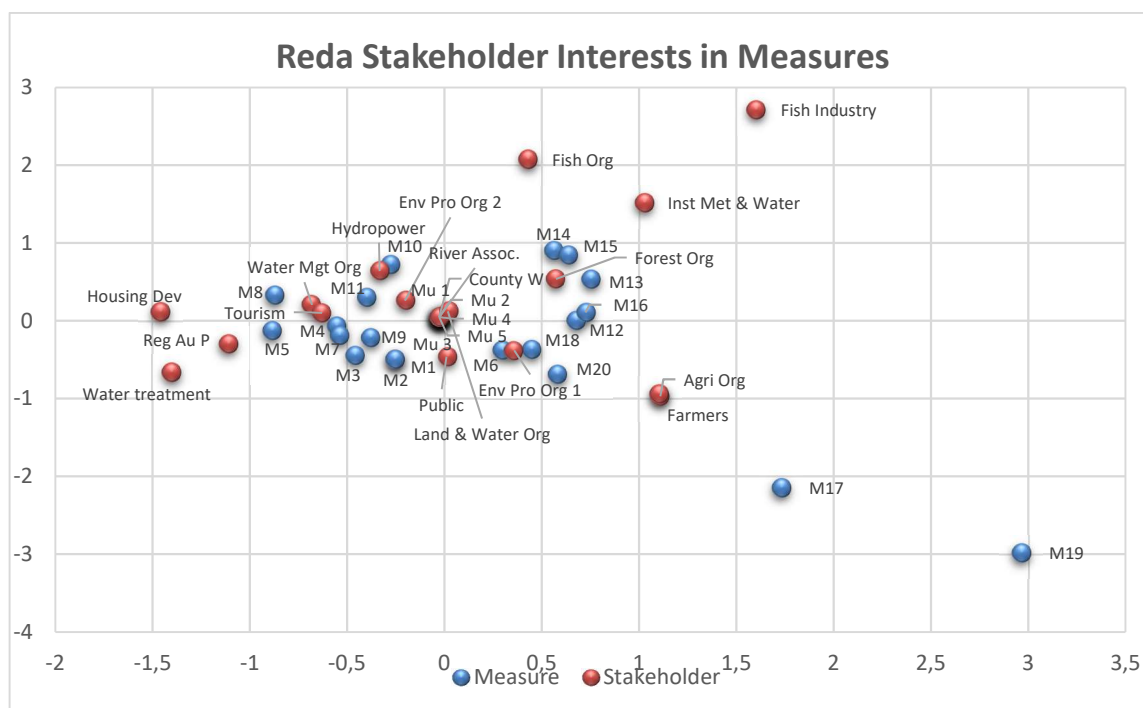
Figure 2. Stakeholder Interest in Measures in the Reda case study (also see table 4)

Table 4. The measures considered in the Reda Case

Measure	Description
M1	Wastewater infrastructure - Small WWTP
M2	Wastewater infrastructure - Septic tanks
M3	Wastewater infrastructure - Sewerage
M4	Hydrotechnical infrastructure - Flood protection
M5	Hydrotechnical infrastructure - Storm sewerage
M6	Standard agro-environmental measures
M7	Urban planning
M8	Tourist/Recreational areas
M9	Flood protection infrastructure
M10	Open Small urban retention infrastructure
M11	Closed Small urban retention infrastructure
M12	Wetlands
M13	Diffused wastewater
M14	Large reservoirs
M15	Small rural retention infrastructure
M16	Floodplains
M17	Soil liming
M18	Greening
M19	Catch crop
M20	Buffer zones

For the Berze case (see its ordination plots in Powell et al., 2017), it was shared that the availability of funding for different measures might dictate their interests in certain measures. As the wastewater treatment plants were renovated a few years ago, the stakeholders saw no funding possibilities for further upgrading of the wastewater treatment plants in the near future. Even if they are interested in this measure, they are concerned about the lack of funding for it. The installation of fish migration pathways is

also a measure that is disconnected from the rest of the measures on the ordination plot, as it is still under discussion. It is perceived to be good for the ecological status of the river but is currently faced with resistance from the hydropower sector. On the contrary, the agriculture organisations displayed similar views in terms of their interests and level of agency on the plots. It was explained that they signed an agreement with one another regarding the agricultural measures and thus become a tighter group with consensus on those measures in order to get funding for the implementation.

It was argued from the Reda stakeholders that looking at the availability of funding is the business-as-usual. They suggested looking into what measures are the most effective and need to be implemented first, then figuring out how to find funding for those measures from different sources, such as EU, national funding, or local funding sources. Furthermore, unlike Berze, the stakeholders from Reda have a tendency to show different perceptions and conflict of interests even if they are similar organisations with supposedly similar interests.

For the Helge å case (see its ordination plots in Powell et al., 2017), biomanipulation (i.e. removal of fish from lakes) is positioned as an outlier on the ordination plot. The reason could be that it was introduced rather late into the discussion when new stakeholders were brought on board. According to them, this measure has been very efficient for one lake. It was also shared that there has been a conflict between the fish organisation and the municipalities in terms of fish production as currently the fish organisation only allows the municipalities to fish with commissions. Creation of alder swamp forest was also mentioned during the discussion and according to the stakeholders from Helge å, it is being promoted especially by Hässleholm municipality. Furthermore, it was discussed that the holiday houses are not connected to a central wastewater system and that they have to pay individually for upgrading on-site treatment system, which can be costly.

For the Selke case (see its ordination plots in Powell et al., 2017), there was a discussion on the dismantling of weirs to create migration routes, creation of bypass options, as well as on buffer strips. According to the stakeholders, there is no instrument in the federal law concerning the implementation of buffer strips, meaning there is no penalty for not implementing it. Another remark on the ordination plots were the different positions of two Nature Protection organisations from two different counties (Natu Pro H and Natu Pro S) on the interest plot. The stakeholders from Selke believed that they should be closer to each other as they have similar interests and should be positioned closer to water measures. This calls for a revision of the input into the datasets used to create the ordination plots.

3.2.   Reflections on our design for learning and social learning process

In this section, we reflect on our process of design for the workshop and the degree to which the design principles were adhered to and what insights emerged from the use of tools and techniques to support a social learning process.

Our design for learning process

Applying distributed leadership in the design process was considered a pragmatic and fairly effective approach in order to foster collaboration and arrive at concerted actions that reflected a shared purpose and shared ownership among researchers from MIRACLE's different work packages and disciplines, i.e. social science, hydrology, economics and policy. In this regard, it was found to be coherent with MIRACLE's interdisciplinary approach. It can be said that the distributed leadership model helped, to some extent, break down both hierarchical and disciplinary barriers between project members, encourage not only creative solutions but also courage in leading changes. In addition, it diminished the pressure on the project coordinator and Work Package 5, while increased active participation from other work packages. Some of these findings are consistent with those of Davison et al. (2013), who put forward the idea that boundaries of leadership should be inclusive rather than exclusive.

Nevertheless, the distribution of leadership proved to be rather challenging during the design process leading up to the organization of the cross-case workshop. When the researchers from different work packages embarked on this process, their diverse interests and practices encountered each other. It led to what Wenger et al. (2014) describe as "a landscape of practice, consisting of a complex system of communities of practice and the boundaries between them" (Wenger et al., 2014:13). Consequently, it required considerable negotiation and deliberation over different elements of the workshop, ranging from content, methodologies, and facilitation to venue set-up, and logistical arrangements. More than once, it was noted that friction was borne regarding which work package should have a larger "stake" in the workshop, whose interests should be attended to. Another challenge with the distributed leadership approach was that there were sometimes unclear division or overlaps in terms of roles and responsibilities, which arguably resulted in the fact that some project researchers found it difficult to navigate in this environment. On the other hand, it had some important implications for the role of the researchers. It required the researchers to develop adaptive capacity to be able to operate at different levels or scales and at different times throughout the process. This is found to be in line with Blackmore et al. (2016) who advocate the need for building adaptive capacity for water governance transformation.

Adherence to our design principles

In order to support the social learning process, we set out to enact three key design principles: principle 1 on deployment of the systemic issues to support a co-learning platform, principle 2 on participatory design and principle 3 on designing an enabling environment for cross-case learning and co-production of knowledge. These principles are consistent with the second-order design logic, which highlights the importance of contextualisation, facilitation and feedback as argued by Blackmore et al. (2016).

The deployment of the systemic issues was a rather disputable issue during the design process. Some researchers in the project expressed concern that the stakeholders attending the cross-case workshop might not be familiar with the systemic issues (in the case of Berze and Selke) as they were more of a theoretical concept developed by the MIRACLE researchers to guide their thinking but had not been validated with the stakeholders. This, however, proved otherwise in the case of Reda and Helge å, where flooding and brownification respectively were the systemic issues owned by the stakeholders themselves. After several rounds of deliberation among the researchers, the systemic issues were brought into the context immersion phase of the workshop, which was intended to assist the stakeholders in immersing themselves in the context of their systems of interest. The deployment of the systemic issues was found to be an appropriate design choice as it was observed during the workshop that the stakeholders re-iterated their systemic issues and offered critiques to some project results that fell short in addressing those issues (e.g. cost-effective analysis, modelling).

With regard to principle 2, the design process for the workshop was participatory in the sense that multiple stakeholders took part in the process. It was seen as a collective process that led to an "agenda for concerted actions" (Blackmore et al., 2016) and joint contributions to the preparation and organisation of the cross-case workshop. In addition, some evidence in the workshop suggested that multiple perspectives on relevant issues in the case areas were encouraged and appreciated to allow for co-learning to emerge.

In order to design an enabling environment for cross-case learning and co-production of knowledge (principle 3), we tried to move beyond formal presentation sessions to incorporate interactive sessions that were intended to stimulate dialogue in relation to the project findings and stakeholder concern. We found some evidence of this enabling environment in the cross-case workshop, which implies that we managed to enact principle 3 to some extent, though our success was still limited.

At the beginning of the workshop, most of the stakeholders expressed that they expected to come here to listen and learn, both from the researchers in terms of the project results and from other stakeholders. The presentations subsequently provided for a good context immersion, when the stakeholders were able to mentally transcend the physical boundaries of the meeting venue, to immerse themselves in their local contexts and systems of interest. At this point, it was observed that some of the participants started to ask questions and reflect on the data provided by the project. Data presentation was executed in a manner that the stakeholders could understand them and relate to their experiences in practice, which could arguably make a positive contribution to the discussions later on and the learning process as a whole.

The highest level of stakeholder engagement was seen during the break-up into group discussions. In general, the discussions showed that there was a relatively high interest in the topics that were brought up. The stakeholders were listening attentively to those coming from other case areas, engaged by posing questions to them, for example, about

experiences pertaining the implementation of certain measures or how some obstacles were overcome in other case areas. Furthermore, they became involved in discussion with the researchers by critically reflecting on the implementability of the different pathways projected by the MIRACLE project.

It was also clear during the workshop that the stakeholders wanted to engage in conversation and discussion with stakeholders from other case areas. Many of them stated that they were interested in sharing the problems and experiences from their respective case areas and thus, to learn from each other. As a result, they showed a willingness to collaborate and to understand the other stakeholders' perspectives. At several points during the discussion, the stakeholders, despite coming from the different case areas, came to agree that they were facing similar uncertainties and problems related to water resources management. This created a situation of better understanding, coherence and potentially trust among the stakeholders, since as the discussions were progressing; they became less reluctant to engage in it. However, one issue that appeared to hinder the stakeholders from actively engaging in the discussion (although to a small extent) was the language barrier and limited English proficiency of some stakeholders.

Facilitation plays an important role in supporting the emergence of a co-learning platform. In this workshop, a number of researchers who had much experience in facilitating stakeholder dialogues were placed in the role of facilitators in parallel group discussions. An external facilitator was also included to provide assistance to the facilitating researchers as well as to keep track of the overall workshop process with a neutral perspective. However, it was noted that the facilitation during the introduction phase was rather passive and did not stimulate the wanted engagement from the stakeholders. In the later stages of the workshop and in the group discussions, the role of the facilitators was more to navigate the discussion in the right direction, rather than to provoke for interaction. As the stakeholders grew more comfortable to engage in the discussions, the facilitators were there to ensure that all the stakeholders representing different case areas were given sufficient time and space as well as to provide some help with translation when it was needed.

Use of tools and techniques

The Decision Arena provided for optimal conditions to follow, compare and discuss the data provided by the researchers. It offered an ideal set-up to showcase the visualisation tool developed within the MIRACLE project. It gave the possibility to display the effects of different measures on the same screen and the results from different case studies on side-by-side screens at the same time. This was highly beneficial for the discussion as it made it easier for the stakeholders to grasp the implications of each development pathway and to compare those with the results from their case study. The roundtable setting of the arena also benefited the discussion as the participants could easily follow the conversation and each other's reactions. In addition, the size of the venue was good in terms of providing the needed comfort of small group discussion where most of the

stakeholders would feel more willing to voice out their comments and reflections on what was being discussed (see Figure 3).

Figure 3. Group discussion in the Decision Arena (Photo credit: Therese Ekstrand Amaya, Linköping University)

Correspondence analysis was another tool that was introduced to assist the stakeholders in reflecting on the implementability of different measures as well as their possible consequences, e.g. who are the beneficiaries, who are the victims. Overall, the use of the ordination plots resulted in a fruitful discussion with active engagement from all the stakeholders and researchers involved. The stakeholders did not only reflect on their own case study but also commented and posed questions related to the other case study when zooming into the depictions of the interests and agency in relationship to the different measures. It was generally agreed that the ordination plots were a good tool to stimulate discussions among the stakeholders. Yet, some of the stakeholder coding can be improved to better reflect the nature of the organisations, for example, a stakeholder code can be indicative of whether it is an NGO or a governmental agency.

The Cost-Benefit Analysis tool was found to be over-complex for the stakeholders. Despite its ambition to be an interactive tool, the interface and technical functions of the tool lacked user-friendly elements, which arguably hindered the stakeholders from experimenting on their own with it during the workshop. Instead, the researchers were left to explain and walk the stakeholders through different components of the tool. Nevertheless, it provided a good basis for the stakeholders to offer critique and validate the project findings in terms of analyzing costs and benefits attached to the different measures.

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5. APPENDIX

A Participant Invitation Letter

INVITATION

TO THE

BONUS MIRACLE CROSS CASE WORKSHOP

21-22 September 2017

Venue: Campus Norrköping, Linköping University & Norrköping Decision Arena, Norra Grytgatan 10, Norrköping, Sweden

The BONUS MIRACLE team of researchers from Sweden, Latvia, Poland, Germany and Denmark would like to extend this invitation to the upcoming cross-case workshop that will be held on 21-22 September 2017 in Norrköping, Sweden. Bringing together stakeholders from all the four case areas, the workshop aims to enable co-learning across the cases, and identify to what extent governance approaches in case areas can be adapted to improve the effectiveness of policies and governance of nutrient management delivering multiple ecosystem services benefits.

By means of interactive sessions, we will share and reflect on development pathways and research results for each of the four BONUS MIRACLE case areas, and jointly address the following questions:

- What can we learn from the pathways that were developed in each of the case areas regarding opportunities and barriers for providing multi-functional ecosystem services?
- What would be required to adapt governance approaches in the four case areas – Berze (Latvia), Reda (Poland), Selke (Germany) and Helge å (Sweden)?

Part of the workshop will be held in the Norrköping Decision Arena, where we will be able to explore case area results in visualization supported dialogues.

Preliminary Programme:

Thursday 21 September

12.00 Arrival and registration, lunch at the Norrköping Visualization Centre

13.00 – 13.30 Introduction

13.30 – 17.00 Parallel sessions to share the results from each of the case areas (including coffee break)

17.00 – 18.00 Synthesis

19.00 Dinner at Enoteket (close to the venue)

Friday 22 September

8.00 – 8.30 Review of the conclusions from Day 1 and introduction to Day 2 agenda.

8.30 – 9.30 Presentation of the results of assessment of institutional settings and governance arrangements in case areas.

9.30 – 11.30 Parallel sessions to discuss options for strengthening and adapting policies and governance arrangements in case areas (including coffee break)

11.30 – 12.00 Synthesis and conclusions

12.00 Lunch & departure

VENUE

Campus Norrköping, Kopparhammaren 2

Norra Grytsgatan 10a

Linköping University https://goo.gl/maps/ZdUbgCoDmNT2

TRAVEL

https://liu.se/en/article/visit-linkoping-university

(see Campus Norrköping)

SUGGESTIONS FOR ACCOMODATION

http://www.pronovahostel.se/en-GB

http://president-hotel-norrkoping.hotel-ds.com/en/

https://www.scandichotels.com/hotels/sweden/norrkoping/scandic-norrkoping-city

https://www.elite.se/sv/hotell/norrkoping/grand-hotel/?gclid=CjwKEAjwlrnNBRDMpojB0peDk0YSJACkpTg8uZ5jrImxkDYSe9WZWQRrt4eRfoaol6FZE WSDnQn lFhoCGSTw_wcB