Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance

Workshop proceedings, Stockholm Resilience Centre, Stockholm, Sweden 1–2 June 2010

Åsa Gerger Swartling, Cecilia Lundholm, Ryan Plummer and Derek Armitage
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Social learning, a highly relevant topic, and strongly debated, is the focus of this report, a joint collaboration between Stockholm Environment Institute and Stockholm Resilience Centre. Recognizing that a complex world and global challenges requires rethinking, reassign, re-learning, it is encouraging to read how researchers from diverse backgrounds come together and confront mind sets and new ideas on social learning and environmental change.

The document addresses a critical part of the very front of social-ecological systems research. Learning can be seen as a process of change in the way we look upon the world – our thoughts, feelings and actions – which is dependent on the learner, the object of learning, and the physical, biological, social, cultural, and economic situation and setting.

A key feature of resilience thinking is that changes, sometimes abrupt, often interpreted as crises, perceived or real, can trigger renewal and innovation if there is resilience. Learning plays a central role in resilience of social-ecological systems, in particular the recombination of experiences from different areas and diverse fields that may lead to new insights and pathways for development.

Let me use a metaphor as an illustration. In the 1930s Henri Matisse was commissioned by the American art collector Alfred Barnes to produce a major painting for his private gallery in Merion outside Philadelphia. Matisse was thrilled: He rented an old cinema in Nice, where he lived at that time, and spent a year completing the work, a dance triptych. He was pleased with the result. But when the piece arrived in Merion, Barnes wrote to Matisse explaining an unfortunate oversight: His collaborators had taken the wrong measurements, so the painting did not fit on the gallery wall. The difference in size was marginal and Matisse could easily have tweaked the triptych to fit the wall, like a technical quick fix and without any learning. But Matisse refused and instead rented the church for another year and in the process of reworking the piece, as he learned and experimented with forms that would capture the dancers’ rhythmic motion, he invented the famous ‘cut outs’ technique (gouaches découpés), what he later labelled “painting with scissors”. Whether consciously or unconsciously, Matisse turned a mistake into an opportunity for learning and innovation. The new triptych not only pleased Barnes, but also served as the stylistic starting point for what would later become among Matisse’s most admired works.

The metaphor captures the essence of learning and resilience, one that is not always easy to portray and measure in an efficiency framework. Resilience is both about the capacity to deal with shocks and disturbances (like climate change or financial crisis) and using such events to catalyze renewal, novelty, and innovation. Resilience thinking emphasizes learning, recombination of experiences and diversity and focuses on the interdependence of people and nature, like the dynamic interplay of slow and gradual change. Resilience thinking helps us avoid the trap of simply rebuilding and repairing the structures of the past, but instead anticipate, adapt, learn and transform human actions and societies for improved wellbeing in the lights of the unprecedented challenges of our interconnected and turbulent world. Resilience requires social learning.

Gathering around ideas and theories on complex adaptive systems and resilience, the qualified authors of the report, actively discuss, connect and combine research perspectives that otherwise tend to focus solely on the individual, the community or society, and in relation to improved environmental stewardship. In an exciting and novel fashion, they contemplate upon and analyze the role of learning for finding pathways that make it possible to navigate social-ecological development toward sustainability, not for the sake of the environment but for our own sake in the new era of global social-ecological change.

Carl Folke, Professor and Science Director, Stockholm Resilience Centre, Stockholm University; Director, Beijer Institute of Ecological Economics, Royal Swedish Academy of Sciences

What is it about “social learning” that attracts such an interesting diversity of scholars in the field of natural resource management and resilience? I think an important part of the answer has to deal with an increased interest in not only the structures of adaptive governance - i.e. institutions and networks - but also in the social processes that are truly able to bring to light the ability of people to collaborate, share insights, build common understandings and promote positive change. This volume is an excellent example of the diverse and interesting perspectives that have emerged in the field over the last decades. It also elaborates on how social learning interacts with a suite of phenomena that are critical for understanding adaptive governance of social-ecological systems - institutions, transformations and power. The volume is therefore essential reading for all scholars interested in understanding how to cope with critical governance challenges in the anthropocene.

Victor Galaz, Theme Leader, Adaptive Governance, Networks and Learning, Stockholm Resilience Centre
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EXECUTIVE SUMMARY

Social learning is the focus of applied and increasingly interdisciplinary scholarship in environmental education, climate change adaptation, natural resource governance and ecosystem management. Despite interest in the concept, important questions remain about the use and application of social learning in these contexts and its relevance to the challenge of global social ecological change. To explore these issues, approximately 35 participants gathered for the workshop, “Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance” on June 1–2, 2010, at the Stockholm Resilience Centre.

The workshop provided a unique opportunity for individuals approaching social learning in diverse ways to interact, share insights, ideas and critiques through keynote and speed presentations, open space and small group discussion sessions, and at an interactive plenary. Keynote and speed presentations focused on: 1) learning and governance of natural resource management with reference to water, forestry, fisheries and environmental change; 2) social learning in the context of climate change and broader sustainability debates; 3) the potential of social learning platforms to address emerging issues in dynamic and rapidly changing contexts; and 4) linkages among social learning, society, and the role of formal and non-formal education.

Following the presentations, open-space and small group discussion sessions created an opportunity to build upon diverse perspectives and explore specific issues in more depth, including: the role of institutions in social learning; how to define social learning; the influence of power on social learning in practice; the challenge of measuring social learning; and strategies and methodologies required to research social learning. The workshop culminated in a plenary session to discuss cross-cutting themes for further exploration. Among the main themes to emerge from this discussion was a recognition of the definitional complexity of social learning and its implications for research, the need for approaches to understand the social spaces and processes intrinsic to learning better, and the strengths and weaknesses of a concept that is applied in diverse ways.

To capture the pertinent ideas and summarize the key outcomes of the workshop, the proceedings are organized as follows: Section 1 offers an introduction and overview. In Section 2, the keynote and speed presentations are summarized, along with a summary of discussions from the open space and small group discussions. Section 3 highlights the ensuing plenary discussion on important cross-cutting themes and future research directions in the field of social learning. Finally, selected reflections on the workshop are offered in Section 4. The Appendices contain the following material prepared and circulated to participants prior to the workshop: Appendix 1: Workshop Agenda; Appendix 2: List of Participants; Appendix 3: Workshop Abstracts; Appendix 4: Agenda of Speed Presentations.
1 INTRODUCTION

Social learning theory is gaining prominence as a critical research approach to studying ecosystems management, governance, climate change and environmental education. Important questions in these contexts include:

- What is the relationship (i.e., similarities, differences) between social learning and other constructs (e.g., adaptation, environmental education, social capital, resilience) that inform sustainability?

- How might ideas and concepts from social learning theory contribute to “innovation” or help lead to social ecological systems’ transformations?

- Are we able to connect empirical evidence of social learning with better governance?

- If social learning leads to better governance, is there any evidence to assume that it enhances opportunities for sustainable ecosystem services?

- Should social learning be addressed differently depending on the nature of social ecological system change (directional change, systems approaching thresholds)?

- How does social learning play out in the context of multi-level governance?

Scholars are engaging in social learning research from many different perspectives and with a diversity of approaches. This workshop sought to gather leading scholars espousing alternate perspectives on social learning and sustainability and to engage them in an exploration of critical issues related to environmental change and governance.

The workshop, entitled Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance, was held on June 1–2, 2010, at the Stockholm Resilience Centre in Stockholm, Sweden. The welcome by Carl Folke, Scientific Director of the Centre, was followed by an orientation led by the organizing committee: Åsa Gerger Swartling, Cecilia Lundholm, Ryan Plummer and Derek Armitage. In an effort to communicate fully the breadth of approaches and topics, the workshop was structured into four sessions each comprised of keynote speech and participants’ presentations. The sessions addressed: learning and governance of natural resources; social learning in the context of climate change; the potential of social learning platforms to address emerging issues; and social learning, society and education. These “structured” sessions were complemented by conceptual mapping and open-space sessions where small group dialogues around key issues and concerns were encouraged. At the end, specific issues were discussed and avenues explored for future social learning and sustainability research. A post-workshop field trip was held to the Stockholm National Urban Park on 3 June 2010.
2 SUMMARY OF SESSIONS

2.1 SUMMARY OF “LEARNING AND GOVERNANCE OF NATURAL RESOURCES”

Social learning has emerged as a core concept in natural resource management and environment governance over the past decade. Scholars and applied researchers have examined social learning processes in a variety of contexts, including water, forestry, fisheries, and more recently, climate change adaptation. This session was opened with a keynote address by Claudia Pahl-Wostl, who addressed the value of multi-level and multi-loop learning concepts. Drawing on insights from a range of large-scale water governance projects, primarily in the European Union context, Pahl-Wostl outlined a conceptual framework to address the dynamics and adaptive capacity of resource governance and management regimes as multi-level learning processes. She underlined the need to develop the knowledge base required to advance current understandings of change and to apply shared frameworks in extending individual and societal responses. These frameworks must account for the complexity of governance regimes (e.g., formal and informal institutions, the role of state and non-state actors, the relative importance of bureaucratic hierarchies, markets and networks). Her presentation effectively illustrated the extent to which fostering shared understandings is necessary in overcoming the single-loop learning that seems to dominate governance processes.

Following Pahl-Wostl’s address, five presentations addressed different dimensions of social learning in natural resource management and governance. They highlighted the diversity of scholarship in the field and the conceptual challenges of applying a social learning approach.

The first presentation by Derek Armitage and colleagues discussed a multi-case project examining co-management institutions, adaptation and learning in Canada’s Arctic. The authors highlighted the need to identify and better understand the specific institutional mechanisms or processes that are known to enable or constrain learning, such as the co-production of knowledge. Recognition of these mechanisms is crucial for the development of policy and the efforts of co-management institutions attempting to deal with rapid environmental change.

The next presentation by Ryan Plummer and colleagues further probed the connections between learning and policy transfer. Drawing on several cases of multi-level water governance in Canada, the presentation highlighted the importance of examining existing policy transfer processes to see if, how and what type of learning was taking place. The presentation further emphasized the methodological challenges associated with examining this policy transfer–learning link.

Also focusing on the water context, but this time in South Africa, the presentation by John Colvin provided an “insider’s” view of the challenges and opportunities associated with designing social learning systems to support adaptive governance for watersheds. The presentation implicitly underlined the need to find pathways (or windows of opportunity) to enable learning in multi-level, multi-jurisdictional contexts, especially where national level conditions can exert a significant influence over local and regional institutional arrangements.

The final two papers in the session offered insights from Europe, with particular reference to the agriculture-environment context. The presentation by Neil Powell and colleagues highlighted the extent to which an understanding of differential stakeholder agency is central to examining the co-construction of agricultural strategies and policies. The presentation was framed with reference to the Baltic Sea region, a highly contested regional ecosystem with competing narratives about its ecosystem health. The presentation pointed to the type of contested context in which social learning is crucial.

In the final presentation of the session, Björn Nykvist examined multi-level governance and social learning processes in the Swedish agricultural sector. The presentation revealed that learning channels or pathways do exist, but that they are largely oriented around instrumental learning (technical and regulatory fixes). More effort is required to examine how farmers and national level actors may reframe the issues and solutions.

The informative session drew attention to the need to frame carefully what is meant by “learning” (i.e., defining learning and learning goals), how learning can be measured or assessed, and the different languages used to discuss learning concepts (even within the natural resource management context alone). These constraints and opportunities were further discussed and debated in the subsequent sessions, break-out groups and plenary sessions.
2.2 SUMMARY OF “SOCIAL LEARNING IN THE CONTEXT OF CLIMATE CHANGE”

The second workshop session was opened with a keynote address by Arjen Wals, who offered an environmental education perspective on social learning in the context of sustainability, in general, and climate change, in particular. The presentation highlighted essential ingredients of social learning, with emphasis on collaboration, citizen-driven and emancipatory approaches, emergent learning paradigms, reflection and reflexivity, social cohesion and the utilization of diversity. His concluding remarks noted: that sustainability is as much about how we teach and learn as it is about what we teach and learn; that more space is required for systems thinking in the curricula; the importance of integrative design and multiple ways of thinking; and that new forms of teaching require new competencies on the part of teaching and research staff. Finally, he emphasized the need to blur the boundary between institutionalized and community based learning.

Drawing on empirical data from studies in Europe, Southeast Asia and North America, the following six presenters approached the issue of social learning in the context of climate change from a predominantly governance perspective. Annika E. Nilsson explored social learning as a tool for studying international environmental governance. She concluded: that learning is more difficult in the context of high politics; that shadow spaces can facilitate learning in international governance and result in reframing approaches that best diffuse perceived conflicts; and that opportunities for learning often appear when the international society is reorganizing itself.

In the next presentation, Rasmus Klocker Larsen and colleagues highlighted some methodological aspects of operationalizing the case study approach for facilitation of social learning on local climate adaptation. Referring to local cases in Indonesia, Sweden and Canada, they found that projects operate optimally at the interface between planned and self-organized adaptation, and that it is difficult to make the link between self-organized adaptation and the existing regulatory policy. Their discussion raised a number of negotiation points for researchers who use local cases to inform policy making, such as disaster risk management in the Yucatan Peninsula, Mexico. Here, Marc Pelling investigated learning approaches adopted by communities hit by several hurricanes over the past 15 years. Identifying a diffusion of and interaction between 1st, 2nd and 3rd order of learning approaches, he concluded that social learning needs to be messy, many-stranded and multi-scaled in order to bridge value, discourse and materiality and to establish links between the individual, the collective and the whole society.

Based on a study of knowledge transfer mechanisms in northern communities in Canada and Sweden, Annette Löf examined indigenous “learning layers” as they pertain to climate change. Initial conclusions both point to a conflict between formal education and traditional knowledge among reindeer herders and suggest that governance transformation is not possible without institutional change.

Brad May continued the session by sharing insights from the ongoing work of Environment Canada in the context of community-based adaptation, social learning and transformations in three communities in Ontario, Canada. His research approach includes identification of adaptive capacity indicators and a social ecological inventory in identifying the (adaptation) leaders, their manifestation and their linkages to policy making. He concluded that Canadian provinces are increasingly addressing adaptation in their planning processes and understanding that effective adaptation leadership is key to future work in community transformation.

Constanze Haug (with David Huitema) gave the final presentation on policy learning in the context of climate and water in the Netherlands. The analytical focus was to measure the learning effects of citizen juries and policy exercises and to devise a set of tools with which to measure them. In conclusion, a significant increase in both convergence of opinion (an increase in normative learning) and levels of self-confidence and cynicism among participants throughout the process was found. As a sign of increased relational learning, the measurement tools were agreed to be workable but required reinforcement with interviews. Moreover, the study stopped short of making clear the link to policy change.

2.3 SUMMARY OF “THE POTENTIAL OF SOCIAL LEARNING PLATFORMS TO ADDRESS EMERGING ISSUES”

To celebrate his career, Niels Röling’s colleagues prepared a book titled Wheelbarrow Full of Frogs (Leeuwis and Pyburn, eds.) in 2002. The metaphor effectively captures the notion that several actors can come together and interact on a new platform that is dynamic and unpredictable and offers a unique vantage point. Extrapolated, social learning can then also be seen to have tremendous potential for actors to come together and consider different situations in new ways.
The presenters in this session spoke about situations where social learning platforms were not only overwhelmed by challenges but also capable of addressing emerging issues. Melissa Marschke introduced the session by identifying the extent to which social learning literature inadequately addressed hierarchy and power dynamics. Drawing upon years of field-work experience in Cambodia and Vietnam, she illustrated the fragility of social processes associated with learning when larger forces (i.e., sand mining) overwhelm them.

Åsa Gerger-Swartling raised the challenge of assessing and fostering learning in time-bound participatory projects by drawing upon her experiences of climate adaptation in the Stockholm region. She too acknowledged the potential and fragility of social learning platforms and stressed the need to integrate multi-stakeholder and learning processes into everyday practices.

Alan Diduck then spoke about the challenges confronting the forestry sector in northwestern Ontario, Canada, and the ways in which the Common Ground Research Forum is building capacity for social learning and sustainability. He highlighted the potential for social learning platforms to foster cross-cultural collaboration.

Samantha Stone-Jovicich shared her personal journey struggling to measure social learning in natural resources management in Australia. In drawing upon her experiences of literature on the subject, she offered key research questions and conceptually explored social learning platforms.

Appropriately, Niels Röling closed the session by speaking on social learning and the anthropogenic future. He provocatively asked how society will use science associated with planetary boundaries and employed the metaphor of the cognitive system to understand societal behaviour. Successfully overcoming these issues will involve strengthening and mainstreaming feedbacks, better understanding vulnerabilities of the system, taking back public space, and investing in interactive social processes.

2.4 SUMMARY OF “SOCIAL LEARNING, SOCIETY AND EDUCATION”

This session addressed the role of education in relation to social learning, natural resource management and societal change. The presenters addressed different examples and contexts (African communities, co-management fisheries in Sweden and democratic nations) by focusing on the general public, stakeholders and resource extractors.

Cecilia Lundholm presented a model of the interdependence of government, business and citizens (as voters and consumers) when dealing with environmental problems (like climate change), from a national and international perspective. In meeting these challenges, the role of educating the public to understanding of socio-economics and ecosystems was stressed insofar as it impacts their electoral support of governmental proposals (like carbon taxation) (Lundholm, In Factis Pax; in press).

Heila Lotz-Sisitka presented a research programme that focused on participation and change-oriented learning for building human agency, socio-ecological resilience building, adaptation and social change in South Africa. From the perspective of activity theory, she and colleagues are exploring and identifying tensions and contradictions in activity systems and the changing nature of participatory research practices.

The role of knowledge and learning in natural resources management was introduced in Diana Garavito’s presentation. Findings from a study on Swedish fishermen’s understanding of ecosystems that highlighted particular systems features (e.g., complexity, non-linear causality) helped elucidate avenues of sustainable resource management.

David Tàbara concluded the session by framing social-ecological systems. In emphasizing the need to focus on what not to do, he considered examples of technological innovation and environmental pollution control. Therein, he demonstrated occasions when societies learned what should have been done to prevent negative effects on regional and global social-ecological systems.

Ilan Chabay’s presentation focused on learning in the wider social context and in relation to “public understanding”. He first addressed some questions related to learning, sustainability and society: How do we engage in discussing these issues? How do we make sustainable development a part of people’s lives?

At the round table discussions, Chabay presented current research projects on fisheries in Poland, as well as a project on scientific literacy in China. Stressing that people without basic understanding cannot contribute meaningfully to sustainability change issues, he summarized important aspects of education for adaptive thinking:
Social learning is most effective if people are receptive learners. People need to learn how to learn.

What do people really need to know about sustainable development? What resources are necessary for engaging in the learning process?

In the final part, Chabay addressed issues on and the interconnectedness of learning and teaching. In education, we need to nurture a curiosity that leads to an interest in exploring both environmental issues and the linkages between social and ecological systems. In addition to being provocative, we also must offer incentives. On a more epistemological note, he highlighted the need to focus on learning how to ask questions as well as consider exploiting models for their pedagogical potential.

2.5 SUMMARY OF “OPEN SPACE TECHNOLOGY”

This workshop was intended to provide an opportunity for scholars engaged in the social learning domain to familiarize themselves with each other’s work and to discuss topics of mutual concern, current research foci, emerging policy issues and future research directions and activities.

In order to facilitate discussions on Day 2, we organized a “light version” of Open Space Technology (OST) (http://www.openspaceworld.org), allowing participants to choose topics for discussion and to set the agenda for the afternoon sessions. These topics were then arranged thematically in a maximum of six to seven categories.

Each choosing to address one or two topics, the participants were subsequently organized into one of the following five groups:

- institutions and social learning,
- defining social learning,
- power, practice and facilitation (this group consolidated two different topics: power, and practice and facilitation),
- measuring social learning,
- researching social learning.

It is important to stress that the participants were allowed to move from one group discussion to another. OST protocols abide by the saying “feet talk”, thereby facilitating the free movement of ideas in a fruitful and constructive way.
Many groups initiated discussion by urging participants to explain their choice of topic. Below are summaries of the respective group’s discussions that were reported back in the subsequent plenary session.

**Institutions**
The discussion focused on the importance of recognizing formal and informal groups and positions. As a starting point, the group was asked: What is social in social learning? In conclusion, it was decided that it was not necessary to define social learning in a literal way, but rather as a flexible concept. The same could be said of individual learning and socialized patterns of learning. Consideration was made of social learning as a progressive mode and the phenomenon that change is often driven without social learning.

**Multi-level learning**
Learning happens, and power lies at a range of measures; indeed, it is in the interaction between individual actors and structures that social learning occurs. The generation of a three-dimensional model to visualize all these interactions was proposed. Even if there is only change at the grassroots level, there is still a place for fostering and sustaining what has been learned at a higher level. It is important to bear in mind that interaction with higher levels brings with it the risk of corruption.

**Social learning as a useful concept across disciplines**
The discussion of social learning is useful on a horizontal plane between disciplines: in fact, we can learn much of social learning from the processes of policy-making and other disciplines. Social learning can therefore be seen as having a strategic role in translating between disciplines, from organizational science to natural resource management.

**Final set of discussion topics raised by the group:**
the lack of work on shadow objects/systems, and the need to revisit public–private relationships.

**Defining social learning**

**Who participates in social learning?**
The group reflected on “who” are part of the processes of social learning. In order to be reflective, a communication process between actors and critical reflection on oneself might be necessary. Concepts at the individual-level considered important in motivating social learning were:

- identity,
- curiosity,
- emotion.

**Where is social learning?**
Discussions followed on the identification of different contextual elements:

- the facilitator,
- policy - learning approach to policy,
- empowerment - exchange of reflection and need empowerment in order to consider positions,
- taking responsibility - issues of democracy,
- having a clear stake,
- self-organization,
- building trust by taking on others’ views at the collective level,
- polices as a process - can be enabling conditions for social learning. requires further study,
- group needs to have norms of interaction.

A final question posed by the group: Since social learning has been used in the innovation literature, how can it be linked to social dilemmas?

**Power, practice and facilitation**
As many of this group’s members are facilitators who work with learning processes, the discussions were consequently affected. The following topics were raised:

- Practice and facilitation are infused with power. We need to recognize the inherent power dynamics within systems when designing a study.
- We need to speak of power with more focus.

What do we mean? Formal, informal, identifying the change agents? Foucauldian analyses are not necessary, but we need to find better ways of describing power.
Measuring “how” implies a baseline
• When a clear learning context (a workshop, for instance) is not available, how can a baseline be determined?
• The use of a control group? How is one created?

Conclusion
The group concluded the discussion by asking: what is the point of using the social learning concept? We need to identify the objectives and ways to measure them!

Researching social learning
This final group discussed and identified four areas of research on social learning.

Influence of tools
Expert tools that can be used by participants.

Influencing the process
How is the outcome influenced if researchers support or analyze the process?

Influence of context
Cultural contexts can influence tools, such as role-playing games, etc.

Measuring social learning
The first question addressed by the group was: who has measured social learning? There is currently little work being done in this area, although social capital is one useful measure.

What learning are we measuring?
Individual learning is fairly easy to measure, but what is its aggregate? At the group and organizational level, change itself is the best measure – but is there a stage before this?

Categorization of measures?
• Tools that can quickly provide feedback, such as concept maps.

• Longer-term ideas, like transcriptions of discussions.

• Positionality”: the group discussed their personal experiences as facilitators. First, the paradox of openness when it reduces incentives to interact. However, if we do not pose a question, then the public does not know what do discuss. Even though facilitators are seen as objective, they do exert subjective influence; but to discuss this openly in the process would be to dilute it. It is necessary therefore to educate the public about the real meaning of facilitation.

- Photo: Ilan Chabay
**Need for Conceptual framework**

A discussion of general insights and a comparison between conceptual frameworks ensued. Better frameworks and the utility of structured research approaches to social learning were proposed. Conceptual frameworks should not be “panaceas”, but rather multifarious enough to capture diversity and complexity. Other aspects were discussed such as:

- the need for shared language and the definition of variables;
- structure vs. flexibility and the need for people to use part of it;
- simple descriptions of processes need to be nested within more complex ones to accommodate different approaches (e.g., agent-based modelling).

Finally, the group suggested that a wiki page/resource should be developed to serve as a tool for researchers engaged in the field of social learning to communicate.
3 PLENARY DISCUSSION AND FUTURE DIRECTIONS

The workshop culminated in a final plenary session, facilitated by Cecilia Lundholm and Derek Armitage. In building upon the presentations, the open space exercise and discussions, the participants looked ahead to the future. More specifically, they discussed the important cross-cutting themes that emerged from the workshop and identified the necessary steps to advance further social learning and sustainability.

3.1 DESCRIPTION OF PLENARY DISCUSSION

The discussion started with an exploration of the possibility of focusing several aspects of the workshop on a discussion of the current Deepwater Horizon oil spill in the Gulf of Mexico. In reflecting upon the degree of societal change required and social contexts that frame other disastrous events (e.g., the current financial crisis), the issue of reframing was raised.

The following important elements emerged:

- **Context and scale.** Social learning occurs in both autonomous and facilitated social processes. It finds institutional expression and interacts at multiple levels. Social learning can also play an important role in responding to social and ecological crises as it serves a critical “memory” function. Moreover, there is an important temporal dimension that needs to be acknowledged: although change may be slow, evidence indicates that it does happen. Climate change, for example, was not part of the social consciousness 30 years ago. Should the past process be regarded as social learning? Rephrased: what time scales should we use to address longer-term changes and linkages to sustainability? It is, however, often challenging for policy makers and citizens to make meaningful connections to long-term change and large-scale events.

- **Currents of change.** There appears to be a degree of critical reflection occurring, occasioned by the aforementioned focusing events. This is manifest in several different ways: from dialogue about BP’s negligence and the Deepwater Horizon oil spill to the praiseworthy acknowledgement of Elinor Ostrom’s work in her receipt of the Nobel Memorial Prize in Economic Sciences. How do we come to terms with individual rationality and “collective madness”? More fundamentally,
do (or could) these critical reflections and realizations translate into meaningful change?

- **Strategies for social learning and research requirements.** Although it is very difficult to define social learning – and throughout the workshop various conceptualizations of it became apparent – the participants all agreed that strategies for “social learning” are increasingly important. Can research reveal “triggers” for social learning? Are there limits to social learning or circumstances that will overwhelm social learning processes? What situational constraints exist and how do they limit institutional change? What are the “real” possibilities for social learning to connect with and sustain social ecological systems?

It was also argued that, on the one hand, there is social learning in the context of facilitation; on the other hand, there is social learning in institutions and in multi-level contexts.

### 3.2 FUTURE STEPS IDENTIFIED

The foregoing plenary discussion closed with a specific question to the participants: what can we (a “community” of individuals interested in social learning related to ecosystems management, governance, climate change and environmental education) contribute? In response, the participants brainstormed the following, possible “next steps”.

- Creation of a wiki or electronic communications tool that would foster ongoing communication and conceptualization about social learning and sustainability.

- Pursuing a social learning and sustainability research agenda. The group identified some possible research topics for future consideration:
  
  - improving more precisely the definition of social learning, possibly by conducting a Delphi study with experts;
  
  - identification of additional avenues included questioning the limits of social learning, exploring the connection between social learning and participation, and examining methodological issues in relation to social learning.

- Examining previous examples (cases) of social learning to improve understanding and to determine the factors that contribute to “faster learning”. Opportunities exist to make inquiries about social learning outside past processes and appear to concentrate on analogous situations such as open-source and communication technologies. In addition, emergent communications technologies and applications offer intriguing mechanisms for learning. Can we “learn faster” or “learn what not to do” with regard to sustainability? It was proposed to explore other similar cases where we identify social learning on a larger scale, including positive examples such as the building of the western welfare state. Indeed, in addition to building values and norms of social solidarity with others when creating the welfare state – thus creating common goods – we must now build values of the common, natural goods.
4 REFLECTIONS ON THE WORKSHOP

The Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance workshop provided a rich opportunity for scholars engaged in social learning inquiries to share their research and to discuss important topics concerning the field. In this final section, we draw attention to several important emerging issues.

Definitional complexity. The workshop made clear that social learning and learning are variously defined. In some instances, the adherence to a single definition was raised as being problematic, while in others, too strict an adherence to a prescribed definition was identified as being equally challenging. It also became evident that social learning is sometimes closely aligned with other social processes and/or participatory research fields. Using social learning synonymously with other terms or with fields of research is problematic. If social learning is everything, it loses its meaningfulness. Striving for terminological specificity and conceptual clarity is a worthwhile goal, as is having terms that are accessible to individuals working in a diverse array of fields.

Social spaces and social processes. Creating social spaces and social processes emerged as a critical and common interest to the workshop participants. These spaces and processes are acutely related to learning. However, learning is one among many variables, such as trust, communication, social capital, leadership and so on. What is the relationship between learning and these other aspects? What is the role of learning in participatory and/or collaborative processes? Starting dialogue about these relationships is crucial to resolving this question.

Breadth and depth of application. As participants in the workshop shared their work and discussed their experiences, the breadth of research relating to social learning and sustainability became evident. Social learning research relates to an array of topics from climate change and water resources management to formal classroom instruction and non-formal educational settings. It is also being conducted in a diversity of settings (individuals, organizations, communities, universities, policy and government, the public, and society), situated in a myriad of traditions, relying on different methodological approaches, and taking place at a range of scales. Participants at the workshop discussed the value of forging linkages among the aforementioned. This is no small task. They also emphasized the need to achieve greater depth and to enhance the conceptual acumen pertaining to social learning.

Comparability of cases. There are many cases of social learning, but what about comparability? The participants shared their research on social learning through speed presentations. With more than 20 presentations and ensuing discussions, it became apparent that experience of social learning is far more extensive than that shared exclusively during the workshop presentations. Having a multitude of cases enriches the understanding of associated processes and challenges. It also raises important critical questions of comparability: Are meaningful and robust comparisons possible? Can results be aggregated across cases in the absence of similar methods and epistemologies? This substantial challenge becomes even more difficult when undertaking interdisciplinary inquiries.

Strengthening the connection to sustainability. Learning is an important part of sustainability, and there is an acute need to “learn faster” and to “learn what not to do” if we are to achieve sustainable trajectories. We need to improve our understanding of the ways in which learning can benefit society and the environment. What kinds of learning would help individuals, groups, organizations and society achieve better results? Learning is central to adaptation as actions are changed in response to feedback. Learning also has a pivotal role to play in transformations, where systems’ trajectories need to be questioned critically and possibly altered. This often requires making difficult decisions in the arena of “hard politics”. What tradeoffs are critical to sustainability? The foregoing takes learning into the domain of social change, where establishing values and creating innovative institutions are required for sustainability.
APPENDIX 1 WORKSHOP AGENDA

International Workshop June 1-3, 2010, Stockholm Resilience Centre

Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance
This workshop is meant to provide a meeting place for scholars engaged in social learning research and hence an opportunity to get to know each others’ work, and, secondly, to discuss topics concerning the field; its research foci, now and in the future, policy issues and how to develop the field further (conferences, publications, etc.).

In order to have everyone sharing their interest and presenting particular projects they are pursuing, presentations will be given on Day 1 and Day 2, and these are called Speed Presentations (see below). Also, Key Note speakers will provide input on both days. In all, these presentations will convey the diversity and richness of the contemporary social learning research field. They will also serve as a basis for discussions (the second half of Day 2) about how to advance it.

Day 1 – June 1st, 2010, Room 312

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<tr>
<th>Time</th>
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<tr>
<td>8:30-9:00</td>
<td>Introduction by Carl Folke and Derek Armitage, Cecilia Lundholm, Ryan Plummer and Asa G. Swartling</td>
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<tr>
<td>9:00-9:30</td>
<td>Keynote: Claudia Pahl-Wostl</td>
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<td>9:30-10:00</td>
<td>Coffee Break in the Lobby at the Centre</td>
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<tr>
<td>10:00-11:30</td>
<td>Speed Presentation 1: Learning and Governance of Natural Resources</td>
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<td>11:30-13:00</td>
<td>Lunch in the lobby</td>
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Optional: Stockholm Seminar with John Foley – 12:00-12:50 (Room 312)

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<tr>
<th>Time</th>
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<tr>
<td>13:00-13:30</td>
<td>Keynote: Arjen Wals</td>
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<tr>
<td>13:45-14:45</td>
<td>Speed Presentation 2: Social Learning in the Context of Climate Change</td>
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<td>14:45-15:15</td>
<td>Coffee Break in the lobby</td>
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<tr>
<td>15:15-16:15</td>
<td>Continuation of Speed Presentation 2: Social Learning in the Context of Climate Change</td>
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<tr>
<td>16:30-18:00</td>
<td>Speed Presentation 3: The Potential of Social Learning Platforms to Address Emerging Issues</td>
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Dinner: Kräftan Restaurant (3 minute walk from the Centre) http://www.kraftan.nu/
Day 2 – June 2nd, 2010, Room 312

8:30-9:00  Key note: Ilan Chabay

9:10-10:10  Speed presentation 4: Social Learning, Society and Education

10:10-10:30  Coffee Break in the Lobby at the Centre

10:00-11:30  Continuation Speed Presentation 4: Social Learning, Society and Education

11:45-12:30  Open Space session

12:30-13:30  Lunch in the lobby

13:30-15:30  Group discussions

14:30  Coffee served in the Lobby

15:30-16:30  Reporting group discussions in plenum

16:45-17:45  Plenary discussion on most wanted/prioritised ways and proposals forward

17:45-18:00  Closing words by Carl Folke

Dinner: (10 minute walk from the Centre) http://www.bellevuekonferens.se/bellevue.html
## Appendix 2  Workshop Participants

<table>
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APPENDIX 3  WORKSHOP ABSTRACTS

Knowing, learning, and changing in transitioning to a sustainable future
ILAN CHABAY

The importance of multi-level and multi-loop learning for building and sustaining
the adaptive capacity of social-ecological systems
CLAUDIA PAHL-WOSTL

Learning our way out of un-sustainability: utilizing diversity through trans-
boundary social learning
ARJEN WALS

From adaptation to learning and the role of co-management institutions:
Responding to environmental change in Canada’s Arctic:
DEREK ARMITAGE, FIKRET BERKES, AARON DALE, ERIK KOCHO-SCHELLENBERG, AND
EVA PATTON

Common ground research forum: A cross-cultural learning platform for resource sharing
ADOLPHUS CAMERON, CUYLER COTTON, IAIN DAVIDSON-HUNT, ALAN DIDUCK,
JENNIFER FINDLAY, AND JOHN SINCLAIR

Designing social learning systems to foster cooperative and adaptive governance
of watersheds and enhance sustainable livelihoods pathways in South Africa
JOHN COLVIN

Learning over time? Lessons from studying social learning on climate adaptation
in time bound participatory processes in the Stockholm region, Sweden
ÅSA GERGER SWARTLING

Policy learning on climate and water. A methodological approach with
observations from a policy exercise on European climate policies and citizens’
juries on water management in the Netherlands
CONSTANZE HAUG & DAVE HUITEMA

Operationalizing the case study approach for facilitation of social learning in local
climate adaptation: cases from Sweden, Canada, and Indonesia
RASMUS KLOCKER LARSEN, ÅSA GERGER SWARTLING, NEIL POWELL, LOUISE SI-
MONSSON, AND MARIA OSBECK1

Exploring indigenous learning layers in view of climate change
ANNETTE LÖF
Education and Participation Practices: Social Learning and Resilience in a Risk Society
HEILA LOTZ-SISITKA

Society’s response to environmental challenges: on the role of citizens’ socio-economic knowledge
CECILIA LUNDHOLM

Social learning, hierarchy and power dynamics
MELISSA MARSCHKE

Communities, Climate Change Adaptation Leadership and the Role of Social Learning: Application to Three Communities in Ontario, Canada
BRADLEY MAY

Social learning as a tool for analyzing international environmental governance
ANNIKA E. NILSSON

Social learning in the agricultural sector in Sweden: A multi-level governance study
BJÖRN NYKVIST

Barriers and opportunities for social learning on Mexico’s Caribbean coast
MARK PELLING

Multi-Level Water Governance in Canada: Probing the Connection between Learning and Policy Transfer
RYAN PLUMMER, ROB DE LOË, BECKY SWAINSON

Paving the way for the EU Regional Cohesion Policy in the Baltic Sea Region: Co-Constructing Agro-Environmental Measures through Stakeholder Agency
NEIL POWELL, RASMUS KLOCKER LARSEN, MARIA OSBECK, AND SUKANDA JOTIKAPUKKANA

Social learning for the anthropogenic future
NIELS RÖLING

Social learning in Natural Resource Management: A “wicked” issue for researchers and practitioners
SAMANTHA STONE-JOVICICH
Learning what not to do: A necessary framing for the integrated governance of social-ecological systems

J. DAVID TÀBARA, ÅSA GERGER SWARTLING, ELEONORE PAUWELS, BEVERLEY THORPE, PAUL M. WEAVER, AND INGRID KÖKERITZ

Systems Thinking on Dynamics and Natural Resource Management

DIANA YANID GARAVITO BERMÚDEZ AND CECILIA LUNDHOLM
KNOWING, LEARNING, AND CHANGING IN TRANSITIONING TO A SUSTAINABLE FUTURE

ILAN CHABAY

Dealing with the complex issues that are inherent in developing a sustainable society requires a process of learning by every member of society. The learning needed is a process of building adaptive patterns of thinking starting from earliest childhood and continuing throughout life. This can happen best when the learning is based on curiosity and inquiry, collaboration, and locally/personally relevant projects. Fundamentally, learning is an internal action of individuals, but the process is significantly, perhaps critically, mediated by social interactions among peers and authorities. Social interactions that both mediate and are influenced by the learning process constitute the basis for social learning.

I will discuss aspects of motivation, cognition, and communication in the process of learning from the perspective of individuals and organizations. I will draw upon our recent studies and interventions on 1) governance of fisheries in the Baltic Sea, particularly in establishing a new forum for open exchange of ideas on fisheries policy in Poland and 2) on studies in Southwestern China contrasting urban dwelling children from established urban families to those from migrant (i.e. recently moved to cities from rural areas of China) families. The main points include the process and methods by which conflicted science needed in the governance of the Baltic Sea fisheries is being addressed, particularly in Poland, and the influence of belief systems, economic status, and culture on the understanding and knowledge of science among middle schools students in two cities in China.

1 Chalmers University of Technology
THE IMPORTANCE OF MULTI-LEVEL AND MULTI-LOOP LEARNING FOR BUILDING AND SUSTAINING THE ADAPTIVE CAPACITY OF SOCIAL-ECOLOGICAL SYSTEMS

CLAUDIA PAHL-WOSTL

Governance failures are at the origin of many resource management problems. In particular climate change and the concomitant increase of extreme weather events has exposed the inability of current governance regimes to deal with present and future challenges. Still our knowledge about resource governance regimes and how they change is quite limited. The keynote will present a conceptual framework addressing the dynamics and adaptive capacity of resource governance and management regimes as multi-level learning processes. Adaptive capacity is here defined as the ability to first alter processes and if required convert structural elements as response to experienced or expected changes in the societal or natural environment.

The influence of formal and informal institutions, the role of state and non-state actors, the nature of multi-level interactions and the relative importance of bureaucratic hierarchies, markets and networks are identified as major structural characteristics of governance regimes. Change is conceptualized as social and societal learning that proceeds in a stepwise fashion moving from single to double to triple loop learning. Informal networks are considered to play a crucial role in such learning processes. The framework supports flexible and context sensitive analysis without being case study specific.

Finding general patterns without resorting to simplistic blueprints poses still considerable challenges. Defaulting to generic and simplistic approaches will not address the complexity of real governance regimes. Panaceas have proven to be weak in their explanatory power and not very useful or even detrimental for policy advice- Unfortunately, technological or institutional panaceas such as the privatization boom were often automatically applied without long-term monitoring and revision that would have responded to failure earlier. However, highly focused analyses are unlikely to lead to insights that can be generalized across individual case studies. What is required may be called a diagnostic approach taking into account complexity in a systematic fashion. Such an approach should support context-sensitive analysis without being case specific and thus not transferable.

First empirical evidence from water governance supports the assumptions made on the dynamics of governance regimes and the usefulness of the chosen approach. More complex and diverse governance regimes have a higher adaptive capacity. However, it is still an open question how to overcome the state of single-loop learning that seem to characterize many attempts to adapt to climate change. Only further development and application of shared conceptual frameworks taking into account the real complexity of governance regimes can generate the knowledge base needed to advance current understanding to a state that allows giving meaningful policy advice.

References:


LEARNING OUR WAY OUT OF UN-SUSTAINABILITY: UTILIZING DIVERSITY THROUGH TRANS-BOUNDARY SOCIAL LEARNING

ARJEN WALS

In this presentation I will talk about social learning as a collaborative, emergent learning process that hinges on the simultaneous cultivation of “difference” and social cohesion. The latter two are seen as prerequisites for creating shared meaning, unleashing creativity and arousing the kind of dynamic and energy needed to break with existing patterns, routines or systems that are known to be unsustainable. I will touch upon some design principles and conditions that can help foster such learning and will zoom in on the role of universities and research institutions in what I will refer to as “vital coalitions” for sustainability. Such coalitions are trans-boundary in the sense that they involve multiple stakeholders, actors, perspectives and levels of learning, and lead to the hybridization of knowledge and experience.

1 Wageningen University
Responding to environmental change in Canada’s Arctic will require a broad range of adaptation measures in the short- and long-term (e.g., infrastructure change, altering hunting patterns). However, adaptation efforts may also benefit from greater attention to social learning processes achieved through multi-level institutional partnerships. Land claims-based co-management institutions in the Canadian Arctic may be particularly important in this regard. Research on these co-management institutions highlights their role in facilitating adaptation and enabling learning through change by enhancing the flow of resources, information and knowledge, bringing together diverse perspectives and creating incentives for individual and collective action. In this institutional context, learning is recognized as central to adaptation, while learning processes that emphasize collaboration and participatory responses to change are themselves a key type of adaptation. Still emerging, however, is an understanding of the specific mechanisms through which these co-management institutions create the conditions for social learning, defined here as the ongoing action, reflection and deliberation of individuals and groups collaborating to seek solutions to complex, multi-scale challenges. We draw on the emerging outcomes of a team project in three co-management contexts in Canada’s Arctic to examine how social learning is triggered or constrained by knowledge co-production processes, the strength of relational networks, new coping strategies and longer-term cultural adaptations.
The new millennium has not been kind to forest communities in Canada as a result of changing global markets for forest products. Between January 2003 and April 2007, 22,000 jobs have been lost in Canadian forest communities and 112 mills have permanently closed. Northwestern Ontario has been particularly hard hit, and a characteristic of forest communities in the region is that they are in the midst of rapid transition and adaptation. Additionally, the region is experiencing a demographic change in which the population of Aboriginal people will likely surpass that of European settlers within the next generation. In the past, this type of dynamic has resulted in conflict and competition over natural resource benefits rather than cooperation and mutuality.

In 2005 Abitibi Consolidated, one of the world’s largest producers of newsprint and groundwood paper, announced that it would be closing its mill in the City of Kenora, putting 390 employees out of work and having an indirect impact on another 780 positions. In doing so, the company was faced with disposing of several large parcels of heritage lands, including Tunnel Island. Given the historic and cultural significance of these lands, mere contemplation of their disposal had, in the past, been problematic. As early as 2000, however, Kenora and the Grand Council of Treaty #3 had been working on a cooperative initiative known as Common Land, Common Ground, which was intended to foster constructive working relationships between First Nation and non-First Nation governments on a variety of mutual concerns. The Common Ground initiative, therefore, became a key vehicle for collaboration with respect to the land in question. Common Ground is a promising example of settler and Aboriginal peoples learning to work together to share natural resources and build sustainable local and regional economies.

The purpose of our project, the Common Ground Research Forum (CGRF), which began in 2009 and will run to 2014, is to understand and build capacity for cross-cultural collaboration and social learning for sustainability. The project includes various objectives, activities, and short- and long-term outcomes. Several of the proposed activities and outcomes touch on questions being addressed at this workshop. Three of these linkages are outlined here, but further examples can be identified. Cultural asset mapping and historical narratives of Common Ground will shed light on what triggers and shapes collaboration, social learning, and governance adaptations and innovations. Case studies of Common Ground governance and narratives of First Nation involvement will provide empirical evidence regarding connections between social learning and good governance, particularly with respect to developing rights-based partnerships between settler and Aboriginal governments. Finally, action research to develop formal and non-formal curricula and accompanying pilot projects will explain some of the relationships between environmental education and social learning, especially place-based, cross-cultural education.

The project is supported by a Community-University Research Alliance grant from the Social Sciences and Humanities Research Council of Canada.
DESIGNING SOCIAL LEARNING SYSTEMS TO FOSTER COOPERATIVE AND ADAPTIVE GOVERNANCE OF WATERSHEDS AND ENHANCE SUSTAINABLE LIVELIHOODS PATHWAYS IN SOUTH AFRICA

JOHN COLVIN

How can we manage watershed services so that these benefit the poor and enhance catchment resilience? How can we develop adaptive governance systems in response to the challenges of implementing Integrated Water Resource Management approaches and in anticipation of the shocks and stresses of current and future climate change? How can we design social learning systems to enable us to answer these questions?

In this speed talk I will reflect on Watercourse, a 5-year programme of systemic inquiry and social learning in South Africa designed with the above questions in mind. Specifically I will reflect on workshop question 6: How does social learning play out in the context of multi-level governance?

The process undertaken by Watercourse was to form a series of interlinked communities of practice, focused at nested levels of governance including community, sub-catchment, catchment cluster, regional, national and international levels. After outlining how these communities of practice “played out” their social learning I will consider these plays through the lenses of the SLIM framework, specifically:

• In what ways did historical factors shape these plays?

• In what ways did stakeholding in these plays develop, or fail to develop?

• What was the role played by national policies and institutional arrangements in shaping and constraining effective social learning?

• What epistemological constraints did we encounter?

• How did we approach the process of designing and facilitating the programme and its constituent communities of practice?

• What impacts have we had, if any?

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LEARNING OVER TIME? LESSONS FROM STUDYING SOCIAL LEARNING ON CLIMATE ADAPTATION IN TIME BOUNDED PARTICIPATORY PROCESSES IN THE STOCKHOLM REGION, SWEDEN

ÅSA GERGER SWARTLING1,2

Recent literature calls for adaptive approaches and continuous learning for building knowledge and practices to respond to environmental change. Continuous multi-stakeholder collaboration and social learning processes are, if implemented well, likely to facilitate the establishment of continuity and new routines, transformations of relationships, and more sustainable resource management practices. However, how stable learning is over time and to what extent it leads to behavioural and/or institutional change remains a rather unexplored area of research. It appears particularly challenging to both assess and foster learning in the context of time-bound, participatory research projects, which are typically characterized by short time scales and people moving in and out of the process. Moreover, once data is collected, given the nature of academic work and funding opportunities, along with short-term demands for immediately applicable research results, there are valid reasons for researchers to carry on with documentation, analysis and publishing of results. There is an apparent risk that participating stakeholders are left in a vacuum between the process that they have been part of, and the real world contexts in which they work and live.

This paper discusses findings from participatory research on risk perceptions and social learning in the context of climate adaptation in the Stockholm region, Sweden. Results from a series of focus groups and workshops carried out over a half year period indicate that the process has fostered reflection and learning on local climate adaptation issues in the short term. Evidence includes a widened understanding of the complexity associated with adaptation and the organizational landscape that determines the local/regional climate adaptation efforts and future potentials; as well as a perceived need for new integrated knowledge, long-term and process-oriented perspective, new collaborative approaches, and stakeholder arenas to support the local adaptation process in the Stockholm region.

However, follow-up interviews with participants also point to the fragility of short-lived participatory initiatives and calls for integration of multi stakeholder and learning arenas into everyday practices of contemporary urban planning and development processes in the Stockholm region. While being overwhelmingly positive about their involvement in the project, participants often regretted that there is no continuation of such process and no apparent fora where they can explore climate change adaptation barriers and opportunities and exchange knowledge and perspectives in a conducive environment. While some participants claimed that they have benefited from the process in terms enhanced adaptive capacity, others appear to have fallen back into conventional thinking and routines as climate adaptation concerns are not considered to be of high priority in their organizations.

It is suggested that future research would benefit from exploring and problematizing the temporal dimension of (social) learning further, for example through studying more extensively long-term community based adaptation and participatory action research initiatives.

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POLICY LEARNING ON CLIMATE AND WATER. A METHODOLOGICAL APPROACH WITH OBSERVATIONS FROM A POLICY EXERCISE ON EUROPEAN CLIMATE POLICIES AND CITIZENS’ JURIES ON WATER MANAGEMENT IN THE NETHERLANDS

CONSTANZE HAUG¹ & DAVE HUITEMA²

It appears that in many cases, the complexity of modern environmental problems is in its core not scientific, but social or political. From this perspective, the involvement of stakeholders in long-term policy appraisal moves centre stage. Joint deliberation by main protagonists becomes crucial to expose and attempt to reconcile differing perspectives and to devise long-term solutions that are acceptable to those most concerned. Learning is widely recognized as one of the key objectives in interactive appraisal processes. Many accounts of deliberative processes emphasize that they provided a valuable learning experience to participants. Yet, reflections on how and what participants have actually learned are often based rather on anecdotal evidence than systematic assessment. This paper sets out a framework how policy learning was measured in two instances: (1) a deliberative appraisal on future European climate governance. In a daylong “Policy Exercise” in the context of the EU project ADAM, policy-makers and stakeholders explored policy portfolios and strategies for future European climate policy in a structured and safe environment; and (2) a set of three “citizens’ juries” on water issues. In these citizens’ juries groups of randomly selected citizens come together to discuss a predefined issue, hear evidence from experts and stakeholders and write a recommendation to the public authorities. The paper first elaborates on the indicators that were used to measure learning, building on policy learning theory (Hall, 1992; Argyris and Schön, 1993). Subsequently, the methodological building blocks in this endeavour are described, including ex ante and ex post questionnaires, concept maps drawn by participants prior to and after the exercise, as well as interviews. We conclude from the evidence gathered that (1) policy exercises have significant potential in producing process-related insights (e.g. to identify institutional constraints and bottlenecks) and in clarifying diverging actor viewpoints. The emphasis on long-term, forward-looking appraisal, however, came out less strongly than expected; (2) citizens’ juries are an excellent format for cognitive, normative and relational learning, but such effects are sadly only found in the members of the jury, not in the wider public, nor with the public authorities that solicited their advice. From a methodological perspective, we see the strongest promise for assessing policy learning in the use of ex ante and ex post concept maps as they allow to track conceptual change, both at the group and the individual level.

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This paper examines the efficacy of the meta-methodology of a “case study approach” to facilitation of social learning in community-based climate adaptation and how it is operationalized within different learning paradigms. The evidence derives from a comparison of methodological applications in three projects, namely the Mistra funded Swedish Research Programme on Climate, Impacts and Adaptation in Stockholm Region, Sweden; the Environment Canada led Adaptive Collaborative Risk Management and Climate Change in the Niagara Region: A Participatory Integrated Assessment Approach for Sustainable Solutions and Transformative Change in the Niagara Region, Ontario, Canada; and the 6th framework EU research program Reconciling Multiple Demands on Mangrove Resources in the Mahakam Delta, Indonesia. The analysis proceeds through a conceptual model of four different epistemological approaches to social learning. It distinguishes four worldviews, each associated with 1) a specific ontology of the learning process; 2) a measure of learning quality; and 3) an assumed learning goal.

The discussion reveals how the multiple ways by which case study methodologies can be operationalized enable researchers to target different issues and make the approach relevant for specific project realities. This is supported via striking a balance between benefits for the “external” dialogue which is aimed to foster learning for case study stakeholders, and an “internal” learning process which may benefit the researchers’ interests as well as improve the process design for the respective change processes. The three projects operationalize the case study methodology in different ways and two main axis of methodological differentiation is drawn out: objectivism versus contextualism and interactionism versus critical-structural methods. The paper concludes with reflections on how the choices made in projects regarding how to operationalize the case study approach for social learning will affect the prospects for embedding the project transformations with mechanisms which can adapt assumptions of project owners and researchers in the face of surfacing of insights from the stakeholder process.
EXPLORING INDIGENOUS LEARNING LAYERS IN VIEW OF CLIMATE CHANGE

ANNETTE LÖF

The northernmost regions in the world are projected to suffer the most severe consequences of climate change (ACIA 2005). Natural-resource based communities and Indigenous peoples have been identified as particularly susceptible and research efforts are increasingly directed at exploring the potential consequences of climate change on Indigenous livelihoods (e.g., Berman and Kofinas 2004; Ford, Pearce et al., 2007). Using Indigenous (IK) or Traditional knowledge (TK) as a “canary” or early warning for climate change (Riedlinger and Berkes 2001) as well as a complement to “western scientific knowledge” or to supplement the lack of observational and diachronic data is also gaining increasing popularity (ACIA 2005; Berkes and Berkes 2009). However, whereas the interest in IK /TK has grown exponentially over the last two decades research has tended to neglect taking a critical perspective on learning processes and knowledge transfer mechanisms and treated IK/TK more as an artifact handed down through generations or automatically appropriated when “spending time on the land”. Further, it is worth emphasizing that whereas knowledge and experience may provide a most useful starting point to explore climate change impacts, adaptability of a community or a system can only be meaningful understood if placed in a governance context – that is, linked to the collective ability to act on and communicate knowledge and experience and to institutionalize adaptive or transformative strategies.

By exploring two Indigenous communities, one reindeer (Rangifer tarandus tarandus) herding community in northern Sweden and a woodland caribou (Rangifer tarandus caribou) hunting community in Saskatchewan, Canada, this research project aims at partly addressing this knowledge gap. These communities are linked by the key species of reindeer/caribou (culturally and ecologically), shared climatic challenges as well as pragmatically through previous cross-scale collaborations and exchanges between the communities. This recently begun project, which is part of my PhD, thus touches upon on learning loops (different types of learning) but places particular emphasis on learning layers (how learning travels from the individual to the collective action and institutional levels), which can also be partly understood in terms of social learning.

Empirically the aim is to describe Indigenous experiences of climate change in the boreal forest region. Additionally the aim is to link these experiences to learning processes and to explore how learning is layered within these communities. Which different knowledge transfer mechanisms are activated? Which are the most important learning arenas? And can different types of learning and adaptive decision-making (such as ad hoc, contextual, “on the spot” decision-making; thumb-rules; and more value-based, normative understandings) also be linked to different mechanisms and arenas? By exploring these dimensions the research explicitly addresses the relationship between individual and collective learning in the context of multi-level governance.

References:


EDUCATION AND PARTICIPATION PRACTICES: SOCIAL LEARNING AND RESILIENCE IN A RISK SOCIETY

HEILA LOTZ-SISITKA

This paper reviews education and participation practices, starting with an overview of how participation was practiced in education systems associated with the industrial and technological revolutions in the 18th, 19th and 20th century. It then reviews the emergence of 20th century cognitive sciences, and associated education and participation practices which focussed primarily on semiotic mediation processes at the interface of learner, educator and cultural text. It considers the consequences of such education and participation practices in majority world contexts, where resources and capacity for the kinds of education and participation practices generated and favoured elsewhere have not been forthcoming.

The 21st century, increasingly being characterized as a risk society, poses new challenges for researchers thinking about education and participation practices. In a southern African context, experiences of disenfranchisement from land due to colonial intrusion and apartheid removals; HIV/AIDS; water and energy scarcity; and loss of biodiversity and ecosystem services and resilience are all are constituted within various historically located social, economic or socio-ecological risk and opportunity trajectories. As such, they are increasingly permeating education, and are stimulating an interest in critical emancipatory education practices that are also socio-cultural, situated and oriented towards resilience and capability development. Researchers are seeking out new language (e.g. social learning) to describe education and participation practice relations that arise in a risk society context, and where socio-ecological resilience is increasingly being viewed as a new imperative for human agency and development.

In our research programme focussing on change oriented learning and sustainability practices, we have been exploring generative mechanisms, cultural historical activity systems, the primacy of practice, and expansive learning processes as emergent sites for new forms of human agency, socio-ecological resilience building, adaptation and social change. In the paper I point to some of the participation practices that are emerging at the interface of history, culture, socio-ecological context, educator, learner, contradiction and text. These involve inter-alia contextual profiling; identification of tensions and contradictions in activity systems; inter-epistemological dialogues; absenting causes; and changing the nature of participatory research practices. These social learning processes differ from earlier education and participation practices, and have implications for learning and social change; curriculum development; learning interactions; epistemological foundations of education; pedagogy, and socio-ecological resilience building.

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SOCIAL LEARNING AND SUSTAINABILITY

SOCIETY’S RESPONSE TO ENVIRONMENTAL CHALLENGES: ON THE ROLE OF CITIZENS’ SOCIO-ECONOMIC KNOWLEDGE

CECILIA LUNDHOLM

As human beings we ultimately depend on the services that ecosystems provide, such as food production, nutrient recycling and flood buffering (Millennium Ecosystem Assessment, 2005), hence, current losses of such ecological goods and services and necessary ecological conditions due to climate change constitute a real threat (Rockström et al., 2009). Consequently, current times are demanding in that they ask us and our societies to address these challenges the best possible way, and also at some speed.

This paper focuses on the relationship, and interdependence, of the individual (as citizen, voter and consumer), the government and business, in dealing with environmental problems and sustaining nature’s services in democratic states, and, the role of socio-economic understanding of adults, which is critical to the functioning of democracies. As citizens, we need governments to sustain collective action that generates a real effect in reducing for example CO2-emissions.

However, governments are reluctant to take such decisions in fear of losing out in elections. This Catch 22 situation is at the core of current lack of changes and moving forward. The COP 15 meeting in Copenhagen speaks in itself of this crisis and dilemma. This paper considers government’s dependency for their mandate on the views of the median voter and consequently the fact that they are somewhat bound by the way the median voter understands the socio-economic context in which they live. Transport costs illustrate the point. Economic growth is accompanied by a greater than proportionate use of roads which produces a range of social costs (such as congestion and pollution) that are not borne by the individual road user when roads are free at point of use. In light of a discourse on environmental education that is still very concerned and preoccupied with natural science teaching, this paper draws on empirical studies and investigates the role of (socio-) economics education for enhancing society’s response to environmental challenges.

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Social learning, as a process, is meant to enable actors to come together to question norms, policies and management objectives through the creation of deliberative platforms that support an interactive dialogue with a wide set of stakeholders (Collins and Ison 2009; Adger et al., 2009). Collaborative participation in activities ought to lead to enhanced learning and changes in practice (Allan and Wilson 2009). This concept is gaining in traction: an entire 2009 issue of Environmental Policy and Governance was devoted to this idea. In the area of climate change adaptation, to further illustrate this point, social learning is being promoted as both a governance mechanism and as a form of praxis for shaping policies and practices (Collins and Ison 2009). Social learning processes are encouraged to solve “wicked”, messy, complex resource governance dilemmas, particularly in situations where there are: (a) competing claims on natural resources; (b) an interdependence among actors to solve the issue; and, (c) actors that can communicate together without significant financial, educational or language barriers (Van Bommel et al., 2009; Leeuwis 2004; Ostrom 1990). The above list helps to identify the necessary conditions for ensuring that social learning processes may be successful.

Resource governance problems are, however, not easy to define, predict or measure (Allan and Wilson 2009), with unequal power relations often existing between actors. For instance, more powerful actors will often have a greater voice in setting visions and deducting solutions for resource governance challenges (Van Bommel et al., 2009). This is similar to what one finds in the development literature with respect to elite capture of those participating in resource management committees (c.f. Platteau 2004). What appears to be missing in the social learning literature is adequate attention to hierarchy and power dynamics (Armitage et al., 2008). For example, in the region where I conduct my field research, that of Southeast Asia, governance tends to unfold in a hybrid manner, combining democratic and authoritarian elements (Jayasuriya and Rodan 2007). Such regimes are able to obstruct or contain potential forms of collective organization, and group problem-solving is not something that is widely practiced (in spite of donor programs designed to encourage participation and empowerment). How, then, can social learning processes work in contexts infused with hierarchy, unequal power relations and patron-client relationships? My ten-minute speed talk will focus on this nexus, drawing from field research in Cambodia and Vietnam.

References:


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Initial experience with planned adaptation to climate change in Canada has indicated that, not surprisingly, leadership plays a crucial role in conceiving and developing lasting adaptation solutions. In addition, the cross-scale nature and diversity of challenges faced necessitates different skill sets, at different scales. Compounding this is the need to transfer knowledge across scales for the dissemination of crucial information that can lead to effective climate change adaptation. There is a potential for social learning concepts to inform this discussion.

More communities are approaching climate change adaptation based on their unique local perspectives, as well as relying upon the input of professions which are also developing their own adaptation knowledge base (e.g. planners, engineers). Government authorities are highlighting the need for leadership which creates a culture of climate change adaptation (Ontario, 2009). Sharing of community adaptation success stories between communities has also been highlighted as a pressing need. There is the potential to do this, in a structured way, using specific strategies (Hallegate, 2009).

There is a substantial discourse in the management literature on what constitutes effective business leadership. For example, Pitcher (1997) identifies three types of leadership styles that influence modern organizations – artists, artisans and technocrats. Each informs the other, and all organizations need some aspects of these styles. The questions become, are these essential qualities properly acknowledged (identified), do they exist in the right areas of the organization (utilized), and do they contribute their expertise at the right time (tactically deployed)? Organizations, such as the Association of Climate Change Officers, have developed a leadership model focused mainly on questions of mitigation. They define the essential spheres of influence for a culture of corporate climate leadership (Kreeger, 2009).

Social learning has emerged as an important area of study related to climate change adaptation. Research has begun to indicate the importance of examining bridging and boundary organizations, shadow systems as well as conflicting goals (Nilsson and Gerger Swartling, 2009). This necessitates thinking about what “managerial” qualities are necessary, recognizing that management and leadership are not necessarily the same thing. What is the role of social learning in the process of adaptation? Can the essential aspects of effective climate change adaptation leadership be clearly developed?

This speed talk will present some initial thoughts on the relationship between social learning and climate change adaptation leadership, and what that might mean in a Canadian context. Ideas are drawn from three communities in the Province of Ontario, Canada that are at various stages of climate change adaptation planning – the Niagara Region, City of Toronto, and Greater Sudbury area.

References:


SOCIAL LEARNING AS A TOOL FOR ANALYZING INTERNATIONAL ENVIRONMENTAL GOVERNANCE

ANNIKA E. NILSSON

In the early literature on international environmental governance, learning to learn was identified as a possible way of dealing with the increasing complexity of international society (Haas and Haas 1995). Since then the number of international environmental regimes and the interplay among issue areas have increased exponentially. It has also become more important to understand interplay with processes at different levels. Moreover, issues related to systems understanding, such as connectivity (Brondizio et al., 2009) and the potential for regime shifts in complex social-ecological systems have come to the fore (Folke 2006; Kinzig et al., 2006; Norberg et al., 2008). This has created a situation where learning to learn becomes even more crucial but also more difficult because it involves a wider range of actors, expertise and norms.

This paper uses an analytical framework based partly on studies of international environmental regimes and assessment processes (e.g. Underdal 2001; Guston 2001; Mitchell et al., 2006) and partly on lessons from studies of social learning in local co-management regimes and organizations (e.g. Siebenhüner 2006; Mostert et al., 2007; Pelling et al., 2008) to look at learning in the development of the international governance architectures for climate change and biodiversity. The analysis aims to identify mechanisms by which knowledge based on perspectives that complements a dominant framing have entered the international policy arena and factors that have hindered such learning.

In the climate regime, knowledge and policy recognition about adaptation to climate change illustrates the importance of overcoming conflicting goals. At the political level, adaptation was initially placed in opposition to mitigation and this perceived goal conflicts has played a major role in delaying discussions about adaptation. Studies from Sweden show that the perceived conflict has had an impact on the potential for learning also in national and local contexts. On a more positive note, sophisticated management of the boundary between the political sphere and scientific sphere (i.e. between the UNFCCC and the IPCC) shows that it is possible to overcome such obstacles to learning by creating the potential for shadow spaces in the governance architecture. The IPCC came to serve as an arena for joining knowledge from different scientific disciplines and thus to reframe adaptation in a way that it is not an alternative to mitigation but a necessary complement for reducing vulnerability (Nilsson and Gerger Swartling 2009).

The perceived conflict that has dominated biodiversity governance has been that between conservation and development. A number of attempts have been made to bridge this gap of which the most well known is the Brundtland Report from 1987. However, in spite of several attempt to reframe the challenge, the tension remains between an economic development agenda and a scientific agenda focused on conservation. Discussions are now on-going about creating an IPCC-like organization to improve science-policy communication. The paper will use of comparison with the climate regime as a stepping stone for analyzing if and how such a body could improve the potential for social learning in the architecture of biodiversity governance.

References:


This study investigates whether social learning in the agricultural sector in Sweden leads to better governance. Governance is studied over multiple levels and includes both management practices at the local level of natural resource management, and higher level policy making processes. Locally, the study focuses on the largest category of farms as continuing amalgamation emphasize the importance of this particular set of actors to future environmental quality. At the policy making level, the focus is on the committees of inquiry and the range of regional and national authorities related to the agricultural sector. Interviews are conducted with farmers, regional and national policy makers, and interest organizations. Semi structured deep interviews probe the learning processes and focus on how the interviewee is learning, both in terms of management practices and learning that occurs in policy making processes. They explore how learning takes place socially between the interviewee and other actors, and aim at understanding the processes for each set of actor cross the different levels of governance.

Better governance is explored as the integration of environmental concerns to mainstream sector practices and priorities. Integration is thus mapped as the level of integration of key national environmental targets to the sector core activity, being production of provisioning ecosystem services from the agricultural landscape. Farmers are asked on management actions taken that contribute to these targets and on utilization of support systems designed to meet these targets. All actors are probed on values, priorities, and the process of integrating the environment in their respective governance context. The study hence focuses on the output of decision-making and management processes, and outcome as changes in human behaviour, and not impact in the biophysical environment.

The analysis draws on two approaches to social learning. Firstly, the level of social learning will be estimated given criteria’s on participation. This includes such aspects as the structural openness of the governance processes, the role of different actors to implementation, and the level of shared responsibility among actors. Previous research on the policy makers within the system of committees of inquiry finds that such social learning is fairly common, but mostly influencing instrumental learning, and only slowly contributing to policy learning and redefinition of goals over time. Social learning will therefore also be discussed as learning within and between different communities of practices. Preliminary results indicate that the learning process among local managers is similarly inherently social, but not necessarily reframing. Each community of practice – both the policy making arena and the local communities of managers – demonstrate their own processes of social learning and construction of shared goals. Evidence of social learning at the critical boundary between communities, and in particular, cross the different levels of governance (through brokers or boundary organizations) exist, but the outcome is limited and the greatest influence on actual decisions that foster better integration of the environment appears to be the monetary instruments. Social learning in this study is mostly limited to each community, and only slowly influencing and changing decision making. The study highlights the need for intentionality in order to unlock social learning as a process leading to better governance at boundaries where goal conflict is common.
BARRIERS AND OPPORTUNITIES FOR SOCIAL LEARNING ON MEXICO’S CARIBBEAN COAST

MARK PELLING

This paper aims to explore the utility of a social learning lens for analysing processes of social transformation where human security is under threat. Empirical material is drawn from a three year study of development, climate change and human security in Quintana Roo, Mexico. This is one of the most rapidly urbanizing regions in the Americas, driven by a tourism economy and exposed to human security challenges from hurricanes, swine flu and global economic perturbations.

The analytical framework to be applied sees social learning as capturing the processes through which values and behaviour are reproduced, up-scaled or mainstreamed within a defined social group. Three kinds of social learning are distinguished. First, diffusion of innovation; this describes the transmission of innovation between individuals with impact at the social level only by aggregation. Second, 1st order social learning, or adapted ingenuity (Freire) describes social learning that enhances the ability of actors to meet existing development goals. Third, 2nd order social learning, or critical consciousness (Freire), social learning that contributes to reconfiguring those goals to better satisfy underlying values.

Data collection included a 12 month period of ethnographic work and more formalized interviews with NGO and local government officials in four towns (Cancun, Playa del Carmen, Tulum and Mahahual). These in turn led to town level workshops and one regional level workshop to provide space for creative discussion and reflection amongst participants on the nature of development and human security for the region.

Results will be presented in the form of storylines. Two development policy contexts have been selected, each revealing its own story in the production and utilization of spaces for social learning:

First, the ways in which climate change is articulated in development practice and policy for social actors in Quintana Roo. Climate change policy remains at a very early stage but distinctions can be made between three kinds of learning experience, each providing scope for studying driving forces and the source of limits to learning. Here diffusion of innovations is exemplified by the promotion of green technology in the hotel sector. 1st order social learning is found amidst the NGO community who take climate change to promote existing sustainable development agendas. Finally a small potential for 2nd order learning has been opened as part of the vision for a climate change plan in Cancun to include reflection circles.

Second, we explore the potential for the social disruption caused by disaster events to open space for social learning. Evidence from Mahahual following Hurricane Dean suggests that this space is temporary and the outcomes are quickly overwhelmed by resilient and dominant development norms. In this case there is some legacy of cooperation between actors which arose in the aftermath of Dean, but this is greatly limited by an underlying lack of trust. Dissemination of innovations is unhindered but any application requiring social solidarity is greatly constrained, even when development gains are proven.

Research was funded by the UK’s ESRC. For background detail please see:

http://www.kcl.ac.uk/schools/sspp/geography/research/epd/projects/hslgmc/

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MULTI-LEVEL WATER GOVERNANCE IN CANADA: PROBING THE CONNECTION BETWEEN LEARNING AND POLICY TRANSFER

RYAN PLUMMER1,2, ROB DE LOË3, BECKY SWAINSON3

Water security is a critical environmental issue throughout the world and in Canada. Well established problems (e.g., the provision of safe drinking water, protection of drinking water sources, competition among water users) are, and will, be exacerbated by climate change. Conventional, top-down approaches to dealing with uncertainty and addressing water problems have had mixed success. Increasingly, it is widely accepted that solutions to water problems necessitate strengthening water governance. Unfortunately, the capacity, motivation and experience needed to develop governance strategies that can respond effectively to current and emerging water problems are highly variable. Water researchers and policy makers recognize that this unevenness creates opportunities for policy transfer – the process of borrowing and adopting ideas and institutions from other places and contexts. What promise, if any, does policy transfer have for water governance?

The Improving Water Governance Through Policy Transfer and Lesson Learning project aims to strengthen understanding of the processes through which policy transfer occurs in water governance, and to apply this knowledge to improve capacity for developing innovative governance strategies that respond to pressing challenges related to water resources in Canada. The project is empirically positioned in relation to a network of over 30 practitioners (e.g., government officials, staff from local water management organizations, industry representatives, civil society groups and First Nations peoples) who are involved in source water protection governance across Canada, at scales ranging from local to national. One of the main areas of inquiry within this project concerns how practitioners participating in source water protection governance learn lessons from each other’s experiences. The remainder of this summary presents the conceptual approach being developed to probe the connection between learning and policy transfer.

An emphasis on learning is clearly evident in emerging forms of environmental and water governance, especially in approaches that stress interaction, collaboration and adaptation. Paradoxically, the manner in which learning is understood and employed in this literature is often poorly developed and uncritical. In the policy transfer literature, learning is identified as important to the prospect of success; however, specific investigations of learning and learning processes are scarce and little is known about how it occurs among actors engaged in water governance. To probe the connection between learning and policy transfer, in the context of multi-level water governance, we propose a framework with two main dimensions. The first dimension concerns policy transfer and is based on the Dolowitz and Marsh (2000) model of analyzing the process of policy transfer. The second dimension of the framework concerns learning. In drawing upon recent efforts to enhance the specificity with which learning is used in relation to adaptive capacity, resilience and environmental governance, we adopt Diduck (in press) frame of learning processes at several levels of social analysis (individual, action group, organizational, network, and societal). Multi-level connections or linking aspects of learning processes relating to policy transfer that scale up and scale down within multi-level water governance are of particular interest. Guiding questions and sensitizing concepts offered in association with these dimensions provide an entrée for the upcoming empirical part of the inquiry. Undertaking the research with a network of water governance practitioners in Canada offers an opportunity for place-based empirical work on ways in which multi-level governance can be strengthened.

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PAVING THE WAY FOR THE EU REGIONAL COHESION POLICY IN THE BALTIC SEA REGION: CO-CONSTRUCTING AGRO-ENVIRONMENTAL MEASURES THROUGH STAKEHOLDER AGENCY

NEIL POWELL¹, RASMUS KLOCKER LARSEN¹, MARIA OSBECK¹, AND SUKANDA JOTIKAPUKKANA¹

The so called health of the Baltic Sea is now receiving significant international attention. HELCOM, the commission charged with the regional level management and governance of the sea, has implemented the Baltic Sea Action Plan (BSAP) as a means to address crucial environmental issues. The BSAP has been endorsed by the heads of delegations from the 9 Baltic Sea Region (BSR) countries. Despite this, country level compliance is extremely weak. 8 of the 9 HELCOM countries are EU member states and thereby implement a number of directives and policies that could potentially contribute to meeting the goals of the BSAP. Indeed a number of these countries articulate that by fully complying with the EU Nitrates Directive, they automatically meet goals for nutrient reduction within BSAP.

Evidence from an assessment of challenges implementing policies to meet agro-environmental goals in the BSR suggest that; riparian countries give priority to the implementation of the national actions embedded in coercive EU policies rather than the regional voluntary actions within the BSAP. In many cases, to focus just on satisfying an EU directive at country level can magnify environment problems at a regional level. Stringent measures employed by Denmark in accordance to the Nitrates Directive have forced a growing pig industry to continue its expansion in other BSR countries with less stringent policy environments such as Lithuania and Belarus. Whilst this trend supports Denmark in meeting its national goals it does nothing to address regional goals. The problem is simply moved within the BSR, and in this case magnified. This situation is characteristic of “resource dilemmas” whereby actors (countries) revert to the type of self fish behaviour associated with open access resources, the so called “tragedy of the commons” as described by the prisoner’s dilemma game matrix.

The Interreg Baltic Compass project provides support to the EU in critically reviewing the shortcomings of existing agro-environmental policies in fostering the territorial cohesion policy in the BSR. An enabling methodology for this policy support is to engage agencies from BSR countries in a dialogue with stakeholders to reflect on the challenges posed by the implementation of agro-environmental targets. Measures to reduce nutrients as part of stakeholder dialogues have been critiqued in terms of capacity to promote for example biodiversity, bio-security and productivity at farm level. It assumed that this process of social learning will lead to the co-construction of measures in a policy setting, that allows BSR countries to recognize that the BSR system level benefits of transboundary cooperation outweigh the benefits of defecting and single mindingly pursuing country targets; the interdependence game matrix. The support to policy adaptation by the Baltic Compass project also paves the way for the EU to implement a wider set of goal orientated agro-environmental policies that allow for greater national level adaptation and innovation of associated measures.

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Humans have become a major force of nature. Our geological era has been named the Anthropocene. Our future is anthropogenic: its drivers are our own doing. The situation is comparable to health promotion. People suffer chronic diseases identified and diagnosed by medical science and epidemiology. But the causes are behavioural and the cures require social science. Planetary life support systems, as identified by SEI, are deeply affected by humans and for some safe operating levels have already been surpassed. But how is society going to use that science?

Society has to change. The most widespread social science is economics, and although that body of knowledge is undergoing reconstruction, the economics that is deeply ingrained in society and its institutions is neo-liberal with its assumption of selfish pursuit of wealth as the human driver and its methodological individualism that explains societal phenomena as the emergent property of individual behaviour. Our society is virtually blind to institutions. We have enshrined individual freedom and rationality, private property, market liberalization and corporate organization, and generate collective madness. We have no knowledge on which to base concerted action to avoid it.

A challenge for social learning! I use the metaphor of the cognitive system for understanding societal behaviour. The cognitive system features perception (gets), emotions (wants), knowledge and action. These elements when coherent allow effective action in the domain of existence. But structural coupling with the domain also requires correspondence. Coherence can be so strong that correspondence is lost and vice versa.

People’s wants are ever expanding as a result of continuous advertising. Collectively we seek economic growth: without it, society is in crisis. Gets are measured by economic indicators, such as GDP, the consumer price index, employment and stock market shares. Our knowledge base, neo-liberal economics, is enshrined in the institutions that underpin our markets, our media and our politics. In terms of action, we work, compete, enterprise and consume; at a collective level we promote growth and give ever more control over public space and collective wealth to corporations.

How we can turn that cognitive system around? A formidable challenge: ample feedback from the flimsy and vulnerable Troposphere remains largely ineffective: it is inconsistent with core business. We hate cognitive dissonance. The IAASTD concluded that business as usual is not an option. In practice it seems the only option.

My paper suggests social learning strategies for cognitive system innovation. Examples:

- Strengthen the feedback from global “epidemiologists” (such as SEI) in our daily news to enhance the realization of global madness.
- Identify and enhance understanding of the vulnerabilities of the system.
- Claw back public space and collective wealth that we have handed over to advertising for forming public opinion and social learning.
- Invest in interactive processes for evolving a new widely shared body of social knowledge, anthropogenics that can inform adaptive and precautionary concerted action and would legitimate public interest policies.
SOCIAL LEARNING IN NATURAL RESOURCE MANAGEMENT: A “WICKED” ISSUE FOR RESEARCHERS AND PRACTITIONERS

SAMANTHA STONE-JOVICICH

Despite its increasing popularity, practitioners and academics alike who are interested in the role of social learning to address natural resource management issues are faced with significant challenges (see Armitage et al., 2007; Muro and Jeffrey, 2008). This is in part because social learning is a “wicked” issue. Similarly to “wicked problems” (Conklin, 2001), social learning is complex, ambiguous, and dynamic both as a concept and in practice. This has implications for both social learning research and its use to guide natural resource management decisions and actions. On the one hand, weaving through the vast social learning theoretical literature and on-the-ground experiences to identify what elements of it to apply or investigate is a difficult task. On the other hand, the lack of a tight coherent concept and body of work opens up possibilities for exploring existing commonalities and complementarities, and potential new elements and synergies.

This speed talk focuses on work-in-progress in the development of a social learning framework for better understanding and measuring social learning in the context of NRM. It discusses some of the challenges that have been encountered in putting this framework together and ways forward. Building on the existing rich body of theoretical analyses and applied experiences worldwide, the proposed framework focuses on two key aspects of social learning: (1) conditions that influence, positively and negatively, social learning processes and outcomes, and (2) social learning outcomes. The overarching objective of the framework is to develop scientifically rigorous research methods to measure social learning and the conditions that enhance and hinder social learning. The aim is to enable the capture of generalizable data that can permit comparisons across different social learning contexts and experiences, as well as simultaneously produce findings that are context-specific, -appropriate and -useful.

References:


1 CSIRO Ecosystem Sciences
LEARNING WHAT NOT TO DO: A NECESSARY FRAMING FOR THE INTEGRATED GOVERNANCE OF SOCIAL-ECOLOGICAL SYSTEMS

J. DAVID TÀBARA¹, ÅSA GERGER SWARTLING²,³, ELEONORE PAUWELS⁴, BEVERLY THORPE⁵, PAUL M. WEAVER⁶,⁷, AND INGRID KÖKERITZ²

Learning what not to do is a necessary framing for the integrated governance of social-ecological systems. In liberal democracies such framing is often seen as a threat to the freedom of individuals and corporations, rather than the guarantee for the long-term viability and quality of the social-ecological systems in which they operate. Understanding the constraints and opportunities for bringing such framing into policy discussions is of paramount importance in all sustainability learning processes. In this paper, we look at diverse examples of technological innovation, environmental pollution control, and natural resource management in which societies learned what should not be done to prevent unwanted negative effects on global and regional social-ecological systems. Our aim is to contribute with an effective theoretical framework which can be used to deal with this common and often neglected prerequisite of the integrated governance of global environmental risks and challenges.

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Processes of natural resource management involve a deep grade of understanding of ecosystems dynamics. Ecosystems are characterized by adaptation and emergence, in the way that ecological systems adapt to change and depend on the interrelations of multiple components. Likewise, ecosystems and other complex systems are characterized by central concepts such as nonlinearity, chaos, evolution, co-evolution, and self-organization.

The understanding of the complexity of ecosystems assumes conceptual challenges among different professional groups (e.g. resources extractors, policy makers and institutions). Consequently, we need to enlarge our understanding of cognition of systems thinking on dynamics and its professional implications in natural resource management of landscape and aquatic systems.

Some investigations have been carried out on the content of local and traditional ecological knowledge and its implications for management practices. Nevertheless, research into cognition of systems dynamics is almost non-existent.

This study is a part of a project that concerns ecological knowledge and sustainable resource management in two study areas in Sweden: Lake Vättern and the Archipelago of Blekinge (Baltic Sea). It focuses on fishermen’s ecosystems thinking and describes possible implications of ecosystems thinking on dynamics in resources management.

We present preliminary results of this study at Lake Vättern, the sixth biggest lake in Europe, 1912 km², where about 250,000 people take water for their daily consumption and many of them benefit of fishing (The County Administrative Board of Jönköping, 2009). The fishing of great charr (Salvenius umbla) has been strongly reduced and economically compensated partially by the fishing of American crayfishing (Pacifastacus leniusculus). This aquatic system was one of six-“pilot” Projects developed by the Swedish Board of Fisheries in 2004. This “Co-management Initiative Project” worked successfully and finished in 2009 with an official document that will be the road map for management of the ecosystem.

The results show that several fishermen have a holistic understanding of the ecosystem and its components relationships. First, time and place are two relevant elements of fishermen’s understanding of ecosystems different dynamics. Secondly, invisibility in aquatic systems is a barrier for the understanding of the interrelations between system components and ecosystem function. However, fishermen are able to produce hypothetical connections between biological and non-biological components, and most of them recognize the influence of changes from abiotic factors such as temperature, wind, oxygen, water components and water nutrients.

This paper presents results that are most relevant to discussions on how to improve natural resource management. It puts a particular focus on knowledge and the challenges on understanding systems dynamics and complexity. Such understanding is of importance as natural resources are declining, demand is raising, and unexpected changes due too for example climate change constitute real difficulties for management.

Finally, this paper discusses its contribution with regards to improving processes of social learning and natural resource management. Ecosystems thinking seems to be influenced by communication and practical or/and educational experience. These two aspects are significant in processes of transformation and innovation linked to the resilience of social-ecological systems.

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