



IN THIS ISSUE

ACTIVITIES

Annual General Assembly
Installation of AWS in Mustang
Annual Mountain EVO Meeting and Workshop
National Symposium on Hydrology and
Meteorology-2015

Talk Programme
Paper Presentation

FEATURES – NEWS

Mountain EVO Research Programme
Building Resilience to Climate-Related Hazards
(BRCH) project

**CONDOLENCE
PUBLICATION**

**Society of Hydrologists and Meteorologists-
Nepal (SOHAM-Nepal)**
G.P.O Box 11444
Tel: +977-1-4105029
Email: info@soham.org.np,
sohamnepal2002@gmail.com

Chief Editor: Sujan Subedi
Editors: Binod Parajuli, Ram Prasad Awasthi

Annual General Assembly



The Fourteenth Annual General Assembly of SOHAM Nepal was successfully held on September 25, 2015 (Ashwin 8, 2072) in Kathmandu. Mr. Jagat Kumar Bhusal, Chairperson-SOHAM Nepal, chaired the programme. The assembly began with warm welcome speech by Dr. Rijan Bhakta Kayastha, Vice Chairperson- SOHAM Nepal. Mr. Suman Kumar Regmi, General Secretary- SOHAM Nepal, presented the annual progress report for the fiscal year 2071/072 and proposed activities for the fiscal year 2072/073. The proposed activities were unanimously approved by the General Assembly. Mr.

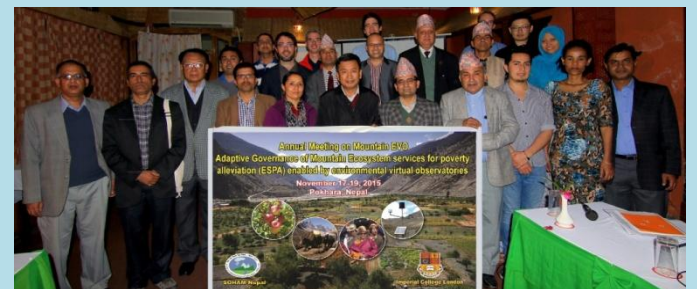
Rameshwor Rimal, Treasurer-SOHAM Nepal, presented the financial report for the fiscal year 2071/072. Finally, Mr. Bhusal delivered a vote of thanks to all for their participation and closed the programme. A dinner programme was also hosted by SOHAM Nepal.

Installation of AWS in Mustang

Monitoring of climate and water is one of the main activities of the ongoing Mountain EVO research program which aims to strengthen the Meteorological and Hydrological observation in Mustang District in collaboration with Department of Hydrology and Meteorology (DHM). SOHAM Nepal installed an Automatic Weather Station (AWS) at Chhoser, Mustang on November, 2015 with the technical support and recommendation from DHM. The data received from AWS will be useful to monitor daily weather activities for DHM. Local agency and people may also take advantage of the current weather information.



Annual Mountain EVO Meeting and Workshop



Annual Mountain EVO meeting and workshop was held during November 17-19, 2015 in Pokhara. The internal project meeting was held on November 17 and 18 and the workshop was held on November 19, 2015. International delegates, local experts engaged in the Mountain EVO project in four countries namely Peru, Kyrgyzstan, Ethiopia and Nepal along with Principal Investigator Dr. Wouter Joris Lieven Buytaert actively participated in the meeting. Major stakeholders and co partners from Nepal also participated in the workshop. The meeting offered an opportunity to interact/hold dialogues among all project partners. The meeting reviewed the progress of the Mountain EVO project activities and also provided guidance on how to develop a better understanding of the

ecosystem services using high quality and cutting edge data gathering techniques. The meeting also discussed on how to use such new knowledge into local decision making process, so that the research can help in better management of ecosystem services that contribute to poverty alleviation.

National Symposium on Hydrology and Meteorology-2015



National Symposium on Hydrology and Meteorology-2015 was organized by Society of Hydrologists and Meteorologists-Nepal (SOHAM-Nepal) with support from Department of Hydrology and Meteorology (DHM), Government of Nepal, UNESCO International Hydrological programme (IHP) Nepal and International Centre for Integrated Mountain Development (ICIMOD) on December 24, 2015 in Kathmandu.

The programme was inaugurated by Prof. Dr. Jibaraj Pokhrel, Vice-Chancellor- Nepal Academy of Science and Technology (NAST). In the inauguration session, Mr. Suman Kumar Regmi, General Secretary-SOHAM Nepal, delivered warm welcome speech. On the occasion, Dr. Rishi Ram Sharma, Director General- Department of Hydrology and Meteorology, Dr. Laxmi Prasad Devkota- IHP Nepal, and Dr. Mandira Shrestha, representative from ICIMOD highlighted the importance of Hydrology and Meteorology and role of youth to carry out research activities. The programme was chaired by Assoc. Prof. Dr. Rijan Bhakta Kayastha, Vice Chairperson-SOHAM Nepal, and he also gave closing remark for inaugural session.

The technical session was followed by inauguration session. The technical session was divided mainly into three groups: Hydrology, Meteorology and Glaciology. At first, Assoc. Prof. Dr. Shreedhar Maskey delivered plenary lecture. There were altogether 16 oral presentations and 5 poster presentations. The technical session was chaired by Mr. Kiran Shankar Yogacharya, Dr. Madan Lal Shrestha and Mr. Om Ratna Bajracharya for Hydrology, Meteorology and Glaciology sessions respectively.

At the end, Mr. Barun Paudel, Secretary- SOHAM Nepal, gave vote of thanks and also closed the programme. The programme was conducted in the lecture hall of Nepal Tourism Board (NTB), Bhrikuti Mandap, Kathmandu.

Talk Programme

- Talk programme on “Evaluating the applicability of seasonal forecasts to rice yield prediction in the Terai region using a dynamical crop model” by Dr. Prakash Kumar Jha was organized on August 18,

2015 at Nepal Agricultural Research Council (NARC), Khumaltar, Lalitpur

Paper Presentation

- “Update on Ongoing Activities/Emerging Findings and Research Themes/Future Activities” by Dr. Prem Sagar Chapagain, Mr. Santosh Regmi and Ms. Praju Gurung, SOHAM-Nepal during a workshop organized by University of Birmingham and Imperial College in London, UK on September 1-11, 2015
- “Mountain-EVO Nepal case” by Mr. Santosh Regmi, Researcher, SOHAM-Nepal during a workshop organized by University of Birmingham and Imperial College in London, UK on September 1-11, 2015
- “Mountain EVO experiments in Mustang” by Mr. Santosh Regmi, Researcher, SOHAM-Nepal on the Annual Mountain EVO Meeting/Workshop organized by SOHAM Nepal and Imperial College in Pokhara, Nepal during November 17-19, 2015
- “Mountain EVO Nepal: ESS and Local livelihood” by Dr. Prem Sagar Chapagain, Senior Researcher, SOHAM Nepal on the Annual Mountain EVO Meeting/Workshop organized by SOHAM Nepal and Imperial College in Pokhara, Nepal during November 17-19, 2015
- “A few tips on climatic patterns in Nepal mainly Jomsom, study area of Mountain EVO (1981-2010)” by Dr. Janak Lal Nayava, Advisor and Chief of Project Monitoring Committee, SOHAM Nepal on the Annual Mountain EVO Meeting/Workshop organized by SOHAM Nepal and Imperial College in Pokhara, Nepal during November 17-19, 2015
- “Trends of temperature at the different levels in Nepal; Spatial variation of climatic patterns in the Eastern Zone including Koshi” by Dr. Janak Lal Nayava, Advisor and Chief of Project Monitoring Committee, SOHAM Nepal during a workshop on “Developing regional collaboration in river basin management in response to climate change” organized by University of Monash, Australia in New Delhi, India on December 16-17, 2015
- “Water Security in Nepal” by Mr. Jagat Kumar Bhusal, Chairperson, SOHAM Nepal during a workshop on “Ensuring Water Security in Changing Environment Scenario for Water Professionals of Cluster Countries” organized by Indian Institute of Technology (IIT), Mumbai, India on November 26-27, 2015

Mountain EVO Research Programme

The global climate change and its consequences have serious impact on ecosystem services (ESS). Meteorological, hydrological and biological processes have large spatial gradients in mountain regions. In other words, the complexity of mountains make predicting the direction of future changes in ecosystem services extremely difficult. This leads to large uncertainties in future predictions about mountain ESS. Under such conditions, the value of day-to-day information about

how local ecosystem behave increases sharply. The evidence and tools provided to decision makers and end users enable to manage ecosystem sustainably. Improved understanding of how ecosystem function and the services they provide plays a potential role in achieving sustainable poverty reduction. Hence a continuous monitoring of crucial ecosystem processes becomes paramount.

A research programme entitled “Adaptive Governance of Mountain Ecosystem services for Poverty Alleviation (ESPA) enabled by Environmental Virtual Observatories (Mountain EVO)” has been initiated with EVO-based technologies for participatory data collection and knowledge generation on multiple ESS in four poor and remote mountain regions: (Kyrgyzstan, Nepal, Ethiopia and Peru) to improve the quality of life of the rural people. Dr. Wouter Joris Lieven Buytaert, Imperial College, London, UK is the principal Investigator of the project.

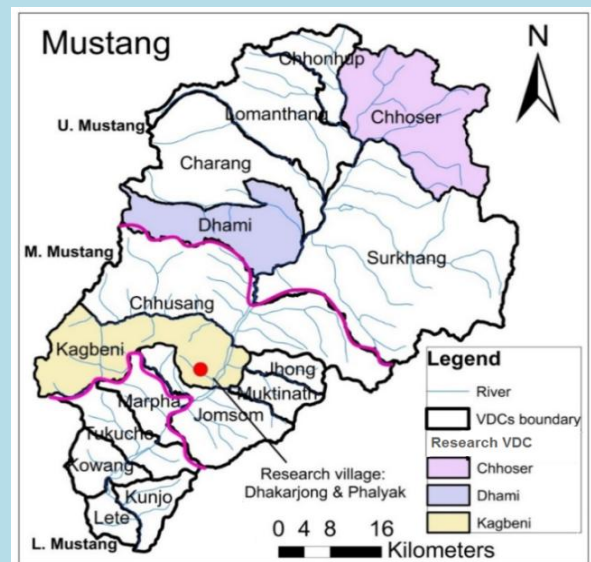
The main insight of this project is that ecosystem services (ESS) management can alleviate poverty if it is embedded in local processes of adaptive governance that rely on continuous monitoring and knowledge generation. This is particularly true in remote mountain regions, where poverty is often interlocked with multiple ecosystem threats, data scarcity, and high uncertainties. Existing environmental data collection is often geographically biased towards more densely populated regions, and prioritized towards strategic economic activities that bypass the poor. Our central research question is how contemporary conceptual and technological innovations in environmental sensing, data processing, interactive visualization and participatory knowledge generation can be leveraged to implement demand-driven, interactive and multidirectional approaches to knowledge generation about ESS. Our approach to this question is structured around the notion of Environmental Virtual Observatories: decentralized and open technology platforms for knowledge generation and exchange that enable participation of marginalized and vulnerable communities bypassed by the traditional mechanisms.

Environmental Virtual Observatories (EVOs) is the emerging suite of information gathering, processing and dissemination technologies (infrastructure, tools and software) supported by the World Wide Web that can enable cross-fertilization of different sources of knowledge on shared virtual platforms. The openness of a web-hosted platform also facilitates the application of functionality beyond information access, such as interaction between users and scientists, and between users themselves. As such, it offers an alternative or complement to labour-intensive contact-based research, and a real possibility to turn the typical top-down flow of information from scientists to users into a much more multi-actor dialogue. This shared virtual space makes it possible for multiple actors to participate actively in the social and scientific processes of knowledge co-creation, sensing, data processing and visualising the environment, in different arenas of environmental governance.

The project analyse how monitoring and knowledge generation of ESS in mountain regions can be improved, and

used to support a process of adaptive, polycentric governance focused on poverty alleviation. For this, project blends cutting-edge concepts of adaptive governance with technological breakthroughs. The availability of cheap and robust sensors and communication technologies provides great opportunities for citizen science: bottom-up, user oriented data collection focused on local concerns. Later, the project takes citizen science to a next level, by integrating it in a broader framework of participatory data processing, knowledge generation and sharing. Thus, the project adopts the concept of EVOs and leverage it for poverty alleviation.

The project aim to analyse how EVOs can be used to generate knowledge and to alleviate poverty in four secluded and poor mountain regions. In each location, the project collects evidence on the local decision-making processes on ESS and their local socio-economic context. At the same time, project will develop a technology tool set to enable EVO development in each case. Subsequently, the results of both processes will be brought together to implement tailored EVOs to support citizen science and local knowledge generation.



In Nepal, SOHAM Nepal is an implementing institution of the Mountain EVO Nepal case with support from the partners; Department of Hydrology and Meteorology (DHM), District Development Committee of Mustang and International Hydrological Programme-Nepal (IHP-Nepal). The research is aimed in the three Village Development Committees of Mustang District of Nepal. The pilot study areas envisaged in the project are Kagbeni, Ghami and Chhoser Village Development Committee. The research programme was officially launched in 2013, but the programme was implemented from January, 2014 in Nepal. The duration of the project is three years.

(Contributor: Suman Kumar Regmi)

Building Resilience to Climate-Related Hazards (BRCH) Project

Building Resilience to Climate-Related Hazards (BRCH) project aims to transition Nepal’s hydro-meteorological services into a modern service-oriented system that will build resilience today as well as adaptive capacity for the future. It

intends to enhance government capacity to mitigate climate related hazards by improving the accuracy and timeliness of weather and flood forecasts for disaster preparedness by the general population and warnings for climate-vulnerable communities. The project will also support agricultural management information system services to help farmers mitigate climate-related hazards.

The PPCR is a program of the Climate Investment Funds (CIF), administered by the Multilateral Development Banks (in Nepal the Asian Development Bank, the International Finance Corporation and the World Bank) to support implementation of country-led programs and investments. The overall objective of the PPCR is to demonstrate ways to integrate climate risk and resilience into core development planning. Nepal accepted the offer to participate in the PPCR on May 13, 2009. The Building Resilience to Climate-Related Hazards (BRCH) project started on 20 June 2013 in Nepal after signing an agreement between the Government of Nepal and the World Bank on 30 April 2013.

The total project cost is \$31.30 M. Among them, World Bank manage \$ 31 M (Grant: \$16 M, Loan\$15 M) whereas Government of Nepal bear \$0.30 M. The loan has a final maturity of 40 years, including a grace period of 10 years. The service charge payable by the Borrower is equal to one-tenth of one percent per annum.

The Project comprises four components as below.

Component A: Institutional Strengthening, Capacity Building and Implementation Support of DHM

This component aims to strengthen DHM's legal and regulatory frameworks, improve institutional performance as the main provider of weather, climate and hydrological information for the nation, build capacity of personnel and management, ensure operability of the future networks, and support project implementation. There are three sub-components:

- Institutional Strengthening
- DHM Capacity Building and Training
- Systems Design and Integration, Project Management and Monitoring

Component B: Modernization of the Observation Networks and Forecasting

This component aims to modernize DHM's observation networks, communication and ICT systems, improve hydro-meteorological numerical prediction systems and reconstruct / refurbish DHM offices and facilities. This component has the following five sub-components:

- Technical Modernization of Observation Networks
- Modernization of DHM's Communication and ICT Systems
- Improvement of the Numerical Hydro-meteorological Prediction System
- Design and Pilot Operation of an Environmental Monitoring Network

- Refurbishment / Reconstruction of DHM Offices

Component C: Enhancement of the Service Delivery System of DHM

The objective of this component is to enhance the service delivery system by creating a public weather service that provides weather and impact forecasts, and information services for vulnerable communities and the key weather dependent sectors of economy. The main sub-components are:

- Introduction of a Public Weather
- Strengthening of DRM Operations including piloting of "end-to-end" early warning systems in two river basins in the western and eastern parts of Nepal
- Improvement of Service Delivery
- Establishment of a National Climate

Component D: Creation of an Agriculture Management Information System (AMIS)

The objective of this component is to provide critical and timely agro-climate and weather information to farmers in order to increase productivity and reduce losses from meteorological and hydrological hazards. The main sub-components are:

- Agricultural Management Information System - Portal, Hardware and Software
- Information Products
- Information Dissemination
- Capacity Building
- Project Management, Social Outreach and Communication, Monitoring and Evaluation of Component

DHM is implementing the Components A, B and C whereas Ministry of Agricultural Development (MoAD) is implementing Component D.

(Source: <http://brch.dhm.gov.np>)

CONDOLENCE

SOHAM Nepal is deeply saddened by the sad demise of our life member, Mr. Purna Bahadur Shrestha on Nov 4, 2015. He was one of the founding members of SOHAM Nepal serving as a first treasurer. He was a Meteorologist by profession, a dedicated person, served to the Government of Nepal. He was a former Deputy Director General of Department of Hydrology and Meteorology (DHM). SOHAM Nepal would like to express deep condolence to his family members, relatives and friends. May his soul attain eternal peace.



PUBLICATION

Journal of Hydrology and Meteorology, Vol. IX, Number 1, 2015 an annual Journal of SOHAM-Nepal was published in August, 2015. Ten research papers have been included in the Journal.