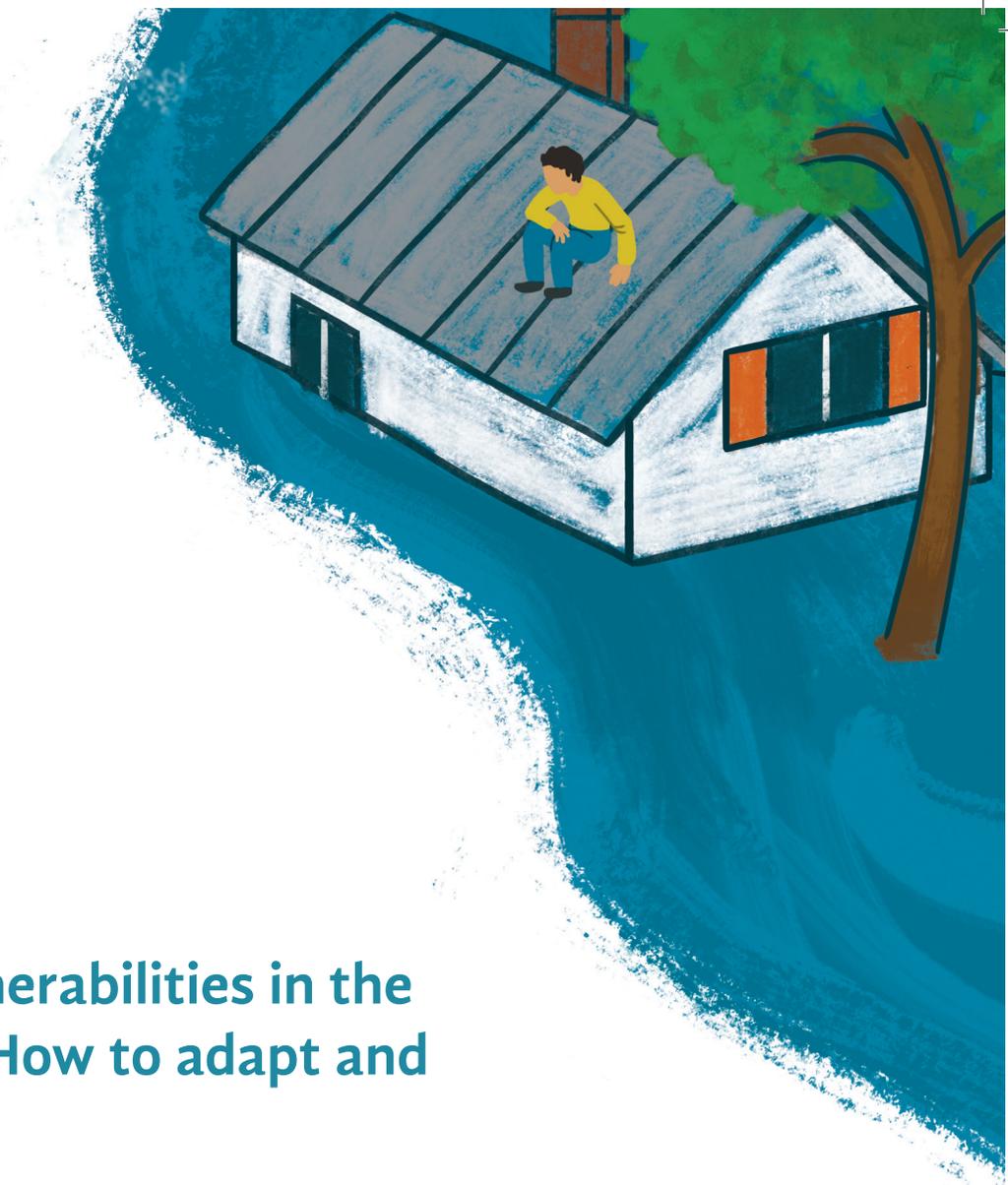


UNIVERSITY OF HELSINKI



## HENVI Science Day May 10th 2016

Abstract volume

# Environmental vulnerabilities in the globalizing world: How to adapt and manage change?

Helsinki University Centre for Environment



**FUTURE EARTH FINLAND**

National Committee for Global  
Change Research

Forum for  
Environmental  
Information



MAJ AND TOR NESSLING FOUNDATION



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HENVI Science Days on Environmental vulnerabilities in the globalizing world. 10th May 2016. Abstract volume. Edited by Riina Koivuranta and Elina Raukko. Graphic design of the cover: Stephanie Lindström. Abstract volume has been printed in paper certified by Swan label, the official Nordic ecolabel.

# Welcome to HENVI Science Day 2016

The HENVI Science Days offer an interactive forum for students and scientists from various disciplines as well as for policymakers and representatives of private sector and civil society to come together, learn and discuss the latest findings of top research and its application for the benefit of the society. The HENVI Science Day 2016 is titled as “**Environmental vulnerabilities in the globalizing world: How to adapt and manage change**”. This is consistent with the research topic of the HENVI-funded research program ENVGOV which analyses environmental vulnerability and social resilience in the context of land-use changes, and studies their impacts on water-related vulnerabilities through floods, droughts, water contamination and other kinds of risks.

HENVI Science Day 2016 asks what kind of vulnerabilities are we facing in the globalizing world? What do these vulnerabilities mean in people’s everyday life and how do they influence in people’s aspirations for future? And do our proposals for managing these challenges benefit some groups more than others? How can we plan for alternatives that are environmentally sustainable and socially inclusive? This is the second year we will apply novel software techniques to seek answers to these questions and facilitate audience’s interactive participation in moderated round table discussions. Based on the experience from last year, we believe that this approach will bring up new ideas and fresh insights from the audience to the front of the discussion, together with scientific evidence and innovation presented in keynotes.

As in the past two years, we plan to produce a policy brief document summarizing the main message of the event. We hope that the HENVI Policy Brief will be a useful tool to bridge the gap between research and policy. The policy brief can be downloaded from HENVI website after the event.

On Monday, May 9<sup>th</sup>, prior to the Science Day we had a workshop with student presentations and lively discussions together with the invited keynote speakers. The reports written by three student groups during an intensive 5 week course covered topics about adaptive capacities of agricultural communities, climate induced glacial changes and power relations in climate change and ecosystem services narratives. The abstracts of the reports prepared by the HENVI students for the workshop are available in this abstract volume.

The Science Days are arranged by Helsinki University Centre for Environment, HENVI, in collaboration with Future Earth Finland. The event is financially supported by Maj and Tor Nessling Foundation, and it is part of Forum of Environmental Information.

We warmly welcome you to HENVI Science Day 2016 and encourage you to take actively part in the discussions in order to find solutions on how we can manage and adapt to global change!

Kaisa Korhonen-Kurki  
Research Coordinator  
HENVI

Janna Pietikäinen  
University Lecturer in Environmental Studies, HENVI

Jari Niemelä  
Professor, Dean  
Chairman of the HENVI Steering Committee

Anja Nygren  
Professor  
Leader of HENVI-ENVGOV Program

## PROGRAM

### May 10<sup>th</sup>: ENVIRONMENTAL VULNERABILITIES IN THE GLOBALIZING WORLD:

### HOW TO ADAPT AND MANAGE CHANGE

Venue: Minerva-tori, K226, Siltavuorenpenger 9, Helsinki

#### Morning session:

#### Global processes and environmental vulnerabilities

- 08:30–09:00 Coffee
- 09:00–09:10 Opening words  
Permanent Secretary **Hannele Pokka**
- 09:10–09:30 Introduction to environmental change and vulnerability  
Professor **Markku Kanninen**, University of Helsinki
- 09:30–10:15 Keynote: Global environmental change, vulnerability and adaption of  
socio-economic systems  
Professor **Barry Smit**, University of Guelph, Canada
- 10:15–10:35 Coffee break
- 10:35–11:20 Keynote: The political nature of global change: power, authority and  
knowledge in the context of climate change  
Professor **Andrea Nightingale**, SLU, Sweden
- 11:20–12:00 Discussion and questions in round tables – interactive session with keynote  
speakers
- 12:00–13:00 Lunch break

## **Afternoon Session:**

### **Analyzing change in multiple contexts**

- 13:00–13:35 Keynote: The need for integrated assessment of potential human responses to global change  
Dr. **Rachel Warren**, University of East Anglia
- 13:35–14:10 Keynote: Analyzing marginalization, inequalities, and power relations in the context of socio-ecological change  
Professor **Farhana Sultana**, Syracuse University
- 14:10–14:30 ENVGOV project key findings  
Dr. **Anja Nygren**, University of Helsinki
- 14:30–14:40 Setting targets and introducing discussion questions:  
Vulnerabilities in multiple contexts: How to adapt and manage change?
- 14:40–15:30 Round tables creating answers to posed questions and finding ways forward
- 15:30–16:00 Moderated discussion and presenting results from the session
- 16:00–16:30 Summing up
- 16:30– Wine and snacks get-together

# HENVI Science Day, May 10<sup>th</sup> 2016

## Discussion topics for the round tables

### **MORNING SESSION:**

1. Identification and assessment of key vulnerabilities: What are the key vulnerabilities that we are facing? What are the key processes that are affected and how?
2. What obstacles might we face whilst trying to manage and adapt to change?
3. What new possibilities might arise from managing and adapting to change?

### **AFTERNOON SESSION:**

#### **TABLE 1: Assessing vulnerabilities**

- How should we try to measure vulnerabilities? Or should we even try to measure them?
- What kind of indicators and criteria can/should we use in recognizing vulnerabilities?
- What kind of vulnerability frameworks do we have at the moment and is there something missing from them?

#### **TABLE 2: Communities and approaches of vulnerability research**

- What kind of groups/approaches are there within vulnerability research and how do these different communities of vulnerability research contribute to research?
- How do we deal with diverse approaches and what kind of communication is there/should there be between these different approaches?
- What are the challenges and new directions of vulnerability research within or between these communities? Are there some specific knowledge gaps and how should these be addressed?

#### **TABLE 3: Policy-relevant science: Vulnerability research as a way forward**

- If we measure vulnerabilities, what should we do with the results?
- What is policy-relevant science in this context and how can we bridge the gap between research and policy?
- How can we promote interdisciplinary approaches and challenge the divide between natural and social sciences to create policy relevant approaches? What are the key targets long-term vs. short-term?

**TABLE 4: Built environment & ecosystem-based solutions in adapting and managing change**

- How can we manage and adapt to change in urbanizing environments? What kind of long-term change and short-term actions are needed?
- What kind of possibilities do built environment and nature-based solutions provide in building disaster resilient societies?
- What are for example the roles of urban planning and green infrastructure in adapting and managing change?

**TABLE 5: Fairness of adaptation**

- How can we take into account the differentiated positions and abilities of people in responding to (climate) change?
- How can we ensure the fairness of adaptation, or can we? How do we integrate principles of equity in adaptation decision making?
- What kind of cooperation would best promote the fairness of adaptation?

**TABLE 6: The limits of adaptation approaches: Power, environmental change and politics of vulnerabilization**

- What are the strengths and limits of current adaptation, vulnerability and resilience approaches and programs?
- Are there some broader societal processes that are producing vulnerabilities that are not addressed in adaptation programs?
- Should adaptation be more about challenging the current power relations and less about “saving” and “climate-proofing” different development interventions?

**TABLE 7: Risks and costs of not adapting and managing change & implications of adaptation**

- What are the risks and costs if we do not try to adapt and manage change? What kind of implications can there arise long-term/short-term?
- What are the social, political, financial and environmental implications of adaptation and mitigation programs? What are the negative effects that might occur as a result of adaptation (maladaptation)?
- What kind of cooperation and solutions should there be so that adaptation would not present problems but solutions?

## **Abstracts of the presentations**

# **Global Environmental Change, Vulnerability and Adaptation of Socio-Economic Systems**

**Prof. Barry Smit, University of Guelph, Canada**  
**E-mail: [bsmit@uoguelph.ca](mailto:bsmit@uoguelph.ca)**

Professor Smit will outline the evolution of research and policy relating to the concepts of vulnerability and adaptation, particularly in the field of global climate change. He will note their interpretations in the natural and social sciences, and illustrate their applications in resource management and international development initiatives. The main research approaches will be critiqued research approaches, particularly as they relate to actual decision making.

Examples of applied research will be presented from a variety of situations, including the Arctic, Bangladesh, Samoa, Nigeria, Vanuatu and Chile. The concepts will be interpreted in light of the recent Paris agreement on climate change. Needs and opportunities in policies and in research – particularly interdisciplinary research – will be presented.

# The political nature of global change: power, authority and knowledge in the context of climate change

**Prof. Andrea J. Nightingale, SLU, Sweden**

**E-mail: [andrea.nightingale@slu.se](mailto:andrea.nightingale@slu.se)**

\*The theoretical framework for this talk draws directly from the joint authored paper, Eriksen, S.H., Nightingale A.J. Eakin, H. (2015) *DzReframing adaptation: The political nature of climate change adaptation* *Global Environmental Change*, 35, 523-533.

Current policies to support vulnerability to climate change and adaptation are rooted in the Intergovernmental Panel on Climate Change (IPCC) definition that explicitly separates climate change drivers from other processes of social and environmental change. This attempt to respond directly to climate change has led to a wide variety of programs that seek to predict biophysical impacts and put in place measures to either combat negative consequences or capitalise upon potential benefits. In some cases, such programs have provided welcome financial resources and external support for local and regional level initiatives. Yet, in most cases, these programs pay insufficient attention to how they intersect with other, on-going processes of social and environmental change.

This talk seeks to expand theorizing on adaptation and vulnerability to better capture the political mechanisms of social change and the processes that serve to reproduce vulnerability over time and space. It is argued that adaptation is part of wider social, political, cultural, economic and environmental changes which together shape how we respond to climate change. The concepts of subjectivity, knowledges and authority are used as lenses into the operation of power and politics within adaptation processes. These concepts help focus attention on the mechanisms through which particular kinds of climate change adaptation measures are proposed and how many of them risk perpetuating the vulnerabilities they purport to address.

Examples from Nepal's climate change adaptation programs are used to demonstrate these conceptual ideas. Nepal is illustrative of many of the places in the world considered to need the most support for adaptation due to the projected biophysical impacts of climate change and widespread poverty. Adaptation programs are being implemented in a participatory manner that nevertheless largely by-pass earlier lessons learned from programs like community forestry. The examples illustrate how it is crucial to understand how new programs are rearranging subjectivities, knowledges and authorities at different levels. These rearrangements have significant implications for whether programs are able to achieve their stated objectives. The paper concludes by arguing that policy and practice needs to account for the political nature of climate change adaptation rather than placing so much emphasis on techno-managerial measures which characterize current adaptation efforts.

# The need for integrated assessment of potential human responses to global change

**Dr. Rachel Warren, University of East Anglia, UK**

**E-mail: [r.warren@uea.ac.uk](mailto:r.warren@uea.ac.uk)**

Global environmental change demands responses from humans if we are to avoid its adverse effects. For example, the projected impacts of climate change are severe and to avoid them greenhouse gas emissions need to be mitigated (reduced) greatly, whilst at the same time, humans and ecosystems must adapt to the remaining climate change which cannot be avoided. However, concurrently human populations are increasing rapidly, yet our society has set out aspirations in the form of the Sustainable Development Goals (SDGs) to provide secure supplies of food, water and energy to its growing population, and also to preserve biodiversity and thus the essential ecosystem services which biodiversity provides to our society.

In December 2015, the United Nations Framework Convention on Climate Change (UNFCCC) 21st Conference of the Parties came to an agreement in Paris to hold “the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels “. Most analyses show that achieving such a temperature goal is only feasible if a significant amount of climate change mitigation is carried out by using bioenergy with carbon capture and storage (BECCS). Where that bioenergy production induces land use change, either directly by replacing natural ecosystems, or indirectly by replacing cropland, the carbon release can exceed the carbon stored by the BECCS. Our aspirations to mitigate climate change, whilst yet improving food, water and energy security for our citizens, thus result in increased competition for resources, especially of land and water. In particular, Article 2 of the UNFCCC sets out a goal of limiting climate change to “avoid dangerous anthropogenic interference” and to allow “ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”. In order to achieve this, it is essential to consider how the agricultural, hydrological, ecological, energy and economic systems interact.

There are complex linkages between adaptation and mitigation; between adaptation and climate change; between mitigation and climate change; and between climate change impacts, adaptation, and mitigation, the biosphere, and the agricultural and hydrological system. A changing climate alters the distribution of water resources, the location of the most productive areas for growing crops, the distribution of renewable resources, and the distribution of species providing ecosystem services. Adapting to climate change alters the demand for energy and water. Land and water management will therefore be an essential component of future policies to address climate change. The question arises as to the feasibility of achieving the Sustainable Development Goals whilst also constraining global warming to well below 2 °C above pre-industrial levels: combating climate change is itself listed as one of the SDGs. Integrated assessment across disciplines is an essential tool enabling us to study complex systems where processes interact. It will be an essential tool in exploring the synergies and trade-offs between strategies to achieve various SDGs whilst delivering on the Paris Agreement.

# **Analyzing marginalization, inequalities, and power relations in the context of socioecological change**

**Prof. Farhana Sultana, Syracuse University, USA**  
**E-mail: [sultanaf@maxwell.syr.edu](mailto:sultanaf@maxwell.syr.edu)**

To better understand the complexities and outcomes of climate change, we need to analyze the production and exacerbation of marginalization, inequalities, and vulnerabilities around the world, with careful attention to varied power relations that are grounded historically, geographically, and socially. Such a perspective highlights the need to view climate change as a moral issue, not just as an economic, political, or scientific one. The notion of climate justice has emerged to underscore such concerns, and the discourse is increasingly being used by vulnerable communities and nation-states of the Global South.

Climate change is also sometimes argued to not only be a violation of various human rights but a violation of life itself, thereby underscoring the salience of a social justice perspective. Central to climate justice claims have been invocations of human rights and harm to demonstrate historical and geographical differences in the contributions to and the uneven impacts being felt with climate change. Understanding the ways that global discourses about climate change intersect with local political economic and social dynamics as well as socioecological change are important in explicating the complexities involved in climate justice claims. Climate change debates are also increasingly being wrapped up with notions of belonging, citizenship, democracy, and development in different communities, where climate justice is inherent to these processes and not separate from them.

Various social groups are fighting not just for rights to citizenship and belonging against increasing trends of dispossession of their lives and livelihoods, but also claims-making for more inclusive democracy on both the state and the global community. These debates are moving notions of mitigation, adaptation, and protection to envision more transformative possibilities, politics, and power relations. Thus, the range of contentions embodied in global debates of climate change call for a more careful analysis that is encompassing of multiple voices and locations, and integrative of intersectional axes of social differences (such as gender, class, etc.). Understanding comprehensively how climate impacts are experienced among differently situated vulnerable people thus becomes significant in advancing concerns of climate justice in more inclusive and meaningful ways across sites and scales.

# Environmental vulnerability, social resilience and multi-scale governance (ENVGOV)

**Prof. Anja Nygren, Sirkku Juhola, Markku Kanninen, Mira Käkönen,  
Adrian Monge Monge, Aleksi Räsänen  
E-mail: [anja.nygren@helsinki.fi](mailto:anja.nygren@helsinki.fi)**

The 2014 report of the Intergovernmental Panel on Climate Change states that the loss of life and economic assets from coastal and inland flooding represent the two major climate-related risks in the future. Furthermore, water-related risks and vulnerabilities related to rapid land-uses changes require new strategies for environmental governance and social resilience. While responsible governance has been emphasized in policy agendas, careful analyses of multifaceted links between environmental and social processes related to multi-scale water governance are scarce.

In this project, we analyze environmental vulnerability and social resilience in the context of agrarian policies, water-governance strategies and land-use changes and what are their impacts on water-related vulnerabilities through floods, water pollution and other kinds of risks. The research objectives are the following:

1. Evaluate current and future vulnerabilities of selected societies to environmental change
2. Understand governance structures and processes that have emerged in different ecological and socio-cultural contexts as a result of global environmental change
3. Identify promising governance initiatives and facilitate them towards social innovations

The project examines the multi-scale forms of environmental governance, paying special attention to the diversity of actors with their different access to knowledge and power. The research seeks to reformulate conventional approaches to governance: First, by broadening the analytical framework within which diverse modes of governance are linked together. Second, by developing approaches, which consider the ecological, political-economic and socio-cultural processes that shape people's vulnerability to environmental risks and their ability to cope with them.

The research analyses multi-scale governance in three river basins: 1) River Grijalva in Mexico, Latin America; 2) River Xe Bang Fai in Laos, South-East Asia; and 3) River Vantaanjoki in Finland. These cases offer a good combination of socio-spatial diversity relevant for gaining insights into heterogeneous environmental governance structures and practices. Empirical analyses that link the local regimes of water governance and the local experiences of vulnerability to multi-scale governance structures are

(continues on the next page)

relatively scarce.

The methodological framework of the research consists of the following components:

1. Assessment of current risks and vulnerabilities and their drivers in the three case-study areas.
2. Participatory scenario workshops to examine the future risks and vulnerabilities in each area through an analysis of the water-related changes and their environmental, social and political-economic drivers.
3. Analysis of governance initiatives that could lead into improved social resilience.

Through various case studies, we seek to identify similarities and differences in environmental risks and vulnerabilities and their multi-scale governance in different social-geographical contexts. The research uses methodologies that combine analyses of land-use changes through satellite images and examination of multi-scale risk scenarios and vulnerability assessments with qualitative approaches of political ecology and interpretative ethnography, based on thematic interviews and participant observation.

The project will contribute to new knowledge of human-environmental interactions and nature-society relationships relevant for better understanding of multi-scale environmental governance. It employs interdisciplinary approaches with cross-fertilizations between researchers with natural and social-scientific backgrounds. The project aims to promote synergic learning among researchers, decision-makers, development practitioners, activists, and local resource-users between the global North and South.

**Abstracts  
of the student workshop on  
Environmental vulnerabilities  
in the globalizing world**

# **HENVI teaching:**

## **Interdisciplinary workshop on Environmental vulnerabilities in the globalizing world**

**Janna Pietikäinen, University Lecturer  
Helsinki University Centre for Environment HENVI**

HENVI organizes annually an environmental special course and a workshop, which are linked to the theme of the HENVI Science Day. We invite the speakers of the Science Day to act as visiting teachers of the workshop.

The aim of the course and workshop is to help students with different backgrounds (i.e., natural sciences, humanities or social sciences) to deepen their understanding of issues dealing with environmental questions. This year our students have concentrated on environmental vulnerabilities and they have worked on following topics: adaptive capacities of agricultural communities; climate induced glacial changes and valuation of connected ecosystem services; and power relations in climate change and ecosystem services narratives.

During an intensive and hectic 5-week course students worked in three interdisciplinary groups. Students participating in the course represented the following majors at our university: aquatic science, chemistry, cognitive science, environmental change and policy, food science, forest economics, forest ecology, geography, physics and plant production science. The mixture of disciplines, nationalities and ways of thinking formed the richness of the course. Working in a multidisciplinary group is a valuable learning experience since that's how the environmental problems are to be solved.

All the reports were presented in the HENVI Science Day Students' Workshop on Monday May 9th. The reports were commented by our visiting teachers i.e. the keynote speakers; Professor Barry Smit in group 1, Dr. Rachel Warren in group 2 and Professor Andrea Nightingale and Professor Farhana Sul-tana in group 3. All students had the opportunity to give an oral presentation and take part in scientific discussions. The three groups were led by the expert supervisors Adrian Monge Monge, Aleks Räsänen, Alexandra Jurgilevich and Mira Käkönen.

The abstracts of the group reports are published on the following pages and the complete student reports can be downloaded at HENVI page <http://www.helsinki.fi/henvi/teaching/Workshop.htm>

### **Abstracts:**

Group 1: How to enhance adaptive capacity of the agricultural communities across regions?

Group 2: Quantifying climate change induced effects upon glaciers and their impact on ecosystem services

Group 3: The role of power relations in climate vulnerability and ecosystem services conceptualizations

# How to enhance adaptive capacity of the agricultural communities across regions?

**Mozumder Mohammad, Mäkinen Hanna, Ribeiro Moreira de Assumpcao Christine, Rinkkala Paavo**  
**Supervisors: Jurgilevich Alexandra, Monge Monge Adrián**

Intensified climate and socio-economic turbulence require the capacity to adapt to a multitude of changes. The uncertainty of change is greatest at the local level where individuals and communities operate. There is an urgent need for effective means to enhance the adaptive capacity of agricultural communities. Adaptive capacity is defined as the ability of a system (human or natural) to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. In this paper, we investigated whether a common pattern of the determinants that enhances the adaptive capacity of the agricultural communities can be identified across regions. The research was conducted based on a literature search, focusing on case studies from Asia, Africa and Latin America. Diversity (e.g. in terms of agricultural production, livelihood strategies, incomes) and knowledge (e.g. educational), information and learning (collaboration) were found to enhance the adaptive capacity of the communities in the face of change, irrespective of the case or region. These determinants of the adaptive capacity can provide interesting input in terms of guidance for management options to enhance the adaptive capacity of the communities in the face of change.

# Quantifying climate change induced effects upon glaciers and their impact on ecosystem services

**Edwards Naomi, Battistuzzi Cristina, Jeba Raj Immanuel, Gostlow Glen, Mazon Stephany**

It is understood that current climate change is causing glaciers to retreat globally in various areas, such as the Alps, the Himalayas and the Andes. This rate is estimated to be on average 10 meters per year. In this report, we will be analyzing the rate of glacier retreat and some of its impacts by reviewing literature and the associated effect and cost towards ecosystem services. A variety of methods can be used to analyze retreats and changes to the extent and mass of glaciers, which can also contribute to the creation of models which help in predicting future impacts. Despite the amount of studies, it remains difficult to assign reasons and predictions for glaciers worldwide due to variability of retreat rates. Impacts include changes to water quality and quantity, the frequency of outburst floods, and changes in the landscape which all affect the value of ecosystem services.

The increase in solute concentration in meltwater can be traced to a higher rate of melting of adjacent glaciers due to regional temperature increases that affect services connected to water quality. Furthermore, these regional temperature increases can be associated with higher frequency of glacial outburst floods contributing to landscape change and threatening human welfare. The potential to utilize hydropower energy, another ecosystem service, is being diminished by the future risk of reduced glacial runoff. We will assess these impacts by quantifying the change in the valuation of ecosystem services. It is therefore evident that there are many multifaceted impacts of climate change upon glaciers, and a range of costs upon ecosystem services.

# The role of power relations in climate vulnerability and ecosystem services conceptualizations

**D'Amato Dalia, Kauppinen Vera, Malkamäki Arttu, Nikkanen Maija, Sun Qingqing**

Climate vulnerability and ecosystem services are encompassing and complementary narratives which are most vigorously being mainstreamed in global academia and policy-making to address sustainability issues. Research on both changing climate and degrading ecosystems has concluded that the global environmental crisis will directly and concretely affect human well-being, and exacerbate poverty and social inequalities. Nonetheless, key literature on climate change and ecosystem services has been limited in accounting for the influence of power relations among groups in the context of social-ecological change. Power relations include North-South global dynamics, but also local issues related to gender or ethnicity, land or resources rights, topographic disposition, or any other condition that enables individuals or groups to exercise some form of power over others. The aim of this study is thus to analyze key conceptualizations of climate vulnerability and ecosystem services to determine if and to what extent the power asymmetries are included in these frameworks, and how these have developed in time. Based on our analysis, a recent trend towards integrating the elaboration of power within the climate change and ecosystem services narratives. Taking power dynamics into account is fundamental particularly to inform policy-making, where the risk is to ignore or exacerbate existing inequalities and conflicts, or even trigger them. The existence of this research gap in major sustainability narratives is extremely pressing, considering that equity is a key goal in sustainability, as formulated in the Sustainable Development Goals of 2015.

# List of Participants

<b>First name</b>	<b>Last name</b>	<b>Organisation /University department</b>
Tania	Afrin	University of Helsinki
Harri	Ahola	
Inka	Ahonen	University of Turku / Department of Geography and Geology
Jussi	Airaksinen	UEF
Iiris	Annala	University of Helsinki
Anni-Mari	Anttola	Aalto University, Architecture
Kaisu	Anttonen	City of Tampere
Anna	Aulakoski	
Antti	Auvinen	City of Vantaa
Eeva	Berglund	Helsinki Social Policy/Anthropology
Irina	Bergström	Finnish Environment Institute SYKE
Kirsi	Brück	Yleisradio
Corinna	Casi	University of Helsinki / Faculty of Social Sciences
Chi-chuan	Chen	
Wan Lih	Ching	UH
Dalia	D'Amato	University of Helsinki
Jonathan	Duplissy	UHEL - University of Helsinki
Naomi	Edwards	University of Helsinki / Geography
Toni	Eerola	Geological Survey of Finland
Reza	Esfahani	University of Helsinki
Alec	Estlander	
Daniel	Etongo	VITRI
Viliina	Evokari	City of Helsinki, Environment Centre
Álvaro	Fernández-Llamazares	University of Helsinki / Department of Biosciences
Gaia	Francini	University of Helsinki
Yongmei	Gong	ATM
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Glen	Gostlow	University of Helsinki
Fanny	Groundstroem	University of Helsinki / DENVI
Violeta	Gutierrez Zamora	UEF
Tiina	Haimi	University of Helsinki
Emma	Hakala	University of Helsinki
Eeva	Hara-Lindström	Helsinki Metropolia UAS/Information technology
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Harri	Hautala	
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Johan K.	Holmas	Aalto ARTS
Laila	Hosia	Yhdyskuntasuunnittelunseura
Jenni	Hultman	Food hygiene and environmental health
Essi	Huotari	University of Helsinki / LUOMUS
Markku	Hurme	Aalto

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Laura	Höijer	Ministry of the Environment, Finland
Antti	Irjala	Ministry of the Environment, Finland
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Jenni	Jelkänen	
Alexandra	Jurgilevich	University of Helsinki / Department of Environmental Sciences
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Roope	Kaaronen	
Helena	Kahiluoto	Luke / University of Helsinki
Jaana	Kaipainen	Ministry of Agriculture and Forestry
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Farid	Karimi	Social Research
Joni	Karjalainen	University of Turku
Pia	Katila	Natural Resources Institute Finland
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Mattes	Liebsch	TU Dortmund, Germany and University Helsinki
Anna	Lindfors	University of Helsinki / Department of World Cultures
Che	Liu	University of Helsinki / Department of Forest Sciences
Clara	Lizarazo	University of Helsinki / Department of Agricultural Sciences
Harriet	Lonka	University of Eastern Finland
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Ville	Lähde	BIOS research unit
Kaisa	Lähteenmäki-Smith	Prime Minister's Office
Jukka	Makkonen	Finnish Energy
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Teija	Mankkinen	Spek

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Brent	Matthies	University of Helsinki
Stephany	Mazon	University of Helsinki / Physics
Jon	McEwan	University of Helsinki / Denvi
Eila	McEwan	
Eija	Meriläinen	HUMLOG Institute
Paola	Minoia	Geosciences and Geography
Meri	Mononen-Matias	Latin American studies
Mohammad	Mozumder	University of Helsinki / Department of Environmental Sciences
Jarmo	Muurman	Ministry of the Environment, Finland
Antonina	Myllymäki	University of Helsinki / Department of Environmental Sciences
Marjukka	Mähönen	Ministry of Agriculture and Forestry, Finland
Satu	Määttänen	
Yoshihiro	Narita	Hokkaido University
Jari	Niemelä	University of Helsinki / Department of Environmental Sciences
Anna	Nikandrova	University of Helsinki
Shabnam	Nikbakhsh	University of Helsinki
Nathalie	Nunez	Development Studies
Paula	Nurmi	City of Helsinki, Public Works Department
Suvielise	Nurmi	Systematic Theology/ Sitra (project)
Anja	Nygren	University of Helsinki / Dept of Political and Economic Studies
Kati	Närhi	University of Jyväskylä / Dept of Social Sciences and Philosophy
Tuuli	Ojala	
Katri	Olkkonen	
Kira	O'Reilly	University of the Arts Helsinki
Susana	Ortega Alcantara	University of Helsinki / Department of World Cultures
Oluwatosin	Oshodi	Environmental Science
Ulla	Paaso	University of Helsinki / Department of Environmental Sciences
Tuure	Parviainen	University of Helsinki / Department of Agriculture and Forestry
Minna	Pekkonen	Finnish Environment Institute
Giulia	Pernisi	University of Helsinki / Nykykielten laitos
Kinga	Polynczuk-Alenius	University of Helsinki/ Department of Social Research
Erola	Pons Wendenburg	
Jeff	Price	Tyndall Climate Change Centre
Marjo	Priha	Helsinki Zoo
Aili	Pyhälä	University of Helsinki
Roosa	Rantala	
Christine	Ribeiro Moreira de Assumpcao	University of Helsinki / Department of Forest Sciences
Paavo	Rinkkala	Behavioral sciences - cognitive sciece
Eira	Rosberg	City of Lahti
Maria	Runonen	
Lotta	Ruokanen	City of Helsinki / Baltic Sea Challenge
Samica	Sadik	University of Helsinki / Faculty of Agriculture and Forestry
Paula	Saikkonen	National Institute for Health and Welfare
Arto	Salmela	Tulev tutk seura
Arto O	Salonen	
Francsico	Sanchez	
Maria	Sandberg	Hanken School of Economics
Sanja	Scepanovic	Aalto University
Mika	Siljander	University of Helsinki
Victoria	Sinclair	University of Helsinki / Department of Physics

Ari	Slioor	
Katriina	Soini	University of Helsinki /HENVI
Antony	Starr	University of Helsinki / Dept of Economics and Management
Marikki	Stocchetti	Finnish Development Policy Committee
Qingqing	Sun	University of Helsinki / Faculty of Agriculture and Forestry
Yitagesu	Tegege	EFI
Veli-Pekka	Tynkkynen	UH, Dept. of Social Research
Otto	Tähkää	Helsingin yliopisto/ Poliitiikan ja talouden tutkimuksen laitos
Pauli	Wallenius	Metsähallitus
Janne	Wikström	Hanasaari-Hanaholmen Swedish-Finnish Cultural Centre
Daniela	Wimmer	
Marika	Visakova	Helsinki Region Environmental Services Authority HSY
Anna-Liisa	Ylisirniö	Arctic Centre/University of Lapland
Erto	Örnberg	University of Helsinki / Research sector

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## Helsinki University Centre for Environment, HENVI

Helsinki University Centre for Environment, HENVI, carries out and coordinates environmental research and teaching in the University of Helsinki. All faculties of the university are participating in the activities of HENVI. The aim of HENVI is to strengthen and enhance interdisciplinary research and teaching and to raise public awareness of important environmental issues. During the years 2015-2016 HENVI has two interdisciplinary research programmes: Environmental vulnerability, social resilience and multi-scale governance (ENVGGOV) and Potential of continuous cover forestry for climate change mitigation, wood production and biodiversity protection (COMBIO).

Starting from 2014, HENVI has coordinated a doctoral program in interdisciplinary environmental sciences, DENVI. HENVI also coordinates and arranges minor subject studies called Multidisciplinary environmental study module (25 ECTS). The study module includes courses with themes ranging from multidisciplinary Baltic Sea studies to methods of environmental science and policy. The courses are open to all university students. HENVI organizes annually an environmental special course and workshop, which are linked to the theme of the HENVI Science Days.

More information on HENVI's activities: [www.helsinki.fi/henvi](http://www.helsinki.fi/henvi)

# Notes



HENVI Science Days are part of the Forum for Environmental Information, which promotes the use of scientific environmental information in societal decision-making. Forum for Environmental Information aims at advancing the transfer of timely environmental information and at increasing interaction between the producers and users of information. The main objective is to support national policy making, keeping in mind the global significance of environmental problems.

Read more: [www.ymparistotiedonfoorumi.fi](http://www.ymparistotiedonfoorumi.fi)

