

SANDEE-ICIMOD

# Karl-Göran Mäler Memorial Lecture

SUMMER 2024

9 July 2024 | 09:00–11:00 (Sri Lanka Standard Time)  
Hybrid (Negombo, Sri Lanka, and Zoom)

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## Advancing water systems science for food security in a climate crisis



**Mark Smith**

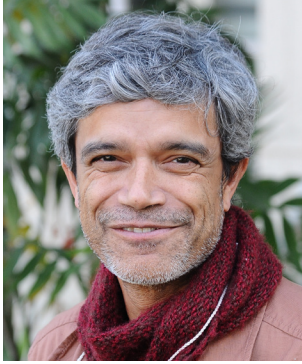
Director General  
IWMI  
Sri Lanka

Mark Smith is the Director General of IWMI. He was formerly IWMI's Deputy Director General, Research for Development and brings more than 25 years of research and programme management experience in water resources, agriculture, climate and sustainability. He was the Director of the Global Water Program at the International Union for Conservation of Nature (IUCN) from 2008–2018, where he led innovative, multi-regional programmes in Asia, Africa and Latin America addressing river basin management, transboundary cooperation and water governance, climate change adaptation, and Nature-based Solutions.

Smith has a PhD in ecology and resource management from the University of Edinburgh, UK and a Master's in climatology from the University of Guelph, Canada.

**Abstract:** A food-secure future is possible only in a water-secure world. As climate change intensifies, its impacts are disrupting water availability, exacerbating risks and posing serious threats to food security. This presentation will explore the concept of water security, its significance in the context of agricultural and food systems, and the profound impacts of climate change on these dynamics. To address these challenges, integrated systems solutions are essential. This talk will emphasise the need to consider water systems holistically to build resilient food security and examine how effective management across various sectors can strengthen water and food security in an increasingly unpredictable world.

## Are conservation and energy SDG complements? Panel data evidence from the Himalayas



### Subhrendu Pattanayak

Oak Professor of Environmental and Energy Policy  
Duke University  
USA

Subhrendu K. Pattanayak is the Oak Professor of Environmental and Energy Policy at Duke University, USA. He studies the causes and consequences of human behaviours related to the natural environment to help design and evaluate policy interventions in low-income tropical countries. His research is in three domains at the intersection of environment, development, health and energy: household energy, environmental health and forest ecosystem services. He has focused on design of institutions and policies that are motivated by inequities and a range of efficiency concerns (e.g., externalities, imperfect information).

Professor Pattanayak is also a Faculty Fellow of SANDEE and a Research Advisor to the Environment for Development Initiative (EfD Initiative). In his latest project that is derived from these appointments, Professor Pattanayak makes the case for inclusive environmental economics, and how to evaluate it. He received his Ph.D. in Environmental Economics from Duke University, and MS from Purdue University, USA.

**Abstract:** Supplying clean energy in rural areas is subject to scale economies: total demand is simply not high enough among communities with low spending power. Might conservation initiatives such as ecotourism provide demand stimulus in these remote rural areas? Nepal's location in the Himalayas provides a good setting to examine these questions because Nepal's commitment to conservation (e.g., 20 percent of its land area is part of the protected areas system), draws many thousands of tourists, especially ecotourists who trek to remote areas around 8000-metre peaks. This tourism can create economic opportunities but also create a demand for clean energy in these pristine remote locations. To examine the relationship between tourism and off-grid energy access, we compile and use a panel data set of the adoption of clean energy technologies and ecotourism in roughly 4000 village development committees of Nepal over one and a half decades (2001–2015). We find that tourism increases the installation of micro-hydro capacity, a finding that is robust to a variety of checks. Critically, we find that communities see higher employment and wage income in the tourism industry, suggesting a mechanism for complementarity of conservation and energy goals. Finally, we consider how ecotourism impacts environmental outcomes (e.g., proxied by firewood use, forest degradation and biodiversity habitat). In sum, achieving Nepal's target of 2 million tourists a year is likely to also promote energy access and therefore reduce poverty in the Hindu Kush Himalayas. The likely environmental impacts are largely unknown – to date at least. As such, we are able to comment on the potential synergies across at least two or more SDGs.





## MODERATOR



### **Soumya Balasubramanya**

Senior Economist  
The World Bank

Soumya Balasubramanya is a Senior Economist at the World Bank's Environment, Natural Resources and Blue Economy Global practice, and very recently joined SANDEE advisory committee. She was previously with the CGIAR between 2011–2022. She conducts original field-based research on poverty, development and equity

challenges in Asia and Africa, at the nexus of water, agriculture, environment, energy, and health, using large sample survey methods. She collaborates with universities, governments, and the private sector in low-, middle- and high-income countries to influence research, dialogue, funding, policy, and practice on inclusive development. She is also an Associate Editor for the journals *Agricultural Economics*, and *Water Resources and Economics*. She also coordinates the Committee for Women in Agricultural Economics of the International Association of Agricultural Economics. Her work has been featured in media outlets such as BBC, Forbes, NPR, The Economist and The Guardian. Soumya received a PhD in Environment and Development Economics from Duke University, USA in 2011.

This lecture series is part of the [47th Biannual research and training workshop](#) organised by SANDEE-ICIMOD.

SANDEE is a research capacity and academic leadership development programme of the International Centre for Integrated Mountain Development (ICIMOD). SANDEE supports ICIMOD's programmatic work and strengthens the Centre's economic and policy analysis.

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