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Environmental Evaluation Supporting the Implementation of SDGs and Transformative Policymaking

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Track B Abstracts

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Session 1B Evaluating international settings for sustainability

Jani Lukkarinen. Evaluating cross-sectoral and cross-scalar forest policy coherence in Europe from the transformations perspective

European forest policies have been guided by the subsidiarity principle, which has caused increasing institutional fragmentation across the governance scales and sectors that (Sotirov & Arts, 2018). In policy implementation, the incoherent policy goals can create conflicting translations regarding e.g. the role of forests in climate mitigation (Makkonen et al., 2015). The emergence of transformative policies on the EU level (The Green Deal, EU Biodiversity Strategy for 2030) further challenge the status quo by requiring stronger trans-sectoral and trans-scalar policy designs to overcome major sustainability challenges.

In this paper, we analyze incoherence of policy goals on forest ecosystem services (FES), underlying governance mechanisms and sharing of responsibilities of biodiversity, bioeconomy and forest strategies implemented in four European countries (Finland, Germany, Norway and Sweden). By evaluating the main cross-scalar and cross-sectoral incoherence dynamics, we suggest policy areas, where transformative policies require special attention and overlooked aspects in the incumbent governance frameworks.

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Marko Katila & Petra Mikkolainen. Evaluating contribution to SDG 13 Climate Action: Linking transformative change, theory of change and Quantitative Content Analysis.

A mixed-method evaluation approach applying Quantitative Content Analysis (MAXQDA analytical software) was used to assess the extent to which an international development organisation X has contributed to SDG13 and the Paris Agreement. For this purpose, two sets of documents were analysed; 63 climate-change related evaluations and 137 project design documents related to REDD+ commissioned by the organisation. Two conceptual frameworks were developed and applied to the datasets; one on transformational change to frame the overall evaluation, and another one linking the work on REDD+ to SDG13 and Paris Agreement as well as the Warsaw Framework of the UNFCCC.

The concept of transformational change was understood as "...relevant engagements that help achieve deep, systemic, and sustainable change with large-scale impact in an area of global and national environmental concern". In the evaluation theory of change, the concept of transformation included changes, for example, in behaviour, incentive framework, enabling policy and institutional environment. These changes link outcomes to large-scale impacts concerning low-carbon and climate-resilient development. The dimensions and characteristics of transformational change were captured using keywords derived from UNFCCC Decisions and SDG13 Targets and Indicators. Using MAXDictio, groups of keywords were created. The hierarchy was based on the structure and features of the transformational change framework.

Anna Navarro. Can Science Lead the Green Transition? STRN as an epistemic community

The evaluation process is an integral part of the public policy cycle. Fundamental to the evaluation process is the definition of what should be accessed, for what reasons and what are the relevant metrics. This definition of priorities in the field of public policy is a complex task, which therefore depends on counseling with epistemic communities. We argue that, both in the implementation phase and in the evaluation phase, the epistemic community has a crucial role in informing and guiding public policies. It is possible, however, that this community (and we characterize STRN as the most important epistemic community in this field) is more successful in influencing the implementation / agenda than in the public policy evaluation phase. We must (i) characterize STRN as an epistemic community in the field of transitions for sustainability, (ii) investigate its role in the influence of public transition policies and (iii) observe whether there is a balance or imbalance of this science - political channel throughout the phases of the public policy cycle.

Session 2B Evaluating sustainability transformations on the ground

Renuka Thakore. Enabling evaluations and actions for urban transformations governance through STRIDES – Strategic Tri-level Reliant Interventions for Delivering Equality and Sustainability.

The STRIDES project focuses on transformation processes in three areas of crucial relevance to sustainable development at city level: equality in terms of access to energy, food, housing, employment, and mobility, and availability and understanding of products and services, opportunities, technologies, skills, policies, capabilities, and decision-making strategies. The objectives include capacity building for creation of equality and sustainable policies that could deliver integrated health, economic, social, environmental, and institutional (multiple) benefits and foster knowledge exchange among relevant local stakeholders of the city-level system. This will result into development of strategic interventions for co-creation and enhancing the visibility of the dynamic networks at the city-level system.

The research develops the translational knowledge from exclusive hidden dialogue of composite correlated multi-perspective sectoral stakeholders by gathering systems knowledge and expert knowledge of responsive emerging strategies. The research will investigate innovation and technology adoption barriers

and drivers to maximise diffusion of technologies and knowledge; engagement and integration of stakeholders' capabilities; including innovation opportunities. System-wide relevant regulations and resource use analytics will be used to designing optimal efficient interventions and policies undertaking a holistic approach where it could be compatible in embracing wide range of opportunities from isolated minute change to comprehensive reinventing sectoral trajectories.

Alwynne McGeever. SHARE-IT: a new tool to estimate, communicate and improve the sustainability impact of food sharing initiatives in cities.

An increasing number of initiatives which facilitate collective practices of growing, cooking, eating and redistributing food are looking to address important environmental, economic, political and social issues.This research aims to deliver a free online toolkit that helps urban food sharing initiatives estimate, communicate and improve their sustainability impacts and show how their work contributes to the Sustainable Development Goals. This increases the visibility of transformations ongoing in cities towards a more sustainable urban future. The toolkit is called SHARE IT and is available to any group that engages in the collective practices of growing, cooking, eating or redistributing food in a city. The tool gathers quantitative and qualitative data for 34 indicators, to make visible the initiative's impact by tackling particular environmental, economic, political and social issues. SHARE IT enables the communication of these impacts by generating a tailored sustainability impact report. SHARE IT is designed to be an open access and flexible tool as food sharing initiatives exist in many different forms with different capabilities and resources available. This research aims to assess the user feedback on the pilot SHARE-IT tool, disseminate the tool to a wider group of users for further testing and assess the potential uses of the sustainable impact assessment reports generated by the tool for food sharing initiatives, funders and policy makers

Jonne Silonsaari. Developing mobility management evaluation to support transition towards active and sustainable urban mobility

Car dependent urban transport system is one of the most persistent lock-ins of urban life, deemed extremely difficult to reverse. In addition to the physical environment and technological infrastructures, the car-system manifests itself in culturally and socially constructed practices and lifestyles. Moving around is not considered as 'transport', but 'mobility' as mobility practices are driven by much more than the sheer necessity to move from A to B.

Policy instruments embracing this view have not reached their full potential. Perhaps the most apparent of them is mobility management. The concept aims to promote sustainable transport and reduce single occupancy car use by affecting peoples attitudes, beliefs and perceptions shaping urban mobility practices. Hence, it refers to 'soft' measures (communication, education, organisation of services and coordination activities etc.) enhancing the effectiveness of "hard" measures (land use, physical and technological infrastructures).

The Finnish government has funded local mobility management projects through different programmes since 2010. They have especially concentrated on walking and cycling promotion. Despite the perceived potential of such measures, the funding remains modest and evaluation almost non-existent. The impact of mobility management on the interplay between 'soft' and 'hard' measures, sector-crossing cooperation and governance and the entire realm of social and cultural factors affecting mobility practices need social scientific tools for evaluation.

As a part of a nationwide research project on sustainable and active mobility (www.styletutkimus.fi/en), we are conducting a local action research study to gain new knowledge for the development of mobility management evaluation in Finland. The project engages an infamous subset of car-dependent mobility

practices: children's chauffeuring to leisure activities and hobbies by bringing together local key stakeholders to a co-creation process.

Daniel Gabaldón-Estevan. Cities as complex innovation systems: governance for mitigation and adaptation.

In this work we look at the governance of urban agglomerations as the governance of complex innovation systems where human activities, in their different dimensions, can be shaped in order to transform societies towards sustainable development. The innovation system and sustainability transitions approach identifies the agents and its connections in different contexts such as territories, sectors or technologies allowing an improved understanding on how innovation towards sustainability transitions function and how can it be achieved. This literature can, by adopting a multilevel systemic approach to the study of urban areas, provide an innovative approach to understand urbanisation processes of growth and conditions for the transition to a more sustainable future.

We discuss the opportunity of considering urban areas as complex and interrelated innovation systems. In this way, their social, economic, political, cultural, physical and environmental dimensions can be analysed and its performance studied in order to achieve far-reaching changes along different dimensions (technological, material, organisational, institutional, political economic and socio-cultural) that would promote sustainability.

We assume that: i) there exist limits to economic growth as it is understood in mainstream politics and mainstream economics; ii) an important part of the scientific community, together with other social actors, agree on demanding big changes on development strategies in order to reconfigure our societies according to sustainability; iii) to achieve sustainability, far-reaching changes along different dimensions (technological, material, organisational, institutional, political economic and socio-cultural) have to occur; iv) governance of urban areas can be conceived as complex and interrelated systems where their social, economic, political, cultural, physical and environmental dimensions can be analysed as innovation systems the performance of which can be analysed.

Session 3B Evaluating steering mechanisms for sustainability

Cristina-Gabriela Mitincu. Content analysis as a tool for evaluating the sustainability of environmental permits.

More than 70% of Europe's citizens reside in an urban areas. Thus, sustainability has become a major challenge for urban human society by proposing a redefinition of the connection between human society and nature. Strategic environmental assessment (SEA) is the most important tool in the European Union to manage the environmental impact of plans, strategies and policies in order to balance socioeconomic development and environmental protection. In consequence, our analysis aims to evaluate the content of environmental permits, as the final results in a strategic environmental assessment process, to explore how they address sustainability. Content analysis is a useful method for identifying, organizing and indexing information. So, we apply an evaluation protocol in order to systematic evaluate 213 environmental permits issue din Romania, in urban areas, between 2009 and 2017. Results show that the environmental permits address sustainability on its economic-environmental-social-institutional dimensions slightly below average and lacks in particular relevance in terms of the social (i.e. social justice and cohesion, living standards) and economic dimensions (i.e. financial development, developing services). Our findings could provide guidance to the policymakers by showing the strengths and weaknesses of the environmental permits in terms of sustainability and suggesting ways to manage them regarding the current urban transformations. Regarding

the methodological implications, policymakers can make use of the protocol and the results to raise awareness of the weaknesses and strengths in the environmental permits as well as to ensure more across-the-board consensus about them.

Maria Dubovik. Aligning implementation of policy objectives and the SDGs via evaluation of performance and impact of nature-based solutions

The current EU development agenda focuses on mitigating and adapting to the impacts of climate change, conserving and restoring biodiversity, and ensuring human well-being. Sustainable urban water management plays a key role in each of these areas. Nature-based solutions (NBS) have emerged as an umbrella concept that combines social benefits with sustainability and conservation strategies, encompassing concepts such as ecosystem-based adaptation, green infrastructure, water-sensitive urban design, and ecosystem services. The Urban Nature Labs (UNaLab) project aims to establish a framework for NBS implementation in cities based upon the outcomes of NBS demonstrations in Tampere (FI), Genova (IT) and Eindhoven (NL). Decentralisation of urban water systems through the implementation of NBS or hybrid infrastructure must be underpinned by a robust roadmapping framework, including clear indicators of NBS performance and impact. The indicators must align with applicable policy instruments, as the water security and resilience of urban areas are directly linked to municipalities' legal obligations. In this context, the European Green Deal strategy supports the adaptive management of assets. The present study explored the existing policy context with respect to NBS targeting urban water management, including the planning, implementation and evaluation of deployed solutions. Although the EU-level frameworks and legal acts provide a holistic assessment, specific metrics in support of policy objectives are rare. A draft assessment scheme for water resource management-focused NBS and hybrid solutions aligned with the People-Planet-Prosperity pillars of sustainable development is proposed herein.

Sarah Seus. Insights from the evaluation of the Framework Programmes for "Research for Sustainable Development" (FONA) of the German Federal Ministry of Education and Research.

With the adoption of the first framework programme "Research for Sustainable Development (FONA) in 2005, the German Federal Ministry of Education and Research (BMBF) shifted from funding environmental research towards a policy framework for funding research for sustainable development. The research funded under FONA is less defined by topics but rather by structural requirements towards the research projects: Interdisciplinary (interaction of different scientific disciplines), transdisciplinary (inclusion of non-scientific actors especially from (local) public administration and civil society) and the adoption of a systemic approach.

The evaluation covers the two framework programmes (2005- 2014) and looks in particular at the effectiveness and impacts of the funded research (approx. 4 billion Euro) with a specific emphasis on the above mentioned overarching characteristics of research for sustainability.

The evaluation generated different insights on how a systemic policy approach stimulated a great variety of results, ranging from improved knowledge and skills, new corporate strategies up to significant changes in the research landscape. The evaluation also identified several options for improvements: One challenge remains the lived transdisciplinarity at eye level. Thus, greater support is needed for the implementation of transdisciplinary projects in order to better exploit their potential for practice-oriented research. At the strategic level, mission orientation should be strengthened by including stakeholders in the mission formulation, orientation towards the Sustainable Development Goals and, the definition of goals and (measurable) success indicators.

Lisa Eriksson, Eva-Lotta Päiviö Sjaunja, Lena Neij. Evaluating a transformative measure – experiences from an evaluation based on the Swedish e-bike subsidy.

In the 2018 budget, the Swedish Government introduced an electric vehicle subsidy as one measure in the environment and climate efforts. The aim of the subsidy was to improve conditions for climate-smart

transportation by subsidizing private purchases of electric bicycles, mopeds, motorcycles and outboard motors. The subsidy was also to contribute to improved accessibility and public health. The Swedish Environmental Protection Agency processed the applications and payments. There was an interest for more knowledge on effects from the subsidy. An evaluation was initiated within the Swedish EPA and the results give answers on questions like who is buying an electric bicycle and why, how it is used and what societal consequences are electrical bicycling creating? The evaluation is an example of the need to evaluate transition and where the Swedish EPA has chosen to analyze the knowledge from a broader perspective. There are many actors that might be interested in using the evaluation, for example the Government, biking organizations, researchers, citizens, etc. To have many perspectives included in the evaluation is important for its use. However, performing an evaluation aiming for a broader transformative perspective also means challenges and new experiences when it comes to delineations, methods and effects.

After the presentation, thoughts on challenges and possibilities with using a transition approach in evaluation practice will be explored and discussed in the perspective of transformative changes in society. Discussant is Professor Lena Neij at The International Institute for Industrial Environmental Economics (IIIEE), and colleague/s from earlier research project Transition Governance.

Session 4B Methods to evaluate transformations and experiments

Pablo F. Mendez. Testing a formative evaluation methodology for observing and learning about transformative change towards sustainability – An empirical case of Nature Based Solutions for climate-resilient cities.

There are increasing calls worldwide for steering innovation policies towards systemic, transformative change to sustainability. Within that context, learning is being increasingly regarded as a core feature of sustainability transitions: learning is a condition for the definition and implementation of new policies, embodying different goals and different means of implementation and governance. Here, we explore its role in the context of a formative evaluation process initiated by the Transformative Innovation Policy Consortium (TIPC) aimed at appraising experimental interventions at policy, program or project level. Its methodology is based on learning and reflective processes co-designed with practitioners on the ground, through the use of two main means: (1) a Theory of Change approach to unpack the outcomes and long-term aims of an intervention and their relationship with the tools and activities that the intervention under evaluation deploys; (2) a novel conceptual framework centred around a typology of Transformative Outcomes and second-order learning, to identify an reflect collaboratively about leveraging processes and outcomes critically implicated in transformations. We showcase an application and preliminary results of the methodology in an initiative aimed at upscaling Nature Based Solutions for urban resilience against climate change, as part of a project funded by EIT- Climate KIC and led by TIPC.

Jonas Colen Ladeia Torrens. Adapting developmental evaluation to empower urban experimentation programmes.

Urban experimentation (UE) is an emerging and still insipient mode of governance for addressing complex socio-technical systems with persistent challenges. Civil society and local authorities around the world are tentatively establishing experimental programmes, aiming to create the necessary institutional conditions to enable experimentation and amplify its results. Evaluation and learning are vital for executing these programmes, to ensure robust results, facilitate different processes of amplification, and legitimise their existence vis-a-vis traditional bureaucratic settings. However, little guidance is available about how to structure such programmes or how to conduct their evaluation. Most of the literature has focused on

evaluating individual socio-technical experiments. We contend that the principles of Developmental Evaluation (Patton 2011, Gamble 2008, Dozois et al. 2020) could serve well those purposes. Derived from experiences in social innovation, DE stands out for focusing on the accompaniment of emerging innovative actions aimed at systemic change. It combines evaluative rigour with a flexible, co-creative process to empower the participants to meet their aims. Rather than validating a predefined theory of change, DE contributes towards 'dynamically reframing' those theories, probing different assumptions to achieve deep learning. To illustrate our argument, we discuss the ongoing DE of two experimental programmes at the Amsterdam Municipality.

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Stephen Williams. From evaluation to impact: Approaches to assessing transformative sustainability projects.

Fostering sustainability transformation is a pressing global societal challenge. Transformative projects such as Sustainability Transition Experiments (STEs) leveraging a transdisciplinary research approach have recently been proposed as a method to accelerate such sustainability transitions. However, there is a presumption in the literature and by practitioners that STEs will lead, as a result of societal effects, to sustainability transition. We need methods by which to evaluate this causal claim, to understand what is happening within transformation processes, and to provide insight, not just to researchers, but also to STE designers and facilitators as to the efficacy of their processes. Societal effects evaluation gives us important information on the short-term outputs and medium-term outcomes of sustainability transition experiments yet these approaches do not explicitly address the issue of societal transition; instead they typically assume these impacts will happen as a result of societal effects.The literature on societal effects is also vague on how 'transformational societal change' is to be conceptualized, not to mention how to assess the contribution of an STE to such change. We propose the concept of Sustainability Transition Impacts to address these issues. Building on a development pathway approach, the assessment framework integrates socio-technical systems and governance, interlinking regime rules and behaviours, multi-scale system interactions, actors and practices, and socio-ecological systems into a comprehensive framework. We use the SDGs to assess the direction and comprehensiveness of development path change in our proposed evaluation framework.This paper further explores the use of SDGs in project assessment, capturing impacts on linked socio-ecological systems in transition, and practitioners (working in concert with transdisciplinary researchers) may adjust their course and navigate through an ever-changing systems landscape.

Session 5B Transformative evaluation concepts and indicators

Bengt Johansson. Assessing low carbon transitions. A conceptual model.

Assessing low carbon transitions is important but also challenging as we are assessing future developments. We propose a conceptual model for low carbon transition assessments relating different types of assessments to each other. The model includes three different assessment types: i) Monitoring, ii) Policy evaluation, and iii) Building domain knowledge. Monitoring informs whether society is on track for meeting politically established goals. Policy evaluation concentrates on the effects of specific, relevant policies and instruments. General and domain specific knowledge building through research and other processes is

important both for identifying assessment criteria as well as designing relevant monitoring and evaluation systems. Monitoring could cover direct outcomes such as greenhouse gas emissions or diffusion of low carbon technologies. But with a long-term transitions perspective it is as important to also include the preparedness for change with regard to factors such as visions and expectations, feasibility of policies and policy instruments, innovation networks, and technology readiness. Assessments must build on contributions from a range of actors for different perspectives, although the scope and ambition will depend on the amount of resources allocated. The model can be used as a heuristic for linking complementary assessments and identifying gaps in the assessment process.

Hanna Salo. Developmental evaluation of the Finnish sustainable development policies and transformation pathways: What would be the next level questions?

The first national sustainable development policy evaluation in the SDG era was conducted in Finland in 2018-2019. PATH2030 evaluation was drafted in a close dialogue with policy-makers. The evaluation utilised the 4Is approach (Brockhaus & Angelsen 2012) that analyses the role of institutions, ideas, interests and information in transformations.

The evaluation revealed that Finland's sustainable development policy has succeeded in being inclusive. Yet, decisions are often short-sighted and practical solutions may spark fierce debates. The key challenges include the environmental pressures caused by unsustainable consumption patterns and the increasing social inequality. Thus, reaching the 2030 goals would require many concrete system-level changes.

From many perspectives, the PATH2030 evaluation was transformative. Consequently, the evaluation results were discussed broadly at the Parliament and the main recommendations are included in the current government programme of Finland. However, during the evaluation, the project team saw a mismatch between the evaluation questions of the pre-given evaluation and 4Is frameworks. The mismatch was related particularly to discussions on phenomena- and knowledge-based, impact-driven and empathetic governance. Our hypothesis is that 1) these discussions could be at the heart of more transformative policy-making also in the context of Agenda2030 implementation, and that 2) by triangulating the 4Is, we could combine its back-to-basics systemic approach to the buzzling discussions on how to steer societies to sustainable tracks in the 2020s.

Matthew Daly. Establishing a framework for market transformation indicators - Developing a baseline and methodology for future evaluation of the Climate Change Fund (NSW, Australia)

Over a five-year period, the NSW Climate Change Fund (CCF) will allocate AUD 1.4 billion to a broad range of programs that contribute to achieving net-zero emissions in the state by 2050. Given the long time frame of the overall goal, there is a particular focus on measuring the long-term impacts of policies, including market transformations. The real-world evaluation of the transformational impact of environmental policies is relatively limited outside of energy efficiency markets. Therefore, a specific, yet adaptable, approach was required for the broad policy objectives of the CCF.

A multi-disciplinary team from the University of Wollongong developed a methodology for baseline market characterisation to enable the effective future evaluation of environmental policies. This methodology draws upon literature on energy efficiency market transformations and sustainability transitions, particularly the multi-level perspective.

We will share the framework for market transformation indicators that was developed and the methodology used for baseline data collection, including a focus on mapping and investigation techniques along the length of the supply chain. Practical application of the framework will be examined using a case study of the

household battery energy system market, with a discussion on the strengths and limitations of the framework.

Mihai-Razvan Nita / Ana-Mari Popa: Sustainability indicators used in the environmental planning process in Romania

Sustainable cities and communities represent the topic of the most important Sustainable Development Goal of United Nation, European Union and states around the world. The goal is to make cities and human settlements inclusive, safe, resilient and sustainable considering the times we are now living. In Romania sustainable development is presented with its components, but not integrated as a workflow or a framework with all its interactions. Our paper aim is to analyze the environmental planning indicators. For doing this we analyzed 42 environmental local plans for action Romanian counties. We check the existence of the indicators (especially quantitative), the domain of sustainability they are connected to, types and examples of the most frequented used. From 42 analyzed documents, only 35 of them present sustainable indicators generally from environmental domain (over 60%), but also governance domain. Less 17-20% are from domain such as social or economic. We analyze over 1211 groups of indicators that refers to green areas, waste disposal, pollution (especially air and water), investments and infrastructure. The indicators we analyzed are related with community's issues by monitoring the progress till resolving them. It is important that the indicators to be aggregated and follow the links between them, not only to use them individually only from an issue perspective.