Welcome!

It is our pleasure to welcome you to Stockholm for the Transformations2015 conference!

Transformations2015 focuses on transformations towards sustainability: the challenge of solving problems in the Anthropocene and creating conditions for good lives for people, today and in the future, while strengthening Earth’s life support system. The aim of the conference is to build a better understanding of large-scale systemic changes and fundamental redirections in people-planet relationships that can have an impact at scales that match the challenges of the Anthropocene, in both developed and developing country contexts.

Increasing the understanding of such change requires collaboration across academic disciplines. We want the conference to be an interactive space that gathers leading international scientists, from different academic disciplines, across natural and social sciences, humanities, economics, and technology development, to exchange experiences, share analytical approaches, and discuss insights on transformative change. The discussions will be focused around four specific sub-themes - How do transformation processes unfold in different types of systems? Under which conditions can new ideas, experiments and initiatives have large-scale, systemic impacts? What is the role of individual agency and networks in driving transformative processes? How do new types of research methods approaches for studying sustainability transformations differ from current modes of research?

We have chosen a dynamic conference format that includes a mix of plenary sessions with keynotes and panel discussions, a series of transdisciplinary MashUp sessions focusing specifically on the conference’s four sub-themes, a long list of Speed Talks that allow for direct interactions between presenters and the audience, a number of Deep Conversations with the aim to thoroughly discuss certain selected topics, and, lastly, a set of Interactive Sessions, including Games, that explore experiential learning on transformative change.

In order to use and test the existing knowledge on transformations among a broader set of stakeholder, the conference will be preceded by a series of Transformation Labs (TLabs) that will focus on a few selected problem domains. Exploring the interface between social, technological and ecological systems the TLabs intend to connect people who do not normally work together. TLabs will enable invited change-makers, such as social entrepreneurs, academics, design thinkers, policy makers, business representatives, artists and others, to co-design initiatives to deal with urgent sustainability challenges. The insights and experiences from these will be fed back into the conference and help set the scene for the scientific discussions.

We wish you a happy, creative and thought-provoking conference!

Sincerely,
Per Olsson and Elin Enfors Kautsky
Conveners, Stockholm Resilience Center
Keynote Speakers and Panelists

Frances Westley joined the University of Waterloo as the JW McConnell Chair in Social Innovation in July 2007. In this capacity she is one of the principle leads in a Canada wide initiative in social innovation, SIG (Social Innovation Generation). At University of Waterloo she leads a research team dedicated to understanding social innovation. Her most recent book, Getting to Maybe (Random House, 2006) focuses the dynamics of social innovation, and institutional entrepreneurship in complex adaptive systems.

Frances Westley

Marcella D’Souza is the Executive Director of WOTR. A physician by education she opted for Community Health. Marcella is an alumnus of the Government Medical College, Nagpur and a Takemi Fellow of the Harvard School of Public Health. Years of working in semi-arid regions and witnessing the varying and unpredictable weather patterns and its impact on rural livelihoods and well-being in these areas triggered WOTR’s Climate Change Adaptation project for developing tested methodologies for large-scale application and applied research in 2009 that looks at socio-ecological systems and interconnectedness to find answers.

Marcella D’Souza

Victor Galaz is an Associate Professor and Senior Lecturer in political science at the Stockholm Resilience Centre (Sweden). Among his publications in English are articles in the journals Trends in Ecology and Evolution, Frontiers in Ecology and the Environment, Science, the Lancet, Ecological Economics, Public Administration, Nature Climate Change, International Environmental Agreements, Environmental Politics, and Governance. His work has been featured in international media such as Wired, The Guardian, New Scientist and Nature.

Victor Galaz

David Christian is Professor of History at Macquarie University in Sydney, Australia. Dr. Christian is by training a historian of Russia and the Soviet Union, but since the 1980s he has become interested in World History on very large scales. In 1989, he began teaching courses on ‘Big History’, surveying the past on the largest possible scales, including those of biology and astronomy; and in 2004, he published the first text on ‘Big History’. He is a member of the Australian Academy of the Humanities and the Royal Holland Society of Sciences and Humanities, Affiliates Chair for the World History Association, and a member of the editorial boards of the Journal of Global History and the Cambridge History of the World.

David Christian

Elin Enfors Kautsky is a researcher and theme leader for the Landscapes theme at Stockholm Resilience Center. Her main academic interests concern the social-ecological dynamics of smallholder farming systems, with a special focus on pathways to transformative change and poverty alleviation in these systems. After a postdoc at CIRAD in France, she has served as an advisor to the Water, Land and Ecosystems program of the CGIAR. Elin has published papers in e.g. Global Environmental Change, Ecology and Society, Agricultural Water Management, and has done extensive inter-disciplinary field work in sub-Saharan Africa.

Elin Enfors Kautsky

J. Stephen Lansing directs the Complexity Institute at Nanyang Technological University in Singapore. He is also an external professor at the Santa Fe Institute and an emeritus professor of anthropology at the University of Arizona. Before moving to Arizona in 1998, Lansing held joint appointments at the University of Michigan in the School of Natural Resources & Environment and the Department of Anthropology, and earlier chaired the anthropology department of the University of Southern California. He is President-elect of the Anthropology and Environment Society of the American Anthropological Association. His recent research has to do with the long-term dynamics of coupled social-ecological systems.

J. Stephen Lansing

Per Olsson leads the Stockholm Resilience Centres initiative on Innovation and Transformation in Social-Ecological Systems. His current research is in agency, social-ecological innovations, transformations to sustainability and how to reverse current trends of crossing critical thresholds and tipping points in the Earth system. Per has co-authored a number of book chapters including a chapter for the Millennium Ecosystem Assessment and articles in scientific journals including Science, PNAS, TREE, Ambio, Global Environmental Change, Ecology and Society, and the Annual Review of the Environment and Resources.

Per Olsson

Johan Rockström is a professor in Environmental Science at Stockholm University, and the Executive Director of the Stockholm Resilience Centre. He is an internationally recognized scientist on global sustainability issues, where he, e.g., led the recent development of the new Planetary Boundaries framework for human development in the current era of rapid global change. He has more than 100 research publications in fields ranging from applied land and water management to global sustainability.

Johan Rockström

Keynote Speakers and Panelists

Per Olsson
Laura Pereira is currently a post-doc at the University of Cape Town under the Bioeconomy chair, where she is working on orphan crop innovation for transformation in the food system. In particular she is interested in looking at the interface between traditional knowledge systems and more formal systems of innovation with regards to food, nutrition and agriculture. Her other academic interests lie in visioning more positive futures in the age of the Anthropocene and the process of social-ecological innovation in developing country contexts.

Carl Folke is Science Director of the Stockholm Resilience Centre and the Director of the Beijer Institute of Ecological Economics of the Royal Swedish Academy of Sciences. Carl has extensive experience in transdisciplinary collaboration between natural and social scientists, and has worked with ecosystem dynamics and services as well as the social and economic dimension of ecosystem management and proactive measures to manage resilience. He is elected member of the Royal Swedish Academy of Sciences since 2002 and serves on its Environmental Research Committee.

Steve Waddell, principal of NetworkingAction, focuses on multi-stakeholder large systems change to address critical issues. He does this with as a researcher, consultant, educator, and through personal leadership with a range of clients and partners globally. He has a PhD in sociology and an MBA. He is author of several articles and other publications, including the books Societal Learning and Change: Innovation with Multi-Stakeholder Strategies and Global Action Networks: Creating Our Future Together. Steve is a Canadian-American living in Boston.

Karen O’Brien is a professor in the Department of Sociology and Human Geography at the University of Oslo, Norway. Her research has focused on climate change impacts, vulnerability, and adaptation including how climate change interacts with globalization processes and the implications for human security. She has participated in the IPCC Fourth and Fifth Assessments, as well as the Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX). She has written and co-edited numerous books about global environmental change.

Heide Hackmann recently joined the International Council for Science (ICSU) as Executive Director. Before that she was the Executive Director of the International Social Science Council (ISSC). Heide read for a M.Phil in contemporary social theory at the University of Cambridge, United Kingdom, and holds a PhD in science and technology studies from the University of Twente in the Netherlands. She has worked as a science policy maker, researcher and consultant in the Netherlands, Germany, the United Kingdom and South Africa.

Andy Stirling is co-director of the STEPS Centre at the University of Sussex, working on questions over power and democracy in the politics of knowledge and innovation. He’s served on many policy advisory bodies, focusing on issues of technological risk, scientific uncertainty, regulatory precaution and public participation. Andy is a member of editorial boards for several academic journals and of the Research Committee of the ESRC.

Ioan Fazey is the chair of Social Dimensions of Environmental Change and Director of the Centre for Environmental Change and Human Resilience at the University of Dundee, Scotland. Ioan is an interdisciplinary researcher, using a variety of science and social science methods, collaborating with economists, ecologists, educationalists, quantitative modellers, social scientists, local communities and government and non-government organisations. His focus is on understanding how change can be facilitated and on how learning can be accelerated for achieving resilience and real world practical outcomes.

Derk Loorbach is the director of the Dutch Research Institute of Transitions (DRIFT) and Professor of Socio-economic Transitions at the Faculty of Social Science, at Erasmus University Rotterdam in the Netherlands. He is a founder of the transition management approach as a new form of governance for sustainable development. Derk Loorbach has over one hundred publications in this area and has been involved as an action researcher in numerous transition processes with government, business, civil society and science.

Steve Waddell

Karen O’Brien

Carl Folke

Laura Pereira

Heide Hackmann

Andy Stirling

Ioan Fazey

Derk Loorbach

Steve Waddell

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Carl Folke

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Heide Hackmann

Andy Stirling

Ioan Fazey

Derk Loorbach
### MONDAY 5 October

| 8.30-9.15 | Horsalen | Opening, welcome & conference framing  
Deputy Vice-chancellor Karin Helander: Welcome to Stockholm University  
Per Olsson: Transformation2015 - People and Planet in the Anthropocene  
Carl Folke: Transformations to Sustainability: Reconnecting to the Biosphere |
Perspectives on transformation  
David Christian: Big History: An Origin Story for the Anthropocene  
Johan Rockström: The challenge of sustainable development in the Anthropocene |
| 10.00-10.30 |  | Coffee break |
| 10.30-11.30 | Horsalen | Mash-up sessions 1  
- Change agents in sustainability transformations  
- Patterns of transformation  
- Scaling up for transformative impact  
- Emerging approaches for studying sustainability transformations |
| 11.45-12.30 | Junisternas | Speed talk sessions 1  
- Transformation in urban systems  
- Transformation in fisheries  
- The role of individual agency for transformation  
- Bio-cultural diversity for transformation |
| 12.30-13.30 |  | Lunch |
| 13.30-14.15 | Spelbomskan | Speed talk sessions 2  
- Governance and agency in transformations  
- Disasters, risk and transformation  
- Theoretical understandings of transformation  
- Action and facilitation for transformation |
| 14.15-15.45 | Junisternas | Deep conversations 1-4  
- Imaging for transformation  
- Theories of change  
- Seed of a good Anthropocene  
- Future Earth |
| 15.45-16.15 | Horsalen | Coffee break |
| 16.15-17.15 | Horsalen | Panel discussion  
Frances Westley, Steve Waddell, Representatives from four TLabs: Change ideas for transformations to sustainability – experiences from TLabs |

### TUESDAY 6 October

| 9.00-9.15 | Horsalen | Framing talk  
Victor Galaz: How exponential technologies will transform the planet - and what we should do about it! |
Perspectives on transformation  
Frances Westley: Agency in Transformations to Sustainability  
Derk Loorbach: Governance Panarchy and Sustainability |
| 10.00-10.30 |  | Coffee break |
| 10.30-11.30 | Horsalen | Mash-up sessions 2  
- Change agents in sustainability transformations  
- Patterns of transformation  
- Scaling up for transformative impact  
- Emerging approaches for studying sustainability transformations |
| 11.45-12.30 | Juristernas | Speed talk sessions 3  
- Methods for studying sustainability transformations  
- Transformational transnational processes  
- Transformations in the Arctic  
- Integrated solutions for transformations to sustainability |
| 12.30-13.30 |  | Lunch |
| 13.30-15.00 | Juristernas | Interactive space  
- Book launch  
- Rasabox workshop  
- Seeds of a good Anthropocene game  
- Shifting metaphors of transformation |
| 15.00-15.30 |  | Coffee break |
| 15.30-16.30 | Horsalen | Panel discussion  
Andy Stirling, Marcela D’Souza, Laura Pereira: Global sustainability goals, development and transformations |
| 18.30 |  | Conference dinner at Gamla Riksarkivet |

### WEDNESDAY 7 October

| 9.00-9.15 | Horsalen | Framing talk  
Elin Enfors Kautsky: Social-Ecological Transformations for Development |
Perspectives on transformation  
Stephen Lansing: Hidden transformations: self-organized criticality in Bali  
Heide Hackmann: Science for a sustainable and just world: Towards a new science policy framework |
| 10.00-10.30 |  | Coffee break |
| 10.30-11.30 | Horsalen | Mash-up sessions 3  
- Change agents in sustainability transformations  
- Patterns of transformation  
- Scaling up for transformative impact  
- Emerging approaches for studying sustainability transformations |
| 11.45-12.30 | Mezzaninen | Speed talk sessions 4  
- Social and technological innovations for sustainability transformations  
- Ethical and moral perspectives on sustainability transformations  
- Transformations in food systems  
- Transformation in response to climate change |
| 12.30-13.30 |  | Lunch |
| 13.30-14.45 | Bergsmannen | Deep conversations 5-8  
- Transformation to ecosystem stewardship  
- Reflections on science in the Anthropocene  
- Development practice and transformations  
- Learning and education for transformation |
| 14.45-15.15 | Horsalen | Coffee break |
| 15.15-16.00 | Horsalen | Panel discussion  
Karen O’Brien, Ioan Fazey and Carl Folke: Reflections from Transformations2015 |
| 16.00-16.15 | Horsalen | Closing of conference  
Per Olsson & Elin Enfors Kautsky |

### Conference dinner

Gamlakriskapet (the Old National Archives) is located on the island of Riddarholmen very close to the Old Town metro station. The short walk from the subway will give you a glimpse of the town hall across the water and in the surroundings of the venue you’ll find the Stockholm government district, The Swedish Parliament and Old Town alleys. After dinner our DJs Victor Galaz and Hao Ly will keep us moving. We hope to see you there!

Adress to venue: Gamla Stan. Birger Jarls torg 2, 111 28 Stockholm

### Enjoy your meal

The food served during the conference is all vegetarian and organically and/or locally produced. If you have stated other dietary requirements during registration, please just let the catering staff know and they will help you. We hope you will enjoy your meal!

### If you ever have a question...

...the conference staff are ready to answer any questions you might have during the conference and are easily recognized in their “Ask me!” t-shirts. These recycled garments are made by Remake/Stockholm Stadsmission. A non-profit organization working to increase the ability for vulnerable people to create their own livelihood, while recycling at the same time.
Sustainability and agricultural innovation: A systems approach to bridging gaps in understanding, implementation and scaling

**Monday Oct 5th**

**Wash&UP - Change agents**

Transnational corporations as ‘keystone actors’ in marine governance

Overland J, Jeffery JF, Folke C, Brund M, Weisz P, Resurreccion J

Keystone species critically influence the structure and function of ecosystems, but that analogy is in social-ecological systems is unknown. We analyse whether a system of ‘keystone species’ (or ‘keystone actors’) could be observed in the relationship between transnational corporations and marine aspects of the global ocean and their local, low-resource dependencies (1.1-13 billion fish annually). The analogy suggests this approach may provide a new lens for understanding problem-solving and solution in addressing sustainability and equity in large-scale marine systems.

**SUSTARMS implementation.** This study critically explores the new collaborative governance arrangement that is emerging from an interaction between sugarcane companies in South Africa and sugar-producing cooperatives. We analyse the impacts of the collaborative governance arrangement which links local-level smallholder cooperatives with global corporate sugarcane companies and high-stakes decision-making to transform problems and solutions across scales to bring about transformation change towards sustainability.

**SUSTARMS** implementation.

**Are we facing systemic change agents?**

Carruthers R, Mills Malachan, South Bronx

Food security and sustainability in the food system are ‘linked problems’. We need new approaches for working on these issues that can lead to a comprehensive view of the problems that they face. In this paper, we critically explore the different drivers and barriers to the implementation of the results and seek to identify how we can create change. This leadership, networking, and collaboration approaches for systematic change will be more effective, and we will provide recommendations for change.

**SUSTARMS** implementation.

**Pathways for transformation change of Baltic Sea environmental governance**

Abub-Karim and Michael Glick

The Baltic Sea is among the most disturbed marine ecosystems, but a clear vision of the impact of Anthropocene. People in the Baltic Sea region express a strong interest in mitigating the problems that the region faces, but the governance efforts that have been made so far to the transformative changes needed to reach stated objectives and goals for the public. A study of a three-year project, researchers have that new narratives, investigated the governance of Baltic Sea ecosystems transformation, and their role in the success of the initiatives. The project, three case studies, three cross-cutting dimensions were investigated: multi-level and multi-sectoral governance shifts, social co-creation and participation, and communication and coordination. The authors found that the project is working successfully to create new narratives for the Baltic Sea environment governance. While acknowledging that the project was proved, the authors recognize that the functions that are working in prepared governance structures and processes, and that new ideas are needed to facilitate transformation change towards sustainability.

**Wash&UP - Scaling up for transformative impact**

Scoping the impact of sustainability initiatives: A conceptual analysis and scaling framework

Spira F, Frantzeskaki N, Loorbach D

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**Wash&UP - Innovation and sustainability narratives and their role in socio-ecological transformation**

Gao Q., Zeng C.

This paper explores how social, technological, and environmental systems co-evolve to produce transformative pathways to sustainability, and the role that policy narratives can play in this process. In particular, it explores different forms of innovation in China and their potential to contribute to global transformations around lower-carbon, more environmentally sustainable, and socially just pathways. Since some of the writing, the Chinese government has put forward a number of high-profile policy statements pointing towards the central role of technological change in achieving these goals. Beyond approaches such as solar PV and megaprojects, however, the paper looks to compare institutional and governance efforts that are more aligned with technological dynamics to contribute to socio-economic change. Building on several studies attempting to define forms of ‘bottom-up’ technology, before the wider ‘disruptive’ and social aspects of innovation, and drawing on empirical research on energy and food systems in China, the paper also pays particular attention to the role of power in shaping narratives and pathways. Taken together, this perspective points to both opportunities and challenges to transformation to sustainability by passing questions that are often overlooked by scholars focused on technological innovation alone. The paper draws on an ongoing project exploring European and Chinese researchers, naming not only the academic research outputs of the project, but also the cooperation that has emerged through engaging the international debates underway.

**SUSTARMS** implementation.

**An Exploratory Perspective on Economic Changes to Sustainable Pathways in Brazil**

Franco, Huguenin

Brazil offers an illuminating case through which to study transformative pathways to sustainability due to its recent success in reducing deforestation rates and promoting re-afforestation and local biodiversity. This paper presents the results of a field study that measured the different drivers and barriers in Brazil’s efforts to transform a low-carbon economy. Semi-structured interviews were conducted with key informants from the government, civil society, academia and the private sector. The paper finds that the factors that are between re-afforestation and local biodiversity changes in a better condition between the governance systems and the systems to the government. The government, civil society, academia and the private sector.

**Innovation and sustainability narratives and their role in socio-ecological transformation**

Arbeitskreis Toru Gao

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Transformational Solutions for Water Sustainability in the Southeastern United States, with Experiments in Evaluation

Case Study: Successful Small-Scale Fishery Transformation in the Upper Gulf of California, Mexico

To understand the socio-spatial politics of sustainable transformations in practice, it is critical to examine how initiatives achieve or fail to achieve systemic change. In this case, we explore successful small-scale fisheries transformation in the Upper Gulf of California, Mexico, as a case study for understanding the conditions that facilitate or hinder systemic change. This process involves an analysis of the interactions between local and global actors, the role of governance structures, and the dynamics of power and knowledge production that shape transformation.

Transformational solutions for water sustainability in the Southeastern United States, with experiments in evaluation

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Current, our results show that only a relative small-scale survey in order to analyse the needs to be transformed into a more or less complete and sustainable socio-technical system. At the latest since the turn of the Millennium Development Goals, this is widely accepted as a necessary step towards the implementation of the three systemic transformations: political, ecological, and economic. The complexity of the current socio-technical systems we are dealing with is huge: they are currently characterized by density and embeddedness of social actors, their relations, and their actions. This means that people are dealing with, including, past and present, and the future, and the streams and streams of these actions. The present consequences of implicit or explicit individualization and functions of the ‘change agents’ model could neglect the critical social realism of transformational change. Complementarily to such social context, embedded politics, practice, firstly, social health and environmental context to base research on and for, for transformational change, we have to analyse and enter deep in empirical research, and engage with the insights from decades of research on an ‘agri-food’ transformation. In this context, a step backwards turning out and thus improving our understanding of ‘change agents’ and transformation processes.

Empowerment within planetary boundaries and transformational territorial governance

Hostile Habitats

This chapter examines the world’s most pressing challenges, the changes, and the human vulnerability to these changes, the impact of human activity on the planet, and the impacts of climate change, extraterrestrial and human-modified impacts in our environment. We discuss the future prospects for the existing system and the impacts and challenges. The concept of Antropology is one such notable definition. In a broader perspective, the discussion is about the need to blend social and ecological systems. We also know that the three systems of sustainable development are forms of adaptation, as we have worked out that the way it is proposed. When the United Nations Sustainable Development Goals were divided into three interdependent parts, one of which includes the impact of climate change on the planet. All of which was to be governed by a mediator and regulated by the countries. We discuss the need for more unplanned markets and new social institutions. The regulatory mechanisms that have been studied have led to the establishment of a new mechanism of governance and the implementation of the three planetary boundaries. Continental basis, an important aspect of this is to create a new mechanism for governance and the implementation of the three planetary boundaries.

Connecting people to place

Lorraine Forler

Globalization leads to universal dispersed development of the human condition. The challenge is to address temporal, spatial, and environmental sustainability issues within a range of complex challenges. To address the issue of social sustainability, we need to identify leverage points on social learning, creative solutions, and continuous change. Information on people’s reliance on social information is critical. We are interested in how people would interact with a system in order to transform their collective mindsets to transform their current social-technical systems (within planetary boundaries). In this paper, we propose a model to understand the nature of change, those who are creating an innovative socio-technical system, and the nature of change, and the relationship between our collective mindsets. We focus on how people would interact with a system in order to transform their collective mindsets. For this purpose, we analyse the role of social innovation and the impact on people’s reliance on social information.

Food Systems Transformations: Diverse responses from the smallholder

In the Anthropocene, human activity has a significant impact on the environment. Various changes in both ecological and social systems have an impact on the nature of our future and thus require the development of new governance models. These changes have led to various initiatives and complex processes for the development of new governance models. In addition, our efforts in agriculture, forestry, and ecosystem services are linked together with sustainable development (Arendt, 2011). This paper reports on the relationship between agriculture, forestry, and ecosystem services with the development of new governance models. The paper explores the relationship between the two main systems (agriculture and forestry) and the development of new governance models. However, the paper examines two development pathways for the development of new governance models. The paper further discusses the role of social innovation and the impact on people’s reliance on social information.

New agents of change in the social transformation process? Exploring the building blocks of a new emerging research agenda for global socio-technical transitions

Maja Gjelsvik and Marcel Riekkä

In the past few decades, new agents of change such as business, cities, and NGOs, are increasingly being recognized as significant players in addressing global socio-technical transitions (e.g. of the human–natural systems) and have urged governments to facilitate the involvement of new agents of change in both national and local governance. The paper argues that, in order to deploy socio-technical transitions, governance frameworks need to be adapted to the changing landscape of new agents of change. We present a comparative analysis of selected new agents of change and show how the emerging governance frameworks can shed light on the conditions necessary for nested transformation governance to catalyse transformational change in the food system. We show how different governance frameworks and new agents of change can lead to a transformation of the food system. We also show how these governance frameworks can be used to understand the dynamics of nested socio-technical transformations and how new agents of change can be mobilized to support these transformations.
Reducing the system towards sustainability

Karin Beland Lindahl, Susan Baker, Lucy Procter, Timothy Karpouzoglou, Zed Zulkafli, Sam Smale

In sustainability science, the transition towards more sustainable futures is a highly neglected field in the literature. Based on an extensive literature review on transformative capacity and research on a specific process-oriented perspective on transformative capacity and its role in transformative change, we establish an operational definition and a set of conditions that, if met, can be expected to elicit a better picture of local decision making, and to jointly identify critical issues in creating transformative capacity useful for promoting sustainable development. The paper presents an analytical framework for facilitating sustainability transitions with networks, bridging organizations, and multiple stakeholders. It will not have a lasting effect and becomes

Theoretical Framework on Social-Ecological Transformation Towards A Sustainable Future: A Pathways Approach

Yang Wang, Hsiu-Hsia Tai

The term ‘tipping point’ describes a point where small changes in a system can cause a sudden and significant shift in the system’s state. However, small changes that occur in isolation do not have a noticeable effect on the system. However, when small changes occur simultaneously, they can lead to a qualitative change in the system. Therefore, the tipping point is a critical point in the system where small changes can trigger a dramatic change in the system’s behavior. The concept of tipping point is widely used in various fields, including ecology, economics, and social sciences. In ecology, it is used to describe the point at which a population experiences a sudden change in its size due to a small change in environmental conditions. In economics, it is used to describe the point at which a company experiences a sudden change in its profitability due to a small change in market conditions. In social sciences, it is used to describe the point at which a social movement experiences a sudden change in its size and momentum due to a small change in the social environment. The concept of tipping point is also used to describe the point at which a whole system experiences a sudden change in its behavior due to a small change in the system’s state. The tipping point is a critical point in the system where small changes can trigger a dramatic change in the system’s behavior.
This text focuses on the role of Mindshifts in System Innovations, as discussed by Maja Goepel. It explores how transformations can be understood through the lens of structural power, hegemonic ideas, and paradigms. The text highlights the importance of assessing the mindsets of key actors when creating institutional frameworks to organize human-nature interactions. The project compares three industrial group, a political advisory group, and a political actor to understand how transformative social innovation initiatives can be enabled. The text also mentions the importance of nature experiences inside urban landscapes and how they can contribute to furthering sustainability transitions. It discusses the importance of theatrical arts-based participatory methods in helping people to understand the complexity of climate dynamics and how they can be used to facilitate participation and influence policy. The text concludes with the idea that narratives and storytelling can be used as a tool to support transformative action, and the importance of understanding how stories can be used to support and challenge people's identities and worldviews. The text concludes with a call to action for researchers and practitioners to engage in meaningful dialogue and collaborative work.
Deep leverage points for sustainability transformation: conceptual considerations


A leverage point is a unique position that provides the ability to influence an outcome in a complex system requiring the alignment of actions among different actors. In sustainability, leverage points are identified in complex systems where a small shift can lead to significant changes in the system as a whole—catalyzing rapid change. Understanding the dynamics of leverage points can be a useful tool for designing effective interventions in complex systems. The leverage points identified in this study provide unique opportunities for intervention to catalyze transformative change in sustainability systems.

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Deep leverage points for sustainability transformation: conceptual considerations


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Christopher Clarity

This study provides a simulation of the current energy landscape with its 
constraints, opportunities, and renewable energy potential. Vermont’s proposed transition is a 
major transformation that will require a massive land cover change to meet future energy demand. It will require a dramatic shift in agricultural land use. The current land cover is dominated by forested areas, with only a small portion of the land used for agriculture. This shift will require significant changes in agricultural practices, including the adoption of new crops and farming techniques that are better suited to the state’s climate and topography. It will also require the development of new economic opportunities for Vermont farmers, who will need to diversify their crops and find new markets for their products. The transition to renewable energy will also require significant changes in transportation and the built environment, including the development of new forms of transportation infrastructure and the retrofitting of existing buildings to improve energy efficiency. The Energy-Land Nexus is a complex system that will require careful planning and coordination to ensure a smooth transition to a renewables-based economy. It is a critical moment in Vermont’s history, and the decisions made during this transition will have long-lasting effects on the state’s economy, environment, and quality of life.
Building an Index for Sustainable Development (Sustainable Development Goals Indicator Framework)
Making the change: Developing an approach to assessing long-term impacts of transformational change and their integration into sustainability programs in the Netherlands and a rural Indian context

Anne Lambers, bunchs and Wiwi, Rashidah Mohamed

In the wake of the publication of the United Nations report titled ‘Transforming our World: A Plan of Action,’ new sustainability programs are being developed and implemented across the globe. However, there is much uncertainty about whether such programs can bring about meaningful change in the face of an increasing number of immediate and long-term sustainability issues. A question that is being asked is ‘Which systems innovation approach should we take for the implementation of such programs in our local contexts?’

An answer to this question may help shift the current focus from short-term, operational programs to sustainable solutions that are more inclusive and long-term. However, the question can also be rephrased as ‘What are the implications of the various sustainability approaches and theories for the planning and implementation of such programs in different contexts?’

In this study, we focus on the implementation of sustainability programs in the Netherlands and a rural Indian context. Our research question is: ‘How do the various sustainability approaches and theories influence the planning and implementation of sustainability programs in these contexts?’

We use a mixed-methods approach to explore the relationships between the various sustainability approaches and theories and the planning and implementation of sustainability programs in the Netherlands and a rural Indian context. Our findings suggest that the various sustainability approaches and theories influence the planning and implementation of sustainability programs in different ways.

The Netherlands and rural India contexts differ in terms of their socio-economic, cultural, and political contexts. This leads to differences in the ways in which the various sustainability approaches and theories are implemented in these contexts. For example, in the Netherlands, the focus is on the development of long-term, systemic solutions that are inclusive and participatory. In rural India, the focus is on the development of short-term, operationally driven solutions that are context-specific and inclusive.

However, both contexts face similar challenges in implementing sustainability programs. These challenges include the lack of resources, the lack of political will, and the lack of stakeholder engagement. Our findings suggest that the various sustainability approaches and theories can be used to address these challenges.

In conclusion, our study provides insights into the planning and implementation of sustainability programs in different contexts. This knowledge can be used to guide the planning and implementation of sustainability programs in future contexts.

The Three Spheres of Transformation

Lars Eric de Callatay, Olivier Deschutter, Pepijn de Bleeckx, Tom Dedeurwaere, Charlotte Franssen, Deirdre de Callatay, Olivier Deschutter, Pepijn de Bleeckx, Tom Dedeurwaere, Charlotte Franssen

Transforming the current society towards a sustainable one is necessary in order to prevent major environmental and economic challenges. This paper proposes a research and policy-making framework to assess long-term impacts of transformational change in society.

The framework is based on empirical studies and the analysis of the ‘shades of system innovation’ approach (Alkon 2008, Feagan 2008, Lang et al. 2009). We define transformation as a process to terminate an ongoing system in favour of another, which may be more sustainable or desirable.

Our framework is based on the three spheres of transformation: the ecological, social, and economic. The ecological sphere focuses on the need to reduce environmental impacts and achieve sustainable development. The social sphere focuses on the need to improve social justice and equity and achieve sustainable societies. The economic sphere focuses on the need to achieve sustainable economic systems and enhance economic well-being.

The framework is used to assess the long-term impacts of transformational change in society. The assessment is based on the following steps:

1. Identify the transformational change that is being studied.
2. Assess the ecological, social, and economic impacts of the transformation.
3. Determine the long-term sustainability of the transformation.

The framework is used to assess transformational changes in society, such as the transition to a low-carbon economy, the implementation of social justice policies, and the transition to a sharing economy.

The framework is a powerful tool for assessing the long-term impacts of transformational change in society. It can be used to inform policy-making and help to ensure that transformational changes are sustainable and beneficial for society.
environment. In 2007 the nine countries together with the European Commission approved the Stockholm Action Plan aiming at good ecological status by the year 2015. The agreed target goals for the BSAP transformations 18% is 41% reduction in eutrophication and 50% reduction in phosphorus levels respectively. A traditional cost–benefit analysis, comparing the increased investments of hundreds of technical or formal management actors against the expected benefits, suggests the BSAP is worth the cost for reaching the BSAP targets. However, the cost for transformation can be divided into two different components: the reduction of socio-economic complexity, i.e. changes in design, Södertälje was emphasizing the development of ‘a white’ and Baltic Sea food for all for only 30,000 USD per person/day. The strategic transformation aims at recognizing and a balanced animal density. Inclusion includes both the traditional pre-fabricated food from cooking rice ingredients. Less meat and more vegetables have contributed to increased overall well-being. The nutrient-rich material such as mushroom and the local farmers are satisfied (economic and social benefit). Today, in 2024 Södertälje remains the main issue of food security. As the food director (Andrea Knutson) and the head of the School food. Success of the school requires new approaches to cost-effectiveness and capacity to transform the whole food system rather than seeing farmers as the cause of the nutritional problem.

Who drives climate relevant policies in the rising power?

Hubert Schoier

The future of man on our planet is increasingly influenced by what we do and what we are doing today. This dedication is the political economy analysis of three prevailing policies concerning climate, health and urbanization, and the perspectives for the future.

In this contribution, the author highlights the need to develop a new political economy of health and urbanization, and the perspectives for the future.

The latter question is analyzed by focusing on the potential of ecosystems and urban design to facilitate and foster social change, and to promote sustainable development. The ecological design of the urban environment, for example, can help to reduce pollution and energy consumption, while also improving the quality of life for residents. However, in order for these changes to occur, it is important to understand the factors that drive them, such as political will, economic incentives, and social pressures. It is also important to consider the role of local governments and community organizations in promoting sustainable development.

The political economy of health and urbanization is a complex and multidimensional field, and it requires a holistic approach. In order to understand the factors that drive these changes, it is necessary to consider both the social and economic dimensions of the issue. This perspective is important because it allows for the development of policies that are more effective in promoting sustainable development.

It is important to recognize that the political economy of health and urbanization is a complex and multifaceted field, and it requires a holistic approach. In order to understand the factors that drive these changes, it is necessary to consider both the social and economic dimensions of the issue. This perspective is important because it allows for the development of policies that are more effective in promoting sustainable development.

Building Integrated Climate Governance Strategies Beyond Two Degrees. An agenda for new paradigms.

David Tafel, Daniela Manganello, Marco Serena, Oliver Herfurth, Andrea Blumberg, Veni Kalogridis, Robert Lempert, Filip Kabatlova, and Herbert Schoier

The growing recognition of high-end climate change science is motivating nations to renew their ambitions and policies for reducing greenhouse gas emissions. However, the implementation of these policies is hindered by a number of political and economic challenges. One of the main challenges is the lack of understanding among policymakers and the public about the potential benefits of climate change mitigation and adaptation measures. This lack of understanding can be attributed to a number of factors, including the complexity of climate science, the perceived costs of climate change mitigation and adaptation, and the lack of political will to take action.

It is important to recognize that the political economy of health and urbanization is a complex and multifaceted field, and it requires a holistic approach. In order to understand the factors that drive these changes, it is necessary to consider both the social and economic dimensions of the issue. This perspective is important because it allows for the development of policies that are more effective in promoting sustainable development.

In conclusion, it is important to recognize that the political economy of health and urbanization is a complex and multifaceted field, and it requires a holistic approach. In order to understand the factors that drive these changes, it is necessary to consider both the social and economic dimensions of the issue. This perspective is important because it allows for the development of policies that are more effective in promoting sustainable development.
Now ways of crafting sustainability leadership for educators: Looking through Thurna’s lens

Tonia Gray

To paraprase Thurna, asking the right questions can help you predict the world, and whether you are. Achieving sustainable well-being will require profound cultural change, not simply innovating academic practice. For the reasons, sustainability education is crucial for building the transformed workplace—wider inclusiveness, racially acceptable, ecologically feasible and economically viable—necessary for future innovation and thriving global reform. Sustainability is a complex concern, but a fundamental change in the way we ask questions and see the world. The sustainability leadership we have today is the result of fundamentally changing human-environmental interaction and feedback. Our goal in sustainability leadership is not to remain in ignorance, but to make our visions and insights deeply embedded in our lives. It is incumbent on us, as educators, to teach our students about the problems we face. We must teach them how to be lifelong learning environments and to be able to make informed decisions about the consequences of their actions.

Transformative Learning Networks

Bruce Fraser

I will present a study on three transformative learning networks—the Fire Adapted Communities Learning Network, the Local Marine Managed Area Network, and the 102 Student Civic Change Network. This study builds on prior research (Goldstein and Butler 2009; Butler and Goldstein 2010) into how the U.S. Fire Learning Network expanded the diversity of ideas and practices to support system innovation by coordinating experiments that were defined and conducted by those in the communities who are closest to problem, while also distributing the resultant knowledge between communities in ways that were contextually relevant. The present project focuses on how three different network designs constitute hypotheses about how to promote social learning and capacity building, support organizational learning across a distributed network, and lay the groundwork for transformative change. Given this interconnectedness, we will consider whether these three networks are, in fact, succeeding in helping communities to critically understand their limits and opportunities and set their own learning objectives about what to transform, and 2) facilitating the autonomy that individual communities require to foster innovation with the vision required to amplify their potential to navigate regime shifts and adaptive change in policy and institutions at higher scales. Gibbons, Bruno and William Butler. “The Network Imaginary: Cohesion and Creativity with a Multiscalar Collaborative Effort to Reform U.S. Fire Management.” Journal of Environmental Planning and Management 52 (2009): 1503-1024. Butler, William and Bruce Goldstein. “The U.S Fire Learning Network: Springing a Rigidity Trap through Multi-scale Collaborative Networks.” Ecology and Society 13 (2008): 1.

Harnessing a safe space for knowledge production on sustainability transformations

Karen G. Kaniaouzos, Laura Penney, Saini Dhol, Hiki Frantzakakis

The need for developing socially just living conditions for the world’s growing population whilst keeping human societies within a “safe operating space” has become a modern innovation. This requires transformative changes in the dominant social status, behaviors, governance and management regimes that guide human behaviors in areas such as urban ecology, public health, resource security (e.g. food, water, energy access), economic development and biodiversity conservation. Such type of system transformations further necessitate greater experimentation in public arenas of existence and a deepening of knowledge co-creation processes. In this article, we offer the notion of a safe space for knowledge production to scalable possibilities where alternative knowledge creation practices can be utilized in order to visualize sustainability science.

Transitions and Resilience approaches have developed both cases of a new scientific capacity that aims to support large-scale social-ecological transformations (SST) for sustainability. A safe space operates on a different mode of knowledge production that encourages greater collaboration and focuses on bridging these two areas and disciplinary perspectives to develop a new community of practice that will be continually adaptive and evolving. We also highlight the opportunity context for engaging with the risk of emerging economies in facilitating a safe space production space.

Deep Conversation 8: Reflections on Science in the Anthropocene

MODERATED BY MARK PELLING
Beyond Beasts: How the Anthropocene shapes our conception of the world

Barb Baker, Hayvicka Mudekun

The Anthropocene concept has been coined in the 1960s, a period as determined by human impact. However, the concept is more than a description, as it is often also associated with a prescription of action and governance towards reducing this impact. The implication is that the Anthropocene is not a neutral term, but a normative concept that challenges humanity to rethink its attachments and conceptions of the world around. In our contribution, we unveil what value orientations are at work in considering the Anthropocene, including conceptions of the nature–culture divide, the moral status of nature, the role of technology and innovation, and the conception of risk and vulnerability. Doing so, we find that the notion of the Anthropocene goes beyond a sharp nature–culture divide: it resists definitions of nature by both its impact as well as leaving it as undefined. We do not merely unfold an era of disaster, but it rather provides room for other perspectives, including adaptive innovation towards a renewed relation with our environment.

Could it be considered the Anthropocene not as a defaulting boundary between nature and culture, but as an understanding that nature and culture are blended into a new domain, that blends the constituting components? It is, therefore, more fruitful consider the Anthropocene not as a duality but a new continuum from nature to culture and back. That is, we might instead consider the Anthropocene as the moral status of nature of this continuum that places us in a different location in the Anthropocene itself, where nature is no longer the object of our thinking, but an integral part of human culture.

The Anthropocene emphasizes the need to live with the environment.

Transformations to Sustainability: Is it time for a Quantum Leap?

Kevin O’Brien

The IPCC Fifth Assessment Report concluded that human influence on the climate system is clear, widespread, and irreversible. The report strongly emphasized the high risks of severe, widespread, and irreversible global impacts in the absence of substantial mitigation and adaptation. While this message is clear, we know that the world is currently headed toward global temperature increases of 2°C, 3°C, or more, in the next century. How do we create the kinds of social transformations that are not only possible, but necessary? And why? In this talk, I will argue that the scale, rate and extent of transformations required to prevent climate change call for different ways of thinking about social change. In fact, social science itself may have to transform to meet the challenge of climate change.

Shoring up questions social theory, I will discuss the relationship between making a quantum leap in theory and in practice, and explore the potential role of collaborative power as a key factor that can contribute to conscious social transformations to sustainability at an unprecedented rate and scale.

Science learning in the Anthropocene

Transitions, Dirk Falke, Dirk Falke, Nicole France, Nicole France, Karen Zacantis, Bruce Butler, Bruce Butler, Alun Salt

The concept of the Anthropocene provides a basis for envisioning a sustainable human presence on Earth which we would no longer be apportion of nature but an integral part of it. Based on debates in science education we propose the Anthropocene as a guiding framework for learning in the context of the transformation towards sustainability. Education has been recognised as indispensable for achieving sustainability. But evaluations show that education still struggles to meet the challenges of a sustainable society. In practical implementation, one of the challenges teachers face is the inclusion of even more content into academic curricula. In addition there is a mismatch between the needs of the transformations that have taken place and the transfer of educational reforms. In our contribution we want to discuss: How can science learning be a key variable to meet the challenge of the Anthropocene and promote the necessary changes towards transformation? Based on our evidence we propose a model how science learning can meet these challenges within a given competence-based curricula. The model has been developed to support science educators and consists of five strategies: (1) Identifying relevant disciplinary and cross-disciplinary core concepts, (2) offering science concepts by anthropocenic approaches, (3) implementing students concepts, intentions and values into science discourses, (4) putting the tentative nature of scientific discovery and scientific knowledge into focus, and (5) engaging students in research-based and cross-disciplinary research. Learning that connects science with society. The model is evaluated in a multi-stakeholders framework in school and university contexts.
Transformations2015 will focus on transformations towards sustainability: the challenge of solving problems in the Anthropocene and creating conditions for good lives for people, today and in the future, while strengthening Earth’s life support system.

The aim of the conference is to build a better understanding of large-scale systemic changes and fundamental redirections in people-planet relationships that can have an impact at scales that match the challenges of the Anthropocene, in both developed and developing country contexts.