

Capacity Building Training on Climate Change Vulnerability and Risk Assessment in the context of Water and Sanitation

Organizer-Nature's Conservation:

Nature's Conservation Private Limited (NCPL) was established in 2004 under Company Act of Nepal to carry out research and training and provide consulting services to government, UN Agencies, international/national non-governmental agencies, private sectors and academic institutions in the area of climate change, disaster risk reduction, watershed management, ecosystem, hydrology and meteorology. Policy, planning, engineering, management and social and scientific models and tools are the various categories which the company provides its services in the sectors. The company has energetic and experienced professionals in wide ranging fields. Working methodology of the company is to collaborate with national and international company, academic institutions and organizations.

Training overview and Rationale:

Water-related climate risks arise from too much water, too little water or polluted water. For example, the occurrence of floods and droughts is expected to increase with a changing climate, with the Intergovernmental Panel on Climate Change (IPCC) predicting water-related disasters to increase in both frequency and severity, as the whole global water cycle is affected by climate change. In fact, in many places, these changes are already taking place and the world is

ill-prepared to respond to these risks. In turn, this will cause loss and damage, which affect the supply and delivery of water, sanitation and hygiene services.

A changing climate brings with it uncertainties that compound those that are already inherent in the Water, Sanitation and Hygiene (WASH) sector, especially in developing countries that are the most vulnerable to these negative impacts. Despite increasing challenges with higher levels of warming, there is however opportunities to respond to the risks posed. Developing solutions to manage these escalating risks calls for new strategies and a stronger capacity to absorb expected changes.

Water is predicted to be the main channel through which climate change impacts will be felt by people, ecosystems and economies. Both observation records and climate projections provide strong evidence that freshwater resources are vulnerable, with the potential to be strongly impacted. However, predicting impacts on the availability and quality of freshwater resources, and more water-dependent services, remains extremely difficult.

Sustainable Development Goals (SDG)-6 includes clean water and sanitation where 99% of household has access to basic and piped water supply coverage and 90% of households with improved sanitation. As per the localization of SDGs at the Provincial and Local Government levels is critical for equitable and comprehensive outcomes, it is equally important to have a political set up at those levels willing and capable of handling the development agenda in an effective manner. Similarly, National Adaptation Plan (NAP) has also identified Public Health and Water, Sanitation and Hygiene (WASH) as a key thematic area due to its exposure and vulnerability to climate change. A large proportion of the population in both rural and urban areas depend on climate sensitive sectors, thus they are exposed and vulnerable to climate change.

Such risk assessment activities are very much resource intensive; and developing countries like Nepal can face large financing, technological and implementation capacity gaps. Such gaps have to be measured in concrete terms with proper needs assessment tools so that funding and raising implementation capacity could be accurately worked out. Hence, strengthening capacities of governments and communities to increase climate resilience over time is needed. This can be achieved by helping governments design, deliver and sustain investments in WASH services that consider the additional risks posed by climate change. Also by strengthening multi-level WASH governance, strategies/plans and systems as well as building the adaptive capacity of communities to deal with climate-related shocks and stress. So, this training helps the participants to integrate climate change and multi-hazards in WASH sector planning and programs in order to maintain the sustainability of water supply system as well as maintain sanitation and hygiene.

Objectives:

Enhance knowledge and skills of stakeholders, individuals, and professionals on understanding and assessing the risks of climate change and possible impacts on WASH services.

Participants are able to:

- Understand Climate change process and its impacts on water resources, water supply system, sanitation and hygiene
- Understand Climate change risk and uncertainty in WASH services
- Enhance knowledge on IPCC Fifth assessment report (AR5) and National Adaptation Plan (NAP) Framework for vulnerability and risk assessment and its application in WASH service

- Develop hands-on skill on how to assess WASH impacts through index approach and spatial assessment of vulnerability and risk existing based on existing practices and knowledge;
- Able to monitor water quality at the source and know to estimate water yield of the community managed water supply scheme
- Able to practice participatory tools in CC and WASH aspects in the field
- Support in decision making system to decide the climate change vulnerable water schemes in planning and programmes
- Able to integrate climate change and multi-hazards into WASH project designing and implementation and able to integrate climate change impacts on baseline database
- Enhance knowledge to build climate change adaptation/risk reduction plan formulation for climate resilient WASH facilities.

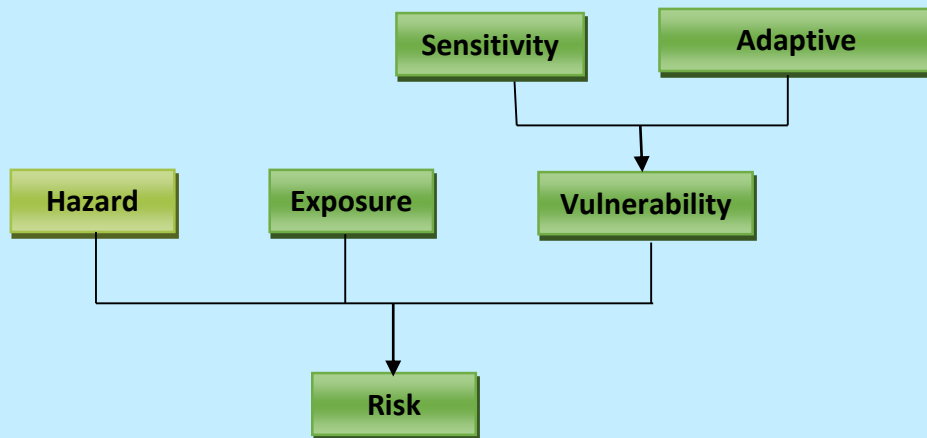
Overview of the Course Modules and Contents:

Module 1 (M1): Basic Concept on mainstreaming climate change and multi-hazard in WASH services



- Introduction to climate variability and climate change
- Understanding climate change process
- Climate change risk and uncertainties in WASH service delivery
- Impacts of climate change on WASH
- Current risks of climate sensitive health outcomes
- Sustainable water supply system
- Importance of water efficient technologies
- Importance of EcoSan (ecological sanitation)
- Existing national policy structures and institutional system ensuring safe water, sanitation practice: Strengths and gaps
- Understanding on climate proofing and maladaptation

Module 2 (MII): Vulnerability and Risk Assessment



- Understanding IPCC Fifth Assessment report (AR5) and National Adaptation Plan (NAP)
- Framework for climate change vulnerability and risk assessment based on AR5 and NAP
- Methods for vulnerability and risk assessment

- Steps for vulnerability and risk assessment
- Importance of relevant parameters and indicators during vulnerability and risk assessment
- Selection of appropriate indicators and sub indicators
- Stimulation exercise: Data collection through Vulnerability Capacity Analysis (VCA)

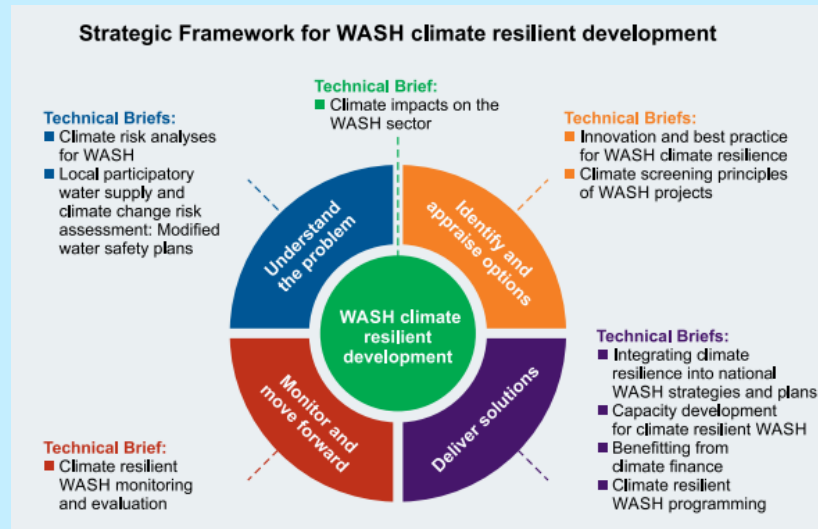
Module 3 (MIII): Field Monitoring and Index based Climate Change Vulnerability and Risk Assessment

Water Scheme	Exposure Index	Hazard Index	Sensitivity Index	Capacity Index	Vulnerability Index	Risk Index
Scheme 1	0.390	0.214	0.315	0.404	0.374	0.353
Scheme 2	0.434	0.236	0.241	0.533	0.436	0.402
Scheme 3	0.503	0.297	0.291	0.506	0.435	0.434
Scheme 4	0.446	0.194	0.271	0.580	0.477	0.419
Scheme 5	0.482	0.442	0.250	0.576	0.468	0.468

- Data collection and field visits
- Data entry, screening and management
- Normalization: Types and its significance
- Normalization of collected data
- Weightage and preferences
- Computation of indices (Hazard index, Exposure index, Sensitivity index, adaptive capacity index and Vulnerability index)
- Computation of composite risk index

- Categorization into 5 risk classes (Very high, High, Medium, Low, Very Low Risk class)
- Distribution of water supply schemes in GIS environment
- Significance of risk class for adaptation plan formulation

Module 4 (MIV): Formulation of climate resilient adaption plan



Source: GWP and UNICEF, 2014

- Mainstreaming climate change into development
- Strategic framework for WASH climate resilient development
- Prioritizing adaptation options using Multi-Criteria Analysis (MCA)
- Formulation of adaptation plan on the basis of prioritized adaptation options
- Estimation of future loss in WASH components by economic valuation method

Who should attend?

Water supply and sanitation professionals and water resources planner, engineers, actively engaged in designing, implementation and monitoring of water and sanitation schemes, Climate change practitioners, and disaster risk management practitioners, Hydro-meteorologists and interested persons can attend the training workshop.

Participants Requirement:

- Basic knowledge using GIS and Microsoft Excel.
- Laptops on Day 3 and Day 4 for data analysis and presentation

Resource Persons:

Experienced practitioners and experts from different organizations will complement NCPL in-house expertise in conducting and facilitating this course.

Course Delivery and Methodology

The course has been designed to promote the sharing of: knowledge, expertise and experience amongst the invited resource persons, sector specialists, guest speakers and the course participants. It will encourage participants to think and act innovatively utilizing contemporary adult learning methodologies, including, but not limited to:

- **Participatory and Interactive** lectures and discussions
- **Case studies** and good practices sharing
- Guest speeches and sharing the experiences
- **Indoor simulations** exercises

- **Field visits** (rapid monitoring of water quality and yield estimation at source and VCA tools application on vulnerability assessment)
- **Excel software application** on risk assessment data and information for VRA Analysis

Participants will be asked to participate fully in all of the above course activities. Certificates will only be awarded to participants who complete all course requirements.

Languages:

The presentation will be in English and facilitation in Nepali and English both depending on the participants' suggestion as well

Duration and Date of Timing

The training workshop is a non-residential programme. The designed module is classified into several sessions to meet the objectives of the course. The duration of training workshop is designed for 4 days. The training session will be started from 09 am and ended at 5 pm – non-residential. A total number of sessions will be about 12 and one day in the field work within the valley.

Planning for the Course:

Day 1 and Day 2: Two-way interactive lectures focused on MI and MII and **Day 3 and Day 4:** Field work and focused on MIII and MIV

Event Date: September 24-27, 2019 (Tuesday-Friday)/ 7-10 Asoj 2076.

Registration Fee:

Event Fee per person: Nepalese Rupees 22000 (in words twenty-two thousand only per person) including VAT (The cost covers: Tea/Coffee/Cookies, Lunch, Stationary, Certificate and Training materials).

For Students: 20% discount in the registration fee (copy of Valid Student Identity Card)

Cancelation:

The event may not be canceled from the management if the minimum number of participants (10 number of participants) confirmed. Registered participants may give a notice for their cancelation before 2 days of the event start if any causes.

Registration Process:

Interested individuals and organizations can register by sending the application and email. The application should be submitted online at: <http://www.naturesconservation.org/training/>

Venue: Kathmandu City

Contact and Letter of Interest Submission

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Contact for the details: Rabina Sipai (Mob 9841582614), Programme Officer, Nature's Conservation Pvt. Ltd.

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