



5th International Training on Ecohydrology in Tanzania

Main Theme: Nature-based and Bankable Nature Solutions for Environmental Sustainability

"Leaving No One Behind"

Host: UNESCO Chair on Ecohydrology and Transboundary Water Management

Sokoine University of Agriculture, Morogoro Tanzania

November 13th - 17th, 2023: National Carbon Monitoring Centre (NCMC)- Sokoine University of Agriculture, Morogoro Tanzania

Introduction

Our world faces many major challenges with regards to sustainable flow of ecosystem services. The negative impacts that arise from biodiversity loss and climate change are felt by nature and people across the globe. The number of natural disasters increases, pandemics rise, extreme weather conditions, wildlife and other species are in decline. Healthy nature and ecosystems are key for human wellbeing, development and environmental sustainability. The Sustainable Development Goals (SDGs) have been set up to counter the stated challenges. Yet, as the World Economic Forum points out there is a US\$ 2,5 trillion investment gap per year, as only US\$1,4 trillion of the required US\$3,9 trillion is invested each year to reach the SDGs by 2030. For preserving and restoring ecosystems alone, the required investment is estimated between US\$300 billion to US\$400 billion, here as, only US\$52 billion is being invested in such projects. With money only from governments and philanthropy we will never be able to fill this funding gap. Some asset managers and conservation experts have suggested that the private sector (especially banks and other financial institutions) could close more than half of this funding gap by setting up profitable enterprises with a positive impact to the nature and environment too.

Building conservation and nature-based solutions (NbS) and bankable nature solutions (BNS) into projects represents a massive opportunity. We need to work with companies, bank and other financial institutions and local stakeholders to develop NbS and BNS. Through this way, we can deliver impacts that reduce pressure on ecosystems, drive resilience and sustainability for both people and nature, while generating positive financial returns for communities and investors. That is why different conservation organizations are working effortlessly under the umbrella of NbS and BNS to set up conservation and bankable projects across a wide array of landscapes. Part of this work is done through mobilising funds for climate and development programs. Through initiatives, we can be instrumental in getting NbS and BNS underway and to serve as a catalyst for other conservation and bankable projects around the world.

Rationale for the Nature-based solutions (NbS) and bankable nature solutions (BNS)

Nature-based solutions (NbS) and bankable nature solutions (BNS) help to plan, deliberate the use of ecosystem services to improve flow of ecosystem services and increase resilience to climate change

and variability. They are typically adopted to bring about more sustainable conservation outcomes. They contribute to the improved management of nature conservation of ecologically sensitive environments and managing critical ecosystems. For instance, NBS have the ability to improve the income of poor people thereby prohibiting them from degrading nature and the environment as a whole. The two approaches entail sustainable management and use of natural features and processes to tackle socio-environmental challenges. These are actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges effectively, adaptively, simultaneously providing human well-being and biodiversity benefits. The two can also be integrated to enhance landscape conservation, restoration and bring about positive financial cash flows that can be used to attract for profit investors.

Objective of the training

To equip trainees with ample knowledge NbS and NBS for environmental sustainability, societal needs and ecosystem resilience.

The link between NbS, NBS and Ecohydrology

The use of NbS and NBS in solving environmental problems is crucial for optimizing the sustainable flow of ecosystem services for ecological and societal needs. This is also reflected in the Sustainable Development Goals of the 2030 Agenda which needs a sound problem-oriented scientific background dealing with hydrology and ecosystem sustainability in an integrated manner and a solution-oriented problem solving science (i.e. Ecohydrology). This science seeks to understand the underlying water-biota interactions and then to use the ecosystem processes as management tools from molecular to river basin scales. Ecohydrology also calls for maintaining notions of conservation for pristine ecosystems and expands efforts for regulation of Ecohydrological processes at novel ecosystems (human modified) in order to reinforce the sustainability potential (carrying capacity) and to achieve sustainability of water-related ecosystems in terms of water resources, biodiversity, ecosystem services and resilience to global change and anthropogenic stress.

Training content

This particular training will focus on:

- The state of the art and Perspectives for Development and Implementation of Ecohydrology for Enhancement of Water Resources as a key for Sustainability.
- Background to Nature-based Solutions for Sustainable flow of Ecosystem Services
- Meaning and Application of Bankable-nature Solutions for Environmental Sustainability
- The Nexus between UN Sustainable Development Goals and Ecohydrology
- Conservation Investment Initiatives and the Blue Economy
- Management of Conservation Areas
- Linking Microfinance Institutions and Climate Change Mitigation / Adaptation
- Community Engagement in Heritage Resources Management
- Coastal Wetland Ecosystems of Tanzania: Potential, Threats and Management Challenges
- Mangrove Forest Restoration by Using Nature-based and Bankable Nature Solutions
- Application of Isotopes and Hydrochem in Water Resources Management
- Potential for Ecohydrology in Freshwater and Watershed Management
- Ecohydrology and Human Health: Towards Sustainable Urban Ecosystems
- Biodiversity Monitoring Technologies

- River Health Assessment and Restoration (case studies using demonstration based on the bio-assessment methodologies)
- Practical Application of Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA)
- Introduction to French Language for beginners
- Field excursion (Mikumi / Saadan National Park)

Target group / who can apply

The primary candidates for this training course are **young scientists** working in the conservation sector, banks and other financial institutions, development practitioners, higher learning and research institutions, non-governmental conservation organizations, protected areas authorities, central and local government, to name just a few.

How to apply

Interested applicants are required to submit the following:

- 3 pages CV with contact information of two referees
- Proof of support (institutional/private) to pay registration fee (**USD 300**)
- 1 page motivation letter
- Front page of a valid passport (for foreign applicants)

Please email your application as a single PDF file to: makarius.lalika@yahoo.com, raphaelantidius@gmail.com and lalika_2mc@sua.ac.tz and by **October 15th, 2023**. Incomplete applications will not be considered for evaluation. Only successful candidates will be contacted.

Award

Trainees who successfully complete the training will receive Certificates of Attendance.

Instructors

- 1) Prof. Maciej Zalewski – ERCE / University of Lodz – **Poland**
- 2) Dr. Makarius C.S. Lalika – Sokoine University of Agriculture /UNESCO Chairholder – **Tanzania**
- 3) Prof. Luis Chicharo – University of Algarve – **Portugal**
- 4) Mr. Keven Robert – UNESCO Field Office – Dar es Salaam – **Tanzania**
- 5) Dr. Pascal Breil – University of Lyon – **France**
- 6) Mr. Antidius Raphael – African Wildlife Foundation- **Tanzania**
- 7) Prof. Michael McClain – UNESCO IHE Delft – **Netherlands**
- 8) Dr. Victor Kongo – Global Water Partnership – **Tanzania**
- 9) Dr. Emmanuel Japhet- Tanzania Forest Research Institute / Wetland International– **Tanzania**
- 10) Dr. Enock Chambile – Sokoine University of Agriculture – **Tanzania**

Female candidates are highly encouraged to apply

For questions and clarifications, kindly do not hesitate to contact:

Makarius C.S. Lalika, PhD.

Chairholder and Coordinator

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