

8<sup>th</sup> International Conference on  
**ENVIRONMENT AND CLIMATE CHANGE**  
November 22-23, 2018 Bucharest, Romania



Workshop (Day 1)

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## *Remus Cernea*

Romania

### **How strong is the political will to reduce the emissions responsible for climate change?**

The scientists try to warn from decades about the risks involved in the rising of temperatures because of human activities. The Paris Agreement was an attempt to take decisions at the highest political level in order to reduce the emissions. The agreement was unfortunately mainly a political compromise very far from the goals which were needed to be achieved. Many governments still financially support the fossil fuels and livestock agriculture. Many others simply do not support renewable energy or the reduction of the consumption of meat. After the withdrawal of the United States from the Paris Agreement the situation became worse and the commitment of other countries to reach at least the goals agreed had weakened. Meanwhile all of the information which comes from the scientific community are very alarming. The global temperature is rising faster and faster. But which governments really listen these signals and which not. And which might be the future without a strong political will to reduce the emissions.

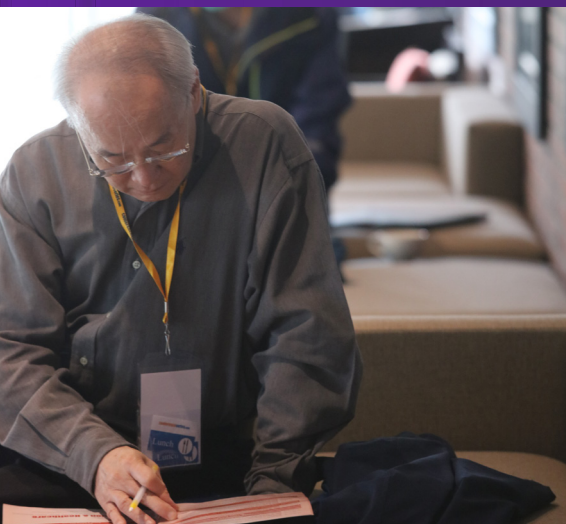
### **Biography**

Former MP, the only one ever with the agenda of the European Greens in the Romanian Parliament (2012-2016 legislature). Former adviser of the Prime Minister for environmental issues and dialogue with civil society. The initiator of the law which bans the using of animals in circuses which was voted by the parliament after three years of campaigning. Another law which passed was about promoting more scientific information in the media. Other laws initiated but not approved by the parliament: for banning the using of cyanide in gold mining, for banning the fracking for shale gas extraction, to stop deforestation, for the protection of the dolphins, to stop the hunting as so-called 'sport', to increase the penal punishment for the cruelty against animals. A supporter of a green sustainable and circular economy. A promoter of the electric cars and of the transition from fossil fuels and nuclear energy to renewable energy.

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### Soil responses to nitrogen addition: Evidence from a natural grassland

**Carmen Postolache**  
University of Bucharest, Romania

Over the last century, anthropogenic reactive nitrogen flows surpassed natural turnover rates, significantly altering its biogeochemical cycle. Our study focuses on soil responses to nitrogen additions in a natural grassland from Neajlov catchment (Romanian LTSER site). We used plots of 2 m<sup>2</sup> for fertilization with NH<sub>4</sub>NO<sub>3</sub> to simulate increased bioavailable nitrogen inputs of 0, 5 and 10 kg/ha/year which were fertilized during summer period. Topsoil samples were monthly collected and analyses were performed in triplicates. For each replicate, we measured pH, soil water and organic matter contents, along with enzymatic rates of nitrate reductase and urease. Inorganic nitrogen species were determined using spectrophotometric methods after extraction with KCl. We assessed the mineralization potential of soil microbial community via ammonium formation under hypoxic conditions. Study showed a slight acidification, more discernable for the highest nitrogen addition. We noted a temporal accumulation of both nitrate and ammonium, especially during fertilization period. As expected, enzymatic rates showed seasonal variation, but we documented lower rates as bioavailable nitrogen increased. We observed strong correlations between soil extracellular enzymes and substrates, which were clearer when warm and cold season were analyzed separately. Urease activity positively correlates with organic matter, R<sup>2</sup> values of 0.31 (warm season) and 0.41 (cold season), whereas R<sup>2</sup> for nitrate reductase and N-NO<sub>3</sub><sup>-</sup> were 0.49 and 0.47 respectively. Our findings suggest that more subtle responses of nitrogen surplus are found at soil microbial community level and that a natural ecosystem is more able to absorb this type of pressure.

#### Biography

Carmen Postolache is currently Dean of Faculty of Biology, Member of the University of Bucharest, Head of Research Platform in Biology and Systems Ecology, Member of the Institute of Ecology and Environmental Management. She has obtained PhD degree (1999) in Chemistry at the University of Bucharest. Since 1991, her research was focused on biogeochemical cycles of nutrients and heavy metals, ecotoxicology and water quality issues. In the last 20 years, she was a Member of 19 national projects and Principle Investigator for Romanian team in 8 international projects. She published more than 50 papers in international journals.

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**Pathways to sustainability and environmental justice: A pluralistic perspective on environmental risks, participation and capabilities**

**Susanne Borner**

Goethe University Frankfurt, Germany

Worldwide, there are still numerous cases where humans are exposed to environmental risks, both manmade and natural, and where communities lack the ability to respond. Understanding pathways to reducing vulnerability requires understanding why especially marginalized groups are often still excluded from environmental decision-making and/or lack the capacity to participate. This research explores the determinants of participation behavior in the case of Huichapan, Mexico, where the local community faces environmental and health risks as a result of climate change and environmental pollution. It draws on the analytical framework of environmental justice, advocating a pluralistic perspective on the dimensions distribution, participation, recognition and capabilities in achieving social change. Based on Sen and Hobfoll, a biographical capability approach was developed to explore the processes whereby individuals develop the capability to engage in community mobilization for environmental justice. Narrative biographical and semi-structured interviews with a total of 27 respondents were conducted. Interviewees were chosen to reflect the socio-demographic composition of the study area as well as the different participation behavior. Interviews were analyzed using qualitative content analysis. Results showed that pathways to sustainability require going beyond a focus on the distributive justice. Creating resilient communities requires a better understanding of the drivers of community participation and the interlinkages with individual capabilities. The case study showed respondents' capabilities were a result of biographical processes, generally linked to a sense of self-efficacy as a result of past gains and losses in terms of individual resources such as confidence, knowledge, energy and social capital.

**Biography**

Susanne Borner has obtained her phd from the department of social sciences at goethe university frankfurt, germany. She is a consultant for gopa mbh, an international development consulting, in the field of climate change and rural development. She has published on the perception of environmental and health risks, risk communication, environmental justice and community participation in latin America, Europe and Asia.

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### The severe impacts of global warming

**Taha Hussein Al-Salim**  
University of Mosul, Iraq

The atmosphere bounded the Globe is, all alone that provide and perpetuate life conditions that keep us alive in comparison with other planets that has no life conditions whether far or closer to the earth. Let's be grateful for the unique atmosphere we have had for so long, supported all living things. Let's not destroy it as we are doing now. Global warming can be defined as the gradual increase in the universal thermal average that leads to environmental and climatological changes which causes humanitarian, environmental and natural disasters that have been seen today. In other words, global warming could be simply defined as climate catastrophe. Temperature is one of the main indicators of global warming. The temperature of Mosul area has been measured for both months April and May of 2013 and 2014 and compared with the annual monthly temperature of the period 1980-2001 of Mosul city. The recorded temperature shows rising level and gives a clue of significant changes in the climate. The aim of this study is for making people know what is meant by global warming focusing on things that related to its happening and the way of limiting it even personally, more over discussing the emission of very harmful gases referred to as Greenhouse Gases (GHGs) such as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and CFCs, that causes global warming. Other gases such as CO, SO<sub>2</sub>, H<sub>2</sub>S and O<sub>3</sub> were also discussed in this research. Moreover, the lawful circumstances for limitation and manipulation of this phenomenon are also discussed. Global warming is the major challenge for our global society. Global warming will change our climate in this century such as increasing temperature, rising in sea level and significant changes in weather patterns, and more extreme climate events. This is not the end of the world as envisaged by many environmentalists in the late 1980 and early 1990, but it does mean a great deal of misery for billions of people.

### Biography

Taha Hussein Al-Salim has completed his msc from mosul university and his phd from durham university in uk. He is an assistant professor since 2002 and has published more than 22 researches in national and international reputed journals. He has participated in several conferences such as nottingham in uk, turkey, egypt, iraq, ksa, oman and dubai. He had different job position in mosul university such as head of the department of engineering science in remote sensing center, then head of the department of environmental technology, college of environment. Presently he is one of the staff of department of environmental technology, teaching hydrogeology and water quality for both undergraduate and post-graduate students.

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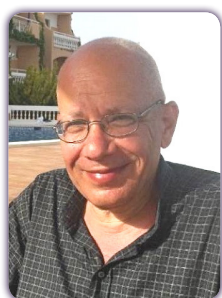
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Workshop (Day 2)

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**Farid El-Daoushy**

Uppsala University, Sweden

**Scaling up science, technology and innovation to meet the needs for regional and global sustainable developments**

Purpose of the workshop is to initiate contacts and to build up networking for scaling up science, technology and innovation to promote and implement effective infrastructures for sustainable developments on regional-global scales. Special considerations will be given to the existing socio-economic-environment conditions in various regions in the world. Relevant issues will be detailed and discussed.

Rationales: sustainability of life and prosperity of humans would never ever be possible unless climate-energy-water-natural and human resources are coherently intact. Sustainable and welfare societies are being achieved by citizens, from individual-to-collective levels, embedded in infra-structures that empower them with multi-layered capabilities for best social, environment and economic performance.

**The main strategic aspects to achieve the necessary scaling up are:**

1. Sustainability depends not only on the performance of people (social) in terms of profit from work (economy) but also on their responsible performance towards the environment (planet). Shifts are needed from current “growth economies” to future “secular economies”.
2. Scaling-up science, technology and innovation to meet effective socio-economic-environment developments on local and regional scales requires coupling science, technology and innovation to society, market & population needs through coherent infrastructures. Reforming higher education and shaping proper career-development-plans are crucial in this context. Universities and research institutes and supporting funding bodies are instrumental to achieve these goals.

**Supplementary solutions- scaling-up science, technology and innovation to meet effective socio-economic-environment developments would require:**

- (1) long-term strategies for sustainable “environment-climate” economies.
- (2) long-term strategies for sustainable “environment-climate” food security.
- (3) long-term strategies for sustainable “social-psychological” communication.
- (4) long-term strategies for sustainable “WENHR” education-awareness policies.

The long-term strategic solutions in (1-4) will involve coherent management policies.

**Biography**

Farid El-Daoushy became Professor in Environmental Physics at Uppsala University in 2004 with focus on promoting R&D for assessing the spatio-temporal impacts of human activities in aquatic eco-systems. His research involved the use of various scientific and technical approaches to follow the global cycles of pollution on the earth through using surface water bodies and their aquatic deposits as space-time indicators of water quality and the associated impacts in eco-systems.

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**Addressing socio-environmental concerns and reducing vulnerability: An environmental justice perspective**

**Susanne Borner**  
Goethe University Frankfurt, Germany

Environmental justice as an analytical concept focuses on the interlinkage between the environment and social disparities. Although the concept has evolved over time, it has been essentially used for making normative claims about the conditions that people perceived as 'unjust'. Different from the concept of 'ecological justice' which focuses on nature, it places individuals and communities at the centre of the debate. This research investigates environmental justice as a pluralistic theoretical framework for understanding and addressing socio-environmental concerns, reducing vulnerability, and for formulating demands for change towards a sustainable future. Building on the three-dimensional claim-making model developed by Walker (2012), this research argues in favour of an integrated environmental justice approach that combines a description of evidence with an understanding of the processes underlying the current status quo and normative justice claim. As a pluralistic concept, environmental justice integrates different dimensions such as distribution, participation, and recognition, and capabilities. In addition, this research seeks to provide a clearer understanding of what is environmentally unjust by integrating structural forms of discrimination with individual capabilities. It is argued that a situation can be considered environmentally unjust if people are disproportionately exposed to environmental burdens and they have less opportunity to participate in environmental decision-making to shape their environment, e.g., due to oppressive power structures and lack of recognition by others and/or due to a lack of individual capabilities. A review of the literature shows that taking into account individual capabilities is crucial in particular when seeking to address participatory inequalities. Therefore, I propose a Biographical Capability Approach to better understand the process whereby individuals acquire a sense of self-efficacy in dealing with environmental risks. This dual focus on structural conditions and individual capabilities contributes to a better understanding of pathways to reducing vulnerability to environmental hazards by strengthening people's agency and their ability to shape their own future.

**Biography**

Susanne Borner has obtained her PhD from the Department of Social Sciences at Goethe University Frankfurt, Germany. She is a Consultant for GOPA mBH, an international development consulting, in the field of climate change and rural development. She has published on the perception of environmental and health risks, risk communication, environmental justice and community participation in Latin America, Europe and Asia.

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### Impacts of climate change on the water resources of Azad Jammu & Kashmir, Kashmir Himalaya

Sardar Muhammad Rafique Khan  
Climate Change Center, Pakistan

The Himalayan region is one of the important global freshwater resources. The frequency and intensity of the current extreme weather events and new vulnerabilities with differential spatial and socio-economic impacts on communities are expected to increase as a result of climate change. The impact would be particularly disastrous for developing countries like Pakistan. The consequences of this change in global climate are already being witnessed in the Himalayan glaciers and glacial lakes. The Himalayan glaciers are retreating at rates ranging from 159 to 309 ha per year, resulting into disappearance of many small glaciers. As a result of retreating glaciers, the lakes are growing in number and size in the Himalaya. Identification of these glaciers and glacial lakes in the mountainous terrain of Azad Jammu & Kashmir (AJ&K) was made with the help of image interpretation techniques of remote sensing which was physically verified in most of the areas. A comparison was made on the basis of data taken from 2000, 2010 and 2017 images. The study revealed that the area of the glaciers have reduced from 15111 ha to 11350 ha from 2000 to 2017 with a total decrease of 3741 ha in last 17 years at the rate of 220 ha per year. The current rate of glacial retreat can result into vanishing of these water resources in next 51 years. Presence of these glaciers and glacial lakes has been observed dominant over 3500-4500 m elevation range in Neelum district of AJ&K. Other than the glaciers, the number of glacial lakes has increased from 50 (499 ha) to 60 (556 ha) from 2000 to 2017 in the study area, where 03 lakes are declared with most potential threat of GLOF in near future for the lives and livelihoods of mountain communities. In order to conserve these important mountain resources for future use and to protect the mountain inhabitant communities from the threat of GLOFs, effective measures and regular monitoring is required which will help in water resource management and disaster management, especially in the context of climate change in the Himalaya.

#### Biography

Sardar Muhammad Rafique Khan has recently completed his PhD from University of Azad Jammu & Kashmir, Muzaffarabad, Pakistan. He is the Deputy Director at Climate Change Center of Planning & Development Department, Government of Azad Jammu & Kashmir, Pakistan. He has published more than 05 papers and has contributed as co-author in development of AJ&K climate change policy, strategies and action plans for the state of Azad Jammu & Kashmir.

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### A community driven vulnerability assessment in Syangja District, Nepal

**Manar Zaki**

Trinity College Dublin, Ireland

Many flood resilience and climate change adaptation projects begin with some version of a vulnerability assessment as a foundation. However, assessing vulnerability is often a reflection of the evaluator's expertise and the resources they are prepared to employ. In the sphere of climate change research, a function of external threats and internal sensitivities is typically used to calculate vulnerability. A methodology utilizing quantitative measures of environmental and socioeconomic indicators naturally follows, conveniently producing the type of measurable, comparable and often visual evaluations that suit policymakers. While such research has very real merits, its utility within community driven development projects is limited. It is unlikely people see their own problems through a lens of the IPCC frameworks, measuring the character, magnitude and rate of climate variation to which they are exposed. When preconceived indicators of vulnerability are a starting point for a project to launch community involvement, there is little room to measure the risk facing a community's heritage, culture and social cohesion - factors threatened by either environmental risks themselves or even by the proposed solutions to the vulnerabilities identified. This research project would serve as a component of the Nepal Innovation Lab's Andhi Khola Flood Resiliency Project. The Syangja District, the location for this project, is affected by increasing weather related disasters including landslides, debris flows and flash floods. The project has two primary output goals: (1) A prototypical, site-neutral community engagement model designed to build a foundation of local input, perception and knowledge for the design of community landscape-based resilience strategies. This community engagement model explores methods for establishing long-term engagement through youth outreach and stewardship, redirection of destructive labor forces such as gravel harvesting through productive construction and landscape maintenance and giving community members agency in the design process. (2) A landscape design in Syangja exploring site-specific applications of resiliency infrastructures within local ecological, cultural, social and geophysical context. This design also outlines the roles of activities such as youth outreach and local labor within the evolution and growth of the master plan (Nepal Innovation Lab). The goal of study is to produce a place specific vulnerability assessment, using ethnographic research methods to distill definitions of vulnerability, resilience and adaptive capacity as they are perceived by community members. The findings of study may contribute to both objectives of the Andhi Khola Flood Resiliency Project. It helps to inform the development of a community engagement model by piloting a potential "first step" in establishing dialogue and/or better understanding local perspectives. Further, the study directly assists in providing insight into the local ecological, cultural, social and geophysical context for a landscape design. (Fundamental questions including (1) who is vulnerable; (2) what makes someone resilient; and (3) what or where is valuable? will be addressed to reflect local perspectives and priorities.

#### Biography

Manar Zaki is a graduate student at Trinity College Dublin earning her MSc. in Development Practice. She also has a B.A. in Global Sustainability from the University of Massachusetts, Amherst with a focus on global food systems. Manar has worked in seven countries across the globe, from public health programming in India to environmental advocacy in New Zealand to disaster risk reduction in Nepal.

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**Sustainable and competitive business environment through green and renewable energy developments**

**Alie Wube Dametew**

Addis Ababa University Institute of Technology, Ethiopia

In the current competitive environment green and sustainable renewable energy is a critical enabler for economic, sustainable and inclusive development particularly in developing economy. This study was conducted with a literature review collecting data. Since in the literature data gathering different journal articles are reviewed regarding green economy, green and sustainable renewable energy development, the issue of climate change and worlds. Also the interview and life experiences are also included in the methodology. Due to globalization effect, firm competition, technological advancement, production complexity are increased from time to time, and they impose many challenges on the manufacturing industries in related to green and sustainable economic developments. Accordingly the study investigates green and sustainable economic growth, challenges mainly found due to weak & improper implementations of green technology in a nations, poor and insufficient green and sustainable renewable energy strategies, problems on waste management systems, non-integrated & non-flexible green and sustainable technology adoptions were investigated. Furthermore in most sub-Saharan African countries addicted in various tribulations because of poor and non-integrated green and sustainable energy development strategies the spreading of the villages, the complications with grid extension alternatives, the relatively high electrification cost, especially for customers with low income and the limitations of diesel power are the main constraints and challenges of in most developing countries rural electrification. Though as a result of such challenge and problems, the growth and the developments of developing economies can decline and then they approaches to die. Moreover the result also shows that As a result of this weak and non-integrated energy systems most developing nations particularly sub-Saharan Africa highly affected by climate and the environmental disasters. Besides, the adoption and developments of green and sustainable renewable energy is becoming a critical tool in the revivals and competitiveness of the global business environment. Thus, to tackle these problems this study was designed to conduct developed green and renewable energy development strategies to the firm that overcome the challenges, the issue of climate change and the death of green economy. Since this green and sustainable economic development strategies can have great impacts to tackle the challenges and constraints of current turbulent worlds. Moreover this integrated model and strategies provides that bridges the gap and birth will begin within proper implementations of the model to developing economy. While the analysis available were done Analytical hierarchy process and a HOMER software package used for economical analysis as well.

### Biography

Alie Wube Dametew is currently a ph.D. Candidate with a specialization in mechanical and industrial engineering addis ababa university institute of technology school of mechanical and industrial engineering. His research interests include climate change sustainability, renewable energy improvements, social sustainability management systems, innovation and manufacturing capability, modeling & optimization in manufacturing systems, cloud and big data management systems, logistics and supply chain management, advanced and smart materials. More than 23 papers published by him, within more than 16 papers are published under preview international journal and more than 5 papers were published at national and international levels. So far, he worked as lecturer and head of research and community service in wollo university kombolcha institute of technology. He has also worked as continuous improvement expert and production supervisor in manufacturing companies and has sufficient experience on industrial plant project studies.

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### Notes: