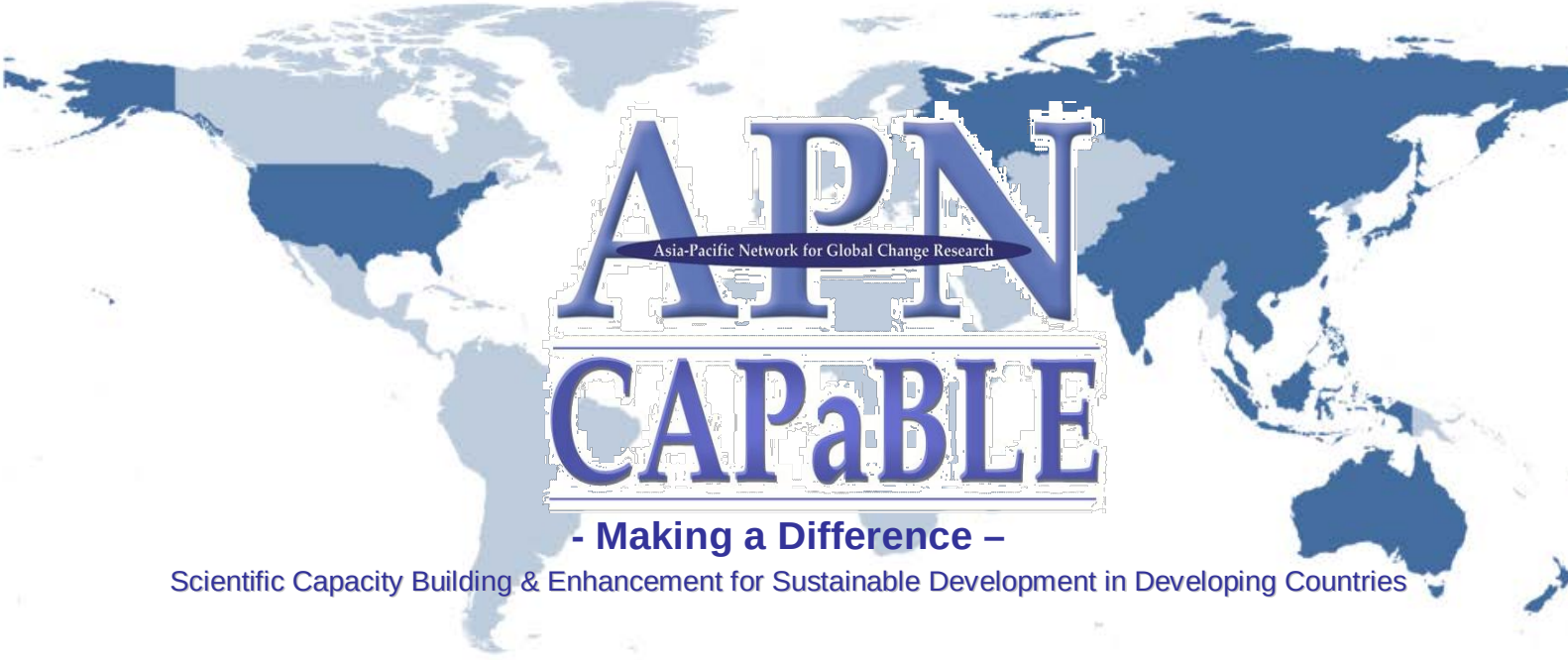
FINAL Draft REPORT for APN PROJECT

Project Reference Number: CBA2013-07NSY-DAHAL

Policy Brief 'writeshop' for Early Career Researcher: An Approach to Promote Greater Science-Policy Interface in South Asia



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Final Report submitted to APN

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OVERVIEW OF PROJECT WORK AND OUTCOMES

Non-technical summary

The Policy Brief 'Writeshop' for Early Career Researchers in South Asia was organized for early career researcher in the South Asia by the Small Earth Nepal (SEN), the Consortium for Capacity Building (CCB) at INSTAAR at the University of Colorado, Boulder, USA, the Asian Institute of Technology (AIT), Thailand and Small Earth Australia (SEA), Australia with a funding support of the Asia-Pacific Network for Global Change Research (APN) under the CAPaBLE Program, from 1 to 3 May 2014 in Kathmandu, Nepal.

The 'writeshop' was structured with the goal of capacity building of young researchers to write policy briefs from their research outcomes; and to publish of a collection of policy briefs on science-policy interface in the field of global change research.

Twenty seven early career researchers (Annex I) from six countries in South Asia, i.e. Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka, as well as three resource persons and five mentors attended the 'writeshop'. Writing fellowships have been provided for 12 selected participants to strengthen their policy briefs from their research findings and a peer reviewed policy briefs of policy-science interface was published and circulated widely.

As a part of project, a workshop entitled "Policy Forum: Bridging Science and Policy" was organised.. The forum attracted more than sixty participants who were scientists, policy makers, students, development practitioners and journalists. Panellists and participants discussed and debated on the regional policy needs and their implications to people.

Keywords: *Policy, Writeshop, South Asia, Global Change,*

Objectives

The main objectives of the project were:

- Capacity building of young researchers from south Asia to write policy briefs from their research outcomes; and
- Publication of a peer-reviewed policy briefs on policy-science interface in the field of global change research in South Asia

Amount received and number years supported

The Grant awarded to this project was: US$36000.00 for 1 Year

Activity undertaken

To meet the objectivities of the project following activities were carried out:

1. **Formation of Steering committee:**

At the initial phase of the project, a steering committee consisting of experts on policy research was formed (Annex II). The steering committee helped the organizers to:

- Select of participants for the writeshop
- Design the curriculum for the entire writeshop
- provide online mentorship to the selected participants

- Review policy brief on science policy interface prepared by the participants

2. Announcement of application for participation in the writeshop.

An open announcement was circulated in South Asia for application to the policy brief 'writeshop'. Applicants were asked to provide a clearly written abstract that summarizes their research findings and how it could affect policy in national and regional levels.

3. Selection of participants for writeshop

From the received applications, 27 early career researchers from south Asia were selected on the basis of policy relevance and option of their research. While selecting the participants, gender and regional balance were well considered.

4. Online mentorship

Experts (members of the steering committee) provided online mentorship to the selected participants to help them write policy briefs from their research. Each participant submitted the policy brief incorporating the feedback received from mentors to the organizer before participating on the 'writeshop' in Kathmandu.

5. Policy Brief writeshop:

Three-day policy brief 'writeshop' for the selected participants was organized in Kathmandu on 1-3 May 2014 (Schedule Annex: III). The 'writeshop' provided a forum to the participant to get knowledge on writing policy-related documents from the outcomes of their research. Experts and mentors trained the participants by knowledge sharing and on-hand exercises.

6. Policy Forum

A policy forum was organized in the evening of the first day of the write-shop. Participants interacted with the policy makers and experts of the region. This forum enhanced the network among the practitioners and beginners in policy issues. Experts from variety of fields were attended the workshop (Annex IV).

7. Policy fellowships

After the completion of the 'writeshop', twelve participants were selected for a fellowship to continue the process of writing effective policy briefs from their research for the publication.

8. Publication of peer-reviewed policy briefs on science-policy interface

A peer-reviewed policy briefs written by participants were be published and circulated widely.

Results

The programs become successful to meet its objective. The following results were achieved from the projects:

1. Early career researchers from South Asia region have been equipped with knowledge on writing policy briefs from their research findings
2. Twelve papers from the writeshop have been selected and their policy briefs were published
3. A strong network between the youth and experts in the field of global change has been formed.

Relevance to the APN Goals, Science Agenda and to Policy Processes

This project enhanced the capacity of early career researchers in South Asia in writing policy briefs from their research article. It also raised the awareness of policymakers about the option available from current global change research. In this way, it addressed the priority area of APN goals.

This project also addressed the APN's Science and Policy Agendas, particularly by engaging young scientists (physical and social science) to participate, share experiences and learn about challenges by interconnecting their research findings with policymaking processes. Since it created and enhanced interactions among scientists and policymakers as well as provided scientific input to policy decision making and to public understanding, it is also in line with the goals of APN. Therefore, it focuses on the priority area of APN on science-policy interfacing and dissemination activities.

Self-evaluation

The project fully attained its objective to develop the capacity of south Asian young researcher to write the policy briefs from their research. This program became another effective capacity building program by the Small Earth Nepal and its other collaborators with financial support from APN similar as International Graduates Conference on Climate Change and People on 2010 and Asia Pacific Graduates' Youth Forum on Green Economy on 2012. The feedbacks received from the participants were also very impressive. Participant's energy and active engagement in each of the session reflects the importance of the writeshop for them. Hence, we truly believe that the writeshop was one of the best programs that have been conducted with the support from APN.

Potential for further work

The project has brought new opportunities for youth to engage in further research and made policy recommendation on ongoing issues related to global environmental changes. It has even motivated some participants to publish policy brief from their other research on national and regional scales. Also, through the network formed during this project, collaborators are also interested to continue similar kind of projects in future.

Acknowledgments

We would like to thank the Asia Pacific Network for Global Change Research (APN) for its support to conduct the project "Policy Brief 'writeshop' for Early Career Researcher: An Approach to Promote Greater Science-Policy Interface in South Asia". Our Sincere gratitude also goes to all the mentors, presenters and the participants for sharing their expertise and research findings.

-SEN, CCB, AIT, SEA

TECHNICAL REPORT

Preface

This project was mainly focused on capacity building of the early career researchers from different disciplines through the procedure of knowledge and experience-sharing by experts in writing policy briefs from their research. The young researchers from South Asia were trained on policy brief writing from their global change research to understandable language to policy makers. Online mentorship, three-day intensive training by policy research experts and policy practitioners, and writing fellowship to them to published peer reviewed policy briefs on policy science interface is career milestones for the young researchers of this region.

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1. Introduction

1.1 Background:

Climate change and other related phenomena are growing concerns and among the most important issues for the sustainability of humankind. Such global-scale changes could threaten progress towards sustainable development in the developing world. As global change gains momentum within the global agenda, there is an increasing need for the development of policies that enable coherent, innovative and flexible global change responses. This need is particularly acute in developing countries, where the climate change impacts calls for novel policy approaches and regulatory environments that foster effective mitigation, adaptation and monitoring strategies (IDRC, 2012). Also, policymakers are continually searching for better ways to manage resources. Responding to these changes requires innovative policies that comprehend the realities of the modern world. Nowadays, although a wealth of scientific information is available, this information often does not reach to policymakers in formats that are easy to understand and implement. Also information often does not reach to policy makers at the right time or in the form in which it is needed (ADB, 2010). Better communication at the science-policy interface is urgently needed to enable policymakers and other stakeholders in developing countries to use up-to date scientific information to guide national and local development and poverty reduction policies and actions (BCAS, 2010). To fulfil these gaps between scientists and policy makers, science-policy dialogues and regional trainings are essential so that decision-makers can better integrate global change issues in development planning and poverty reduction measures (UNEP, 2010).

In the context of South Asia, it is one of the least experienced regions for research and development in the world. Penchant of younger generation's towards research has now been slightly increasing; but, the research does have very negligible policy impact. The researchers are not being able to express their findings in a way policy makers are looking for. Hence, this project intended to fill this gap between science and policy by building capacity of young researcher to write policy-briefs. The main objectives of the projects were:

- Capacity building of young researchers from south Asia to write policy briefs from their research outcomes; and
- Publication of a peer-reviewed policy briefs on policy-science interface in the field of global change research in South Asia

In this project, the young researchers from South Asia trained on policy brief writing from their global change research to understandable language to policy makers. Therefore, project helped to connect scientific knowledge of South Asian youth to policy making level by engaging young scientists to participate, share experiences, and learn on the challenges by interconnecting their research findings with policy making processes. The mentorship to the participants by experts from both policy making and scientific research levels also increased the knowledge of participants on the influences of scientific research on policy making. Therefore, project was successful in science-policy interfacing and dissemination activities.

2. Methodology

The proposed project has begun in July 2013 and end in June 2014. The following activities were carried out to achieve the objectives:

1. Formation of Steering committee:

At the initial phase of the project, a steering committee consisting of experts on policy research was formed. The steering committee helped the organizers to:

- Select of participants for the writeshop
- Design the curriculum for the entire writeshop
- provide online mentorship to the selected participants
- Review policy brief on science policy interface prepared by the participants

2. Announcement of application for participation in the writeshop.

An open announcement was circulated in South Asia for application to the policy brief 'writeshop'. Applicants were asked to provide a clearly written abstract that summarizes their research and how it could affect policy.

3. Selection of participants for writeshop

From the received applications, 27 early career researchers from south Asia were selected on the basis of policy relevance and option of their research. Participants were selected by the steering committee.

4. Online mentorship

Experts on policy research provided online mentorship to the selected participants to help them write policy briefs from their research. Each participant submitted the policy brief incorporating the feedback received from mentors to the organizer before participating on the 'writeshop' at Kathmandu.

5. Policy Brief writeshop:

Three-day policy brief 'writeshop' for the selected participants was organized in Kathmandu on 1-3 May 2014. The 'writeshop' provided a forum to the participant to get knowledge on writing policy-related documents from the outcomes of their research. Experts and mentors trained the participants by knowledge sharing and on-hand exercises.

6. Policy Forum

A policy forum was organized in an evening of first day of the write-shop. Participants interacted with the policy makers and experts of the region. This forum enhanced the network among the practitioners and beginners in policy issues. Experts from variety of fields were attended the workshop .

7. Policy fellowships

After the completion of the 'writeshop', twelve participants were selected for a fellowship to continue the process of writing effective policy briefs from their research for the publication.

8. Publication of peer-reviewed policy briefs on science-policy interface

A peer-reviewed policy briefs written by participants were be published and circulated widely.

3. Results & Discussion

3.1 Selection of Participants and Online Mentorship:

Twenty seven participants were selected from six south Asian countries on the basis of their actual involvement in the global change research and their potential policy implications in South Asia. Mentors provided online mentorship to the selected participants to write policy briefs from their research. Each participant submitted the policy brief on provided guideline incorporating the feedback received from mentors to the organizer before participating on the 'writeshop' in Kathmandu.

Online mentorship became very much effective to the participant to strengthen their policy brief.

3.2 Policy Brief Writeshop

A three day policy brief 'writeshop' was held in Kathmandu from May 1 to 3. The 'writeshop' provided a good opportunity to the participants to produce quality policy briefs under the direct supervision of experts of similar field. The details of the each session of the programs were as below:

Day I

A. Opening Session

Opening session was conducted on the chairmanship of project leader Mr. Khem Raj Dahal. In the opening session, special guest, Dr. Akio Takemoto, Director of APN Secretariat expressed his gratitude to join in the meeting and extended his wishes for the success of the programme. He remarked the importance of such type of programs to build capacity of young scientists in bridging scientific research with policy and also highlighted many activities of APN on science-policy linkage. He also explained how APN is supporting similar activities in its twenty two member countries.

Dr. Madan Lall Shrestha, Scientific Planning Group (SPG) member for APN, said that it was first of his participation in such type of workshop on policy-science linkage on his forty years of professional career. He explained how this program could become a good initiation to connect science with policy in south Asia region. Dr. Shrestha emphasized the importance of policy brief writing process as it helps to connect scientific knowledge of South Asian young researchers to policy making level. Dr. Shrestha, being involved in APN as a member of scientific community, also highlighted how APN has been involve in science and policy through its support to the scientific researches and capacity building programmes.

In the session, Dr. Sangam Shrestha - Associate Professor at AIT, Gregory Pierce Scientist at CCB elaborated the importance of policy brief and its implementation. The opening session was commenced with welcome speech and program highlight by Er. Sudeep Hada, Director of SEN; and concluded with vote of thanks to the guests, participants, collaborators and the supporters by session-chair and the project leader associate professor Mr. Khemraj Dahal.

B. Technical Session

First technical session of the writeshop was conducted by policy export: Dr. Hari Dhungana. On his presentation he explained how to identify the policy needs for the country andsociety, context of science-policy link in south Asia, structuring policy briefs and key issues, and locating research problem in the policy environment. During this discussion he also highlighted the different components of the policy brief and significant of different components. He also provided technical framework for writing the policy briefs to the participants.

This session provided the technical knowledge to the participants to select the policy issues and components of good policy briefs.

Second technical session was conducted by Dr. Naya Sharma. He provided procedure of making policy brief from the scientific research. He presented four different case studies on how he and his team prepared policy recommendation from their research outcomes. This session provided few clear examples to the participants on what stages taken consider into mind to produce policy brief throughout total period of research.

In third technical session, Dr. Hari Dhungana presented more detail about the different components of typical policy briefs. Dr. Dhungana provided all the possible frames of writing policy brief. He also stressed about the ethics of researcher.

In this session participants got an in-depth knowledge on the different components of policy briefs.

After the third technical session, Mr. Jeeban Panthi from SEN assisted to form five different thematic groups of participants for group work. The group were formed based on the participant's research aspects. Each group contains 5-7 members and one thematic mentor. Details of the groups are provided on Annex V. At the end of this technical session participants were given task to review their policy brief and make consistent with the specific format which they learned on the whole day.

C. Policy Forum

Policy forum was organized in an evening of first day during the write-shop. The policy forum attracted more than sixty participants. The participants were scientists, policy makers, students and journalists from different aspects. The main objective of the forum was to discuss about the regional policy need and to identify the gap between science and policy and also to enhance the research and development which is least practiced in the South Asian region. The forum was moderate by Er. Mahendra Bahadur Gurung, president Nepal Engineers Associations and former Joint Sectary, Ministry of Irrigation, Government of Nepal.

Speaking as a panelist, Dr. Dinesh Chandra Devkota, Former Vice Chair of National Planning commission (NPC), Government of Nepal highlighted the uncertainty of the research findings and pointed out the need to redefine linkages between science and policies. He emphasized that the previous success and failure stories should be bridged to research findings in the upcoming policies.

Mr. Batu Krishna Upreti, Chair of the Least Development Country (LDC) Expert Group and Former Joint Secretary at Ministry of Science, Technology and Environment, Government of Nepal, shared his experience about how the Climate Change Policy 2011 was formulated and approved. He clearly stressed that there were lots of papers that they found during the formulation of the policy but those technical papers were not understood clearly by the policy makers like them. Therefore, policy makers should be provided with the research findings which could be practical and applicable for

them. Mr. Upreti asked the scientists to provide a simple key message rather than a technical papers and reports.

In the panel discussion, Mr. Purushottam Ghimire, Joint Secretary-National Planning Commission (NPC)/Government of Nepal shared that policy making and implementation were two different aspects in South Asia. Some policies were contradictory which need monitoring and evaluation before implementation. Lack of acts, rules and regulations were also primary causes for policy failure in the region.

Dr. Bimala Devkota, Senior Scientific Officer at Nepal Academy of Science and Technology (NAST) urged to understand the grass-root communities before drafting policies as people should be in the center of science and policy. She also highlighted the need of collaborative policies to avoid conflicts.

Ms. Shabnam Siwakoti from Department of Agriculture, Government of Nepal, shared her experiences during her involvement in preparation of agriculture and irrigation strategies. She highlighted the issue of data inconsistency in context of south Asia. “Unless there is sufficient data, we cannot expect policy makers to make a policy fruitful for the targeted beneficiaries”, said Ms. Siwakoti.

Dr. Bhanu Neupane from United Nations Education Scientific and Cultural Organization (UNESCO) said that policy makers and scientists should have chicken and egg relationship. Policies were not always right so we should be repetitive and learn from past mistakes. He suggested that policies should follow alphabet soup: Advocacy, Bridging, Collaboration, Dissemination, Efficiency and Funding were the six factors that the policy makers should think before drafting any policy.

During policy forum, participants of the write-shop got chance to interact with the policy makers and experts and got knowledge on policy perspective towards the existing researches and future planning. The forum also enhanced the network among the practitioners and beginners in policy issues and experts from variety of fields.

Day 2

Second day was started with the group work. Each member of the group submitted their preliminary work based on guideline provided on the day I to their respective mentor. Based on the suggestions and feedbacks from mentor all participants refined their policy briefs and made presentation of the same to share among other participants. Title and abstract of presentation are presented below:

Arpita Das

Living with the politics of floods: Communities and flood management in Assam.

Riverine floods and erosion have emerged as major challenges for the flood prone areas of the Brahmaputra valley. In the aftermath of the 1950 earthquake in Assam in the north eastern part of India, the geomorphology of the river basin changed. This resulted in changes in the fluvial nature of rivers. The newly independent Indian nation did not take these changes into consideration while designing their flood management strategies. As a result of top down technological interventions such as embankments, the riverine flow was further curbed. Sixty years of such programmes aggravated the problem of riverine floods leading to erosion. Unlike flood waters which recede, riverine erosion washes away land. The resultant landlessness has severe consequences for agricultural communities. Communities in the Brahmaputra valley associate land with income and

identity. Ethnic communities derive pride and a sense of belonging from the lands they have occupied for centuries. Erosion induced landlessness thus leads to social, economic and political deprivation. This paper draws from ethnographic work carried out in Dhemaji with members of the Mising community who are a riverine community. The Misings are the second largest indigenous community in Assam. A majority of the population is settled on the northern banks of the Brahmaputra though there are significant pockets on the southern bank as well. The continued non addressal of flood related grievances such as unending landlessness by the governments in Delhi and the state capital of Guwahati, has led to despair and unrest in the community. The State controlled flood management strategies fail to consider the unique needs of the geography and the polity. This paper looks at dialectics in the relationship between communities and the State in the background of riverine floods and erosion. It underscores the importance between social justice, environmental governance and social application of scientific knowledge.

Arun Prasad Bhattarai

Organic Farming -Needs and Importance in Nepal

Organic farming is an agricultural practice where crops, vegetables and meat are grown without using chemical fertilizers. They are the sources of safe and nutritional food. Using, exposing to chemical fertilizers and using products grown chemically have immediate impacts like eye tearing, irritation, headache, disturbances, depressions, throat pain, cough, respiratory failure, cardiac arrhythmias, nausea, vomiting and acute poisoning etc. and long term impacts like increased risk of cancer, neurological impairment, developmental effects, reproductive effects, organ damage and intrusion with the human system are some of the notable impacts in human health. Besides impacts on human health environmental problems like soil degradation, air pollution, water pollution could cause huge damage in human civilization. Use of chemical fertilizers in Nepal is also accelerating. Nepalese consumers are compelled to take hollow food. In this dark scenario, study on the possible alternatives for chemical farming and its sustainability in Nepal has been done. Willingness to pay more by consumer for safe food, their needs and desire for nutritional food have been accessed and are compared with monetary value**.**

Om Katel

Use of Forest Resources by Residents of Jigme Singye Wangchuck National Park, Bhutan: Practices and Perceptions in a Context of Constraints

This paper examines the use of forest resources by local residents in Jigme Singye Wangchuck National Park, Bhutan. It also inquiries into local residents' knowledge and perceptions of park management interventions. The data were collected through a questionnaire survey, group discussions, and observations. The results show that local people depend on forest resources for their livelihoods, and that their knowledge and perceptions of the park and of park management are influenced mainly by constraints on their access to forest resources, and by benefits and incentives obtained from the park administration through socioeconomic development.

Pathmenathan Sivashankar

An Economic Analysis of Jatropha Biodiesel in Sri Lanka

There has been an increasing trend in investments in renewable energy sources in the recent years. Sri Lanka too is actively looking for alternatives to reduce the heavy dependence on fossil fuels and to achieve energy security. Given this context, this study assesses the economic and financial feasibility of Jatropha cultivation and production in Sri Lanka under the prevailing policy regime. The nominal protection coefficient and effective protection coefficients were employed to gauge the level of protection for biodiesel production using Jatropha in Sri Lanka. The cost benefit analysis was performed to assess the feasibility of Jatropha biodiesel production in Sri Lanka. The conventional measures like NPV, BCR, and IRR were used in financial and economic terms. Nominal Protection Rate (NPR) was calculated by dividing the local Jatropha bio-diesel price by the border price of bio-diesel. The NPR for biodiesel implies that nearly 47% of protection at local market level. Effective Protection Rate (EPR) for seed production is 90%, while it is for oil extraction and biodiesel processing is 128%. Implication of this is that the producers will be protected and they will receive 47% greater than what they would have received under free market conditions. Except for the benchmark situation, all other considered scenarios produce a favourable NPV, BCR and IRR for Jatropha biodiesel production

Vandana Tomar

Environmental consequences of Traffic and its Impact on climate Using Geospatial Technology
Modern transportation is an indispensable ingredient for development, allowing the pressure group of labour, supplies and goods, and enabling general public to access key resources and services. Climate change is a most important threat to sustainable development in any developing or developed country. Urban air pollution is on the rise, due to rapid economic and inhabitants growth and an increase in motorization. Modern transport is fundamental for improvement, allowing the movement of goods and enabling general public to access key resources and services. Travel today is relatively faster and people across the world are travelling more than ever before. Its stipulate regarding forecast is an indispensable part of transportation development in order to evaluate future needs of an urban area. Over increasing traffic concentration posed continued threat to ambient air quality and responsible for producing agents of physical condition hazards. Geospatial technology provides the smartest approach to resolve these inconvenience as it can cover a large area in a fraction of time. The research work focuses on the recognition of traffic intensities and noise level considered at particular traffic sites in the Varanasi, Uttar Pradesh, India. Noise levels recorded in the city, are much higher than the permissible level and are likely to causes associated health and psychological illnesses to nearby inhabitant.

Tanzima Shahreen

Building resilient community through behavioral modification: from the perspective of Bangladesh

Though it is granted that the poverty, high population density, ignorance, gender sensitivity etc are the major causes of suffering of the people of Bangladesh, a deep thought will reveal that the secondary causes like cyclone and extreme flood, river bank erosion, salinity intrusion i.e. natural disasters especially in the southern part of Bangladesh are the culprit behind human sufferings. But what can be done when technology with physical investment is not quite feasible for a developing

country like Bangladesh to outdo those natural disasters? The only hope is the sharing of knowledge to build a culture of learning and life for dignity & identity by awareness building for cyclone and other natural disasters through campaign, painting competition, drama, songs, monthly poster preparation, mock drill on disaster to increase the capacity of a community as preparedness effort. This paper will give a brief idea on how awareness raising on early warning and household preparedness can reduce the risk of disaster and make it easier to manage the disaster. In addition this paper will assess the present initiatives of community based disaster management in Bangladesh and its future need.

Sabina Lamichhane

Impact of Forest Based Micro-enterprises on Plant Diversity and Rural Livelihoods

As one of the least developed and most isolated district of Nepal, Humla has been identified as particularly exposed to severe and rapid climate change. As a land with 23 percent of rangeland but only 1 percent of arable land, Livestock keeping an indispensable pursuit for Humli's livelihood having greater economic significance. However, due to increased temperature which is proving dangerous to livestock, there are several high numbers of recent deaths of cattle, sheep and goats. In short, the climatic changes are severely impacting every aspect of the traditional livelihoods of these people. Therefore, there is a dire need to study on livestock's disease & impact on farmer's well-being to formulate local adaptation plan of action based on the findings. The finding will be milestone is catalyzing process that foster resilience and adaptation in case of farmers and livestock.

Muhammad Abdur Rahaman

Community innovations in climate resilient coastal agricultural livelihood options in Bangladesh

Agriculture plays a dominant role in supporting livelihoods in Bangladesh. Over 30% of the net available cultivable land of Bangladesh is located in the coastal districts. Coastal agriculture is being seriously affected by different levels of vulnerabilities caused by integrated effects of soil salinity, water salinity, SLR, tidal surge, cyclone. In different AEZs of coastal belt, farmers' innovated community based climate resilient agricultural livelihood options through indigenous knowledge. The study was conducted in two different AEZs of coastal Bangladesh which are most vulnerable due to climate change. The study aims to identify and document indigenous community based climate resilient agricultural livelihood options to ensure food security. The study data has collected from the study area through KII, FGD, in depth interview, experts' opinion, check list, aerial photography study, personal observation, PRA, HHS, soil and water salinity measurement. Published information on agricultural production system, soil condition, climatic indicators from different time frame collected from BMD, SRDI, BADC, DAE etc. Different indigenous climate resilient agricultural livelihood options were documented in different study area which is in practiced to adapt with climate change extreme events like salinity to ensure food security in the effective study area.

Ram Krshna Yadav

Spatial Distribution of an Invasive and Toxic Shrub, *Lantana camara* Across the Buffer Zone of Citwan National Park.

Invasion of Lantana (*Lantana camara L*.) in deciduous forest is capable of causing changes in micro sites (soil properties and species composition) in which they invade. As lantana is most conspicuous invader in the Chitwan National Park (CNP) deciduous forests, it is very important to analyze the effect of this invasive species on the composition of herbaceous layer and on soil properties. Habitats with different level of canopy cover will be studied in this research as it would be related with the lantana cover. The invasion of this weed may also affect soil properties and herbaceous species composition. This distribution pattern in CNP will help to manage this weed by resource manager. This study will be carried at six sites in buffer zone of CNP and fifteen quadrates (5mx5m) will be sampled randomly for vegetation and soil characteristics. Relationship between tree canopy cover, lantana cover and soil parameters will be analyzed. Correlation matrix and ANOVA (analysis of variance) for vegetation and soil parameters will be carried to find out relationship between canopy cover, lantana cover and soil parameters. The data analysis and generation of spatial distribution map will be carried out in GIS environment. Thus, this research will study lantana invasion which could modifies the spatial pattern of herbaceous species affecting the productivity and availability of fodder for livestock production.

Sajith Indika Wijesurya

Threats of surface water and deep water oil spills in the Indian Ocean, their effect on the sub-continent and a model to evaluate the effects.

South Asian region is bounded with tallest of mountain ranges at north and largest of oceans at south. The ocean boundary stretches for nearly 28,000 km for the South Asian regional countries. With the expansion of ports in Sri Lanka and South India it is likely that larger volumes of fossil fuel may be directed through the Indian Ocean channels in the future. Hence the region will be exposed to the possibility of a oil spill disaster. Based on the pollutant, Characteristics of the open sea of the Indian Ocean, Movement of sea water off the coast, the bottom topography of the sea and the possible weather patterns of the region the impact of such a disaster will vary. Apart from the oil spills from fossil fuel carrier vessels there are the likely scenarios of deep water oil and gas exploration in the regions waters. In such an occasion it is important to estimate the impact of a oil/gas spill disaster in the deep water as well as surface water within the coastal regions of South Asia. The fully island nations such as Sri Lanka and Maldives would be heavily impacted in above cases. Moreover significant damage would be done along the Indian coastline. The marine life, land adjoining to the coast and waterways penetrating in to the land will be harmed severely. Hence the current study explores a model that explains the impacts and behavior pattern of such disasters and adopts currently existing mathematical models to further explain each of scenarios. Moreover a possible mechanism to minimize the adversity of such occurrences is proposed.

Chandra Sekhar Bahinipati

Farm-level Adaptation to Climate Extremes in India: Do we need a separate Adaptation Policy?

While designing an adaptation policy for agriculture is a pertinent issue in India to mitigate potential impacts of climate extremes, it is found that farmers are already adapting to past extreme events, and the ability to adapt differs from farmer to farmer. Therefore, understanding of current adaptation decision-making process is imperative to design policies aimed at enhancing adaptation in the disaster prone regions of India. Using a survey data of 285 farm-households, the present study aims to identify determinants of mostly practiced farm-level adaptation measures to cyclone and/or flood. This study identifies cyclone and/ or flood sensitive options, and important determinants such as household size, per capita income, agricultural extension, access to Mahatma Gandhi National Rural Employment Guarantee Act, received crop loss compensation and informal credit. Since some of these could be addressed as part of the ongoing rural development programme, the present study suggests for non-necessity of formulating a separate adaptation policy. However, it is imperative to restructure the existing development based activities, so that climate change and climate extremes are considered as part of the programme.

Khuda Bakhsh

Determinants of Rural to Urban Migration and Consequent Impacts on Crop Productivity and Nutritional Status

The present study is designed to address the effect of natural resources and family and social networks on rural to urban migration and its impact on crop production in the Southern Punjab. Form this part of the province, district Muzafar Garh was selected. The reason for selecting this district was that Muazafar Garh was among the districts where rural to urban migration is common due to natural disasters, mainly floods and sometimes in search of job as the households possesses small land holdings. The data were gathered during 2011.Probability of migration was estimated employing logit model. According to our hypothesis quality of resources has impacted rural-urban migration positively. Results of the logit model showed that availability of natural resources was found negatively related with rural to urban migration. Social and family networks have a positive impact on rural-urban migration. Male above fifteen year age in the family, married male, non-farm income, quality of land and networks have a significant and positive impact on migration. Area owned and transport facilities are negatively with rural to urban migration. Migration also affected agriculture productivity. Migrant households growing cotton attained higher yield and consequently higher net returns than non-migrants. Similarly, migrant families also gained relatively higher wheat yield and net returns compared to their counterparts. Similarly nutritional status was found to be better for migrant households.

Bhojan Dhakal

Fodder production and livestock rearing in relation to climate change and possible adaptation measures in Manasalu Conservation Area Nepal.

A study was conducted to find out the production potential, nutrient composition, and the variability of the most commonly available fodder trees along with the varying altitude to help optimize the dry matter requirement during winter lean period. The study was carried out from March to June, 2012 in Lho and Prok Village Development Committee of Manaslu Conservation Area (MCA), located in Gorkha district of Nepal. The other objective of the research was to learn impact of climate change on livestock production linking it with feed availability. The study was conducted in two parts: social and biological. Accordingly, a households (HHs) survey was conducted to collect primary data from 70 HHs, focusing to the perception of respondents on impacts of climatic variability to the feeding management. The next part consisted of understanding yield potential and nutrient composition of the four most commonly available fodder trees (M. azedirach, M. alba, F. roxburghii, F. nemoralis), within two altitudes range: (1500-2000 masl and 2000-2500 masl) by using a RCB design in 2×4 factorial combination of treatments, each replicated four times. Results revealed that majority of the farmers perceived the change in climatic phenomenon more severely within the past five years. Farmers were using different adaptation technologies such as collection of forage from jungle, reducing unproductive animals, fodder trees utilization, and crop by product feeding at feed scarcity period. Ranking of the different fodder trees on the basis of indigenous knowledge and experiences revealed that F. roxburghii was the best preferred fodder trees species (index value 0.72) in terms overall preferability whereas M. azedirach had highest growth and productivity (index value 0.77), F. roxburghii had highest adoptability (index value 0.69) and palatability (index value 0.69) as well. Similarly, fresh yield and dry matter yield of the each fodder trees was significant ($P<0.01$) between the altitude and within species. Fodder trees yield analysis revealed that the highest dry matter (DM) yield (28 kg/tree) was obtained for F. roxburghii but that remained statistically similar ($P>0.05$) to the other treatment. On the other hand, most of the parameters: ether extract (EE), acid detergent lignin (ADL), acid detergent fibre (ADF), cell wall digestibility (CWD), relative digestibility (RD), digestible nutrient (TDN), and Calcium (Ca) among the treatments were highly significant ($P<0.01$). This indicates the scope of introducing productive and nutritive fodder trees species even at the high altitude to help reduce fodder scarcity problem during winter. The finding also revealed the scope of promoting all available local fodder trees species as crude protein content of these species were similar.

Mr. Parashuram Bhandari

Impact of Climate Change and Adaptation Strategies on Livestock in Gandaki River Basin

Climate change is expected to have serious environmental, economic, and social impacts on South Asia in particular, where rural farmers whose livelihoods depend on the use of natural resources are likely to bear the brunt of its adverse impacts. Climate change also effect on livestock. This research aim to study the trend of climate change especially temperature and precipitation in the Gandaki River Basin, Nepal, with its impacts and also to know the knowledge of peoples on climate change issues and adaptation measures adopted by them. From the study of the observed precipitation and

temperature data it was found that changes in annual precipitation from 1971 to 2000 with 2001 to 2009 in GRB has no specific increasing or decreasing trend but study of temperature of the same period shows increasing trend and increasing of temperature at upper level is more significant than lower altitude. From the detailed field survey it was found that most of the people in the study area were not familiar with the term climate change and most of the people perceive that summer temperature is increasing. It was also found that more than 50% people perceived decrease in monsoon rainfall than earlier. Adaptation measures adopted by most of the farmers in the study area are use of boras, green fodder in the roof of the shed to decrease temperature stress to their animal and gives hot kudo and fencing round the shed with fodder and bamboo in winter to decrease cold stress to their animal.

Pushpanjali Rimal

Impacts of Climate Change on Livelihood of Farmers and Adaptation of Community Based Biodiversity Management Practices for Its Resilience.

Climate change is a great problem as it has potential to influence agriculture, human health, biodiversity, and ecosystem structures as well. The study assessed the impact of climate change on livelihood of farming communities of Kachorwa, of Bara district, Nepal during August to September, 2013. A household survey consisting 78 households, analysis of meteorological data, interview with key informants, and group discussion was carried out for this purpose. The study was conducted to assess the impacts of climate change in livelihood of farming communities and identifying contribution of CBM practices for community resilience in healthy ecosystem, quality livelihood, food security and biodiversity conservation in the study site. Data analysis indicated that climate change is occurring at the study site. The maximum temperature was increased by 0.052°C per year and the minimum by 0.015°C per year. Also, the rate of increase of maximum temperature was higher than that of minimum temperature which shows that warmer days are increasing. Altered and erratic rainfall patterns were also recorded along with the decreasing trend of wind speed and increasing trend of RH was found, which also matched with response of most of the respondents. Most important hazards found in study area were: drought, insect pest infestation, mist/fog, heavy wind and hailstone. Along with those hazards, other problems faced by local people were: unemployment, health problems, erosion of local crops diversity, occurrence of new species of weeds, more incidences of new types of insect pests, lost in traits of special crops, decreased in quality and quantity of food and others. Most of the respondents felt that major causes of climate change were deforestation, more construction activities, and pollution with population growth. Regarding the role of CBM as adaptation measure to climate change, it was found that , different practices of CBM approaches has greatly supported the livelihood of farmers by exploring them to various new opportunities at community level. These practices strengthened the community capacity to cope with climate change impacts; as increment in diversity of grain crops and vegetables, availability of seeds, conservation of local landraces, improvement of ecosystem services, upliftment of financial status up to some extent, support to physical assets and promotion of social relations, linkage, knowledge and capacity as well. But, still there are some gaps, which are necessary to be fulfilled for its further effectiveness. Hence, promotion of CBM practices which addresses those gaps would be even more fruitful to cope with climate change for the local people.

Yugal Raj Bindari

Perceived Impacts of Climate Change and Adaptation Strategies Followed by Dairy Farmers.

A study was conducted to assess the impact of climate change as perceived by dairy cattle farmers along with the coping strategies followed in Manthali VDC of Ramechhap district. Sample size was 200 households and purposive sampling was done. Household survey and focused group discussion was done to the respondents to fill the questionnaire. Among 200 households, 184(92%) reported that climate is changing compared to past decades. Various impacts of change perceived by farmers include various health problems, fluctuating milk production, reduced availability and poor quality fodder, shortage of drinking water for livestock. Various coping strategy against harsh climate include keeping animals on shade, straw thatching of roof, providing animal more access to water; against emerging parasites and diseases includes regular vaccination, deworming and taking sick animals to veterinary service centers; against decreasing milk production includes adequate supply of vitamins and minerals. Climate is certainly changing and farmers have perceived the impact on their animals and livelihood. Moreover farmers have developed their own coping strategies against harsh effect of changing climate. No significant measure is being taken by the government to study the impact of climate change, vulnerability assessment and coping strategies against impact on livestock.

Dilli Bhattarai

Impacts of Climate Variability on Sheep Transhumance and Adaptation Practices to Increase the Resiliency

Livestock is not only an integral part of agriculture in Nepal, but also a major part of livelihood in many village areas. In Nepal, there is an enormous ruminant livestock population, which puts considerable pressure on land resources. Sheep and wool production plays an important role in the economic activities to some indigenous group of people in rural areas. It is reported that, with the changing climate and other socioeconomic problems, number of sheep in the hilly area is decreasing continuously. This study assessed problems in sheep herding in Gorkha and Lamjung Districts, and discussed the climate related problems to explore potential adaptation practices to climate change. Semi-structured questioner to sheep farmers and veterinarians working in the area, direct field observation for the herding practices, and fecal sample examination of the sheep from the observed herds were carried out for the study. Limited forage supply during winter, difficult in availability of grazing lands due to community forestry, increasing abortion cases in sheep with unknown reason, and increasing diseases prevalence with increasing types and frequency of diseases in June-August and November-January were reported to be the major problems. The farmers were unaware of the changing climate and also willing to give up the practices selling their sheep due to changing interest of new generation towards other opportunities. Climatic as well as non-climatic factors are affecting the sheep transhumance in the area and needs special attention and programmes to assist the farmers continue their practices.

Nabaraj Shrestha

Response of Birds in Performance and Egg Quality to the Seasonal Variability

All animals have a range of ambient environment temperature termed the thermo neutral zone, which is the range of temperatures that are conducive to health and performance. The increase in surrounding temperature resulting of climate change causes heat stress to every livestock and this research shall address the effect of such temperature increase in hyaline breeds of Chitwan district of Nepal. Reports from National Adaptation Plan of Action of Nepal suggests the temperature of the country shall escalate from 0.5 – 2°C, with a multi-model mean of 1.4°C, by the 2030s. It is estimated that with 20C rise in temperature of Nepal would decrease its meat and milk quality, hatchability of poultry and increases the possibility of disease in the livestock (G. Malla, 2008). On other hand poultry industry contributes around 4% to Nepal's GDP, with total investment of $334.26 million and is growing at 10% with chitwan as hub, supplying 60% of egg and 38% of meat demand. But exposed to 30°C, hen reacts with reduced feed intake resulting in smaller egg size and eventually lower egg production; Bird has to maintain the balance between heat production and heat loss, and so will reduce its feed consumption to reduce heat from metabolism. Although rise in temperature has been reported every year and complains regarding low egg production increasing, no correlating researches have been conducted in the area so far. The research has studied the feed conversion ratio, feed consumption, egg production, egg shape index, egg quality (egg weight, shell thickness, haugh unit, egg grading) and susceptibility to diseases with temperature increase in poultry fowl with an objective to understand impact of rise in temperature on hens by looking seasonal variation of temperature. Hundred fowls were reared in Deep Litter System (fifty in each season i.e. summer and winter) was observed during this research.

Renu Shakya

Impact of Climate Change on Trashumant Herder's Livestock Health

This study elucidates on impact of climate change on animals' health in mountainous region of Nepal and looks at impact of animal's morbidity and mortality on transhumant herder's well-being and overall flourishing capacity. This study employed pre-post sampling method. The outcomes were measured using Animal Health Questionnaire, Knowledge about Animal Disease and Treatment Method Questionnaire, Questionnaire of Perception of Climate Change and The Semi-structured Interview Guide to Access Herder's Well-being. The findings suggest that there is a significant increase in disease incidence when animals descent from colder region of upper grazing land to lower land during their transhumant movement. Herder's have perceived increase in summer and winter temperature for the last 6-10 years. They have perceived decreased ad more intense rainfall during monsoon. The snowfall has decreased drastically since the last 6-10 years. There are more frequent natural calamities. Moreover, they report fast ripening of summer and winter harvest than in the past. This perception data is consistent with scientific measurement and prediction for the region. In terms of animals' health, the life threatening disease 'Tibau' is still unknown disease in national and international health context. The herder's well-being is very much the function of yak's health compared to other livestock. Yak is an integral part of overall flourishing of herder's in Himalayan community of Humla. Further intervention on detailed study of 'Tibau' is to enhance resilience and well-being of herders is suggested.

Mr. Shatrughan Shah

Investigation of the effect of different level of tomato powder and tomato juice on growth performance, feed consumption, carcass traits of broiler (VennCobb500) in Chitwan, Nepal.

A study was conducted to investigate the effect of different level of tomato powder and tomato juice on growth performance, feed consumption, carcass traits of broiler (VennCobb500) in Chitwan, Nepal. The experiment was conducted during summer when the temperature reaches 36±3 0C. 560 day old broiler chicks were divided into seven treatments replicated four times in completely randomized design (CRD), each experimental unit consist of 20 broiler chicks. Treatment (T0) was not supplemented any tomato (Control group) whereas T1, T2, T3 was supplemented with 2%, 4%, 6% tomato powder in feed and T4, T5, T6 with 2%, 4%, 6% tomato juice in water. Feed intake was measured daily whereas body weight was measured weekly.. Analysis of variance showed significant ($p < 0.05$) response of tomato supplementation in the diet of broiler on final live weight (g), weekly live weight gain(g) and daily weight gain (g). Accordingly, maximum final weight (1889g) was recorded in T1 which not significantly different with T2, T3, T4 and T5. However, minimum final live weight (1718g) was recorded in T6 which was statistically similar with control group. Maximum daily feed consumption (91.93g) was noticed in control treatment group. However, minimum daily feed consumption (84.66g) was found in T1. The better feed conversion ratio (2.05) was found in T1. However, poor feed efficiency was found in treatment group which diet was treatment not supplemented with tomato powder i.e. T0 (control). The broiler diet supplemented with tomato powder did not show significant ($p > 0.05$) effect on carcass characteristics among the treatments i.e. % liver weight, % heart weight, % gizzard weight, % giblets weight and dressing percent. Results obtain from experimental trial was concluded that inclusion of tomato in the diet of broiler during heat stress condition can be improve feed efficiency without jeopardizing growth performance of broiler. The study still needs to be verified in farmers managed condition and at multi-location to recommend it for adoption by poultry growers.

Raihanul Fardaus Shahreen

Policy Study on Food Safety in Bangladesh

The current rules and regulations are outdated and fragmented. National standards and regulations have not been harmonized with Codex. The existing food control system in Bangladesh involves multiple ministries and agencies and compounded by overlapping of functions of the regulatory bodies with roles along the food chain. Absence of persuasive policies and civil penalty is the major problem in our present regulatory enforcement framework. The existing enforcement framework of the food safety regulation (FSR) of Bangladesh is not well-structured. Food inspection and enforcement activities in Bangladesh are not risk-based and do not cover the entire food chain from farm-to-table.

The assessment of the inspection and enforcement system in Bangladesh shows that there is a need for revitalizing the system. Lack of effective coordination among the concerned agencies is obstructing effective steps to ensure production and marketing of quality food and prevent adulteration in Bangladesh. To stop widespread adulteration of food items, recently, the government of Bangladesh has enacted “Safe Food Act, 2013 in the parliament that involves a

unified single agency to be responsible for national food control. The law has been created on the foundations of the Pure Food Ordinance 1959; the new law comes with a provision to award up to 14 years imprisonment or Tk 10 lakh in fine for using harmful chemicals or adulterating food items. The private sectors are not playing any significant role in food safety control in Bangladesh. Among others, the Consumer Association of Bangladesh (CAB), a non-government and non-profit voluntary organization playing role to create awareness among the consumers and promote consumer education related to food safety. The food safety experts called for the public and private sectors to work jointly to harmonize science-based standards and implement practices aligned with the Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP), Good Laboratory Practices (GLP) and HACCP system in food processing and food service and which are not yet fully established in Bangladesh. Standards on Fish Inspection and Quality Control (FIQC) have specific standards for food additives, heavy metals, insecticides, anti-bacterial agents including anti-biotic. Development of standards on livestock under Slaughterhouse and Meat Control Act is in progress. On the basis of the present study, the existing food safety laws in Bangladesh do not cover important areas of food safety and need urgent modernization. Specifically, control of food in Bangladesh is not based upon a consolidated food safety law, nor does it have comprehensive rules or standards designed to ensure food safety, consistent with modern Codex Standards, Guidelines, and Codes of Practices.

Rupa Rai

Landslide Hazard Zonation in Lamjung district of Nepal

The research used the data from the field and some other secondary data according to which map were prepared. The each map had different components whose importance in generating landslides was coded and a cumulative effect of all maps was shown. This type of research needs a very precise data and maps besides the field study is significant

Mr. Binay Sha Kanu

Study on Energy Consumption Pattern and GHGs Emission.

The major energy resources used in the study area were biomass based fuel, hydroelectricity and petroleum products. Biomass based fuel i.e., fuel wood was used in the dominant amount in spite of the problems associated with its use- including energy inefficiency, deforestation, increasing use of time for collection of fuel, indoor air pollution and deleterious health and environmental effects. Among the total sampled households (104, 7.6% of total households of the VDC), 734.6 ton/year of fuel wood, 50.6 MWh/ year of electricity, negligible amount of kerosene i.e. 3.248 KL/year was used. The total energy consumption among the sampled households was found as 12908.97 GJ/year with 19.09 GJ/person/year. The total GHGs emission was 1161749.03 kg CO2e/year with per capita share of 1718.56 kg CO2e/year/person.

Based on the findings, Octagonal Portable Rocket Stove was recommended as the best alternative energy technology for the study area. It will reduce 109.76 ton of CO2e/year if all 104 households adopt Octagonal Portable Rocket Stove. The Octagonal Portable Rocket Stove is reported to be 24% efficient saving fuel wood by 75.95 kg/month in the ICS installed house. There was a reduction of 43.54% in the amount of Total Suspended Particle (TSP) concentration compared to Traditional Cook

Stove (with efficiency of 12.6%) using houses resulting in better indoor air quality and decreased rate of respiratory diseases observed in women and children.

Sijinkumar

Unrvelling Late Quaternary Monsoon Changes From the Sediment of the Andaman Sea and Application of Past Knowledge on Future Planning and Policy Making.

The Andaman Sea, the least explored semi-enclosed marginal sea in the northern Indian Ocean appears to be a great repository of paleo-sedimentary archives for climate change. We have investigated and reconstructed climatic changes especially Indian Ocean Monsoon variability for the late Quaternary period (~ 55,000 years BP). The monsoonal climatic changes were inferred mainly by using the downcore variation of planktic foraminifera, pteropods, their isotopic signature and geochemistry. Variations in the monsoon precipitation determine the agriculture productivity, droughts and floods which impacts the economies of Asia. The past knowledge on monsoon variation is pre requisite for the future modelling. The Indian Ocean monsoon reconstructed from the Andaman Sea has shown weakest summer monsoon during mid Holocene which were also reported from the Arabian Sea. It is inferred that the intensification of summer monsoon at early stages of Bølling/Allerød (B/A) followed by slight weakening during YD and regained the strength and was highest during the last glacial-interglacial transition whereas winter monsoon has intensified during early LGM and continued up to late glacial, with a sudden weakening during B/A followed by an increase during YD. This adequate knowledge on past variation in Indian monsoon is very useful to model and predict future climate. The paleoclimate studies from the sediments of the Andaman Sea can greatly benefit the policy and decision makers in formulating and preparing policies regarding climate change.

In the second session of the day, each participant presented their policy brief in the power point format among all participants, mentors and resource persons. Each participant was provided five minutes times to present their policy brief. They were evaluated by five mentors on the basis of relevancy of the research subjects, implementable of the recommended policy, quality of data, writing quality, and presentation. During the presentation, each of them was provided with feedback and comments from all mentor, resources persons and participants. On the second half of the day, participants refined their policy brief incorporation the comments and feedback received during presentation.

Day 3

In day third all participant submitted the policy brief to their respective mentor on the basis of feedback and comments provided in the day II. Mentor provided final feedback individually to each participant for the quality of the policy brief. Also, each policy brief has been shared randomly with the participant of the workshop and asked for review. During the first half of the day participant prepared their final draft incorporating the feedback received during the writeshop.

After cross peer review each group worked for one of the best policy brief to present from their group. On second session each group present one selective policy brief.

A short panel discussion among the mentors was also organized in the day III. On the panel discussion mentors shared their view on challenge and opportunities on the policy brief written by

writeshop participants. Speaking in the session, all the members mentioned that they also learned a lot from the writeshop. This session was facilitated by Er. Sudeep Hada, Director of SEN.

Closing ceremony of the writeshop also conducted on the same day. In the closing ceremony, the participants were provided the certificate of appreciation and also name of twelve selected participation for fellowship were announced. Name of the selected participants for fellowship is presented on annex VI.

4.0 Conclusions

Policy Brief Writeshop was conducted with the aim of capacity building of young researchers from South Asia to write policy briefs from their research outcomes and publication of a peer-reviewed policy brief on policy-science interface in the field of global change in south Asia. After the successful completion of the project, we achieved the project's goal. The outcomes of the project can be summarized as below:

Capacity Building

Twenty-seven participants from the south Asia were well equipped with the knowledge of writing policy brief. Besides that, they got the learning opportunity from the direct supervision of mentor and friends. Writeshop also provided an opportunity to the participants on how to review the article written by their friends and colleagues (peer review). It helped them to think critically which ultimately helps them to make their own policy brief stronger and more refined.

Regional Network

Talented, energetic and highly enthusiastic youth from the region were selected for the writeshop. They got chance to learn from experts of the region on policy issues. Hence, they have formed a strong network for the possible future collaboration for the common problems related to global change. To strengthen and maintain the policy vibes among the participants, trainers, mentors and organizers, a google group (email group) was created which has been used to share the opportunities to young researchers in the region.

Further Learning opportunity:

In the writeshop, well renowned and experienced mentors were selected for each group. The mentors committed to help each participant in their research problems in future too through different means of communications e.g. google group. Hence, participants also have great opportunity to learn after the writeshop.

Publication of Policy Brief

Publication of selected policy brief aims to circulate widely for possible implementation of the recommended policy.

5.0 Future Directions

The organizers and collaborators agreed to scale up this type of program in future too and will seek new platforms for enhancing youth capacity on writing policy brief on various aspects via different activities that include workshops, forums, seminars, conferences, webinars, virtual discussions at national to global levels.

6. References

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7. Appendix

Annex I:

List of Selected Participants:

SN	Name	Gender	Country	Email
1	Arpita Das	Female	India	dasarpita.20@gmail.com
2	Arun Prasad Bhattarai	Male	Nepal	arunsansar@live.com
3	Bhojan Dhakal	Male	Nepal	nickbhojan@gmail.com
4	Binaya Sha Kanu	Male	Nepal	binaysah926@gmail.com
5	Chandra Sekhar Bahinipati	Male	India	chandrasekharbahinipati@gmail.com
6	Dilli Bhattarai	Male	Nepal	bhattarai.dilli@gmail.com
7	Ganga Prasad Yadav	Male	Nepal	ganga_love2005@yahoo.com
8	Khuda Bakhsh	Male	Pakistan	kbmultan@uaf.edu.pk
9	Muhammad Abdur Rahaman	Male	Bangladesh	rana_ygef@yahoo.com
10	Nabaraj Shrestha	Male	Nepal	newcreation_ns@yahoo.com
11	Nicky Shree Shrestha	Female	Nepal	sthanicky@gmail.com
12	Niranjan Bista	Male	Nepal	bistaniranjan@gmail.com
13	Om Katel	Male	Bhutan	katelom76@gmail.com
14	Parashuram Bhandari	Male	Nepal	parashu.bhandari@gmail.com
15	Pathmanathan Sivashankar	Male	Sri Lanka	sivashankar.p@hotmail.com
16	Pushpanjali Rimal	Female	Nepal	pushparimal@gmail.com
17	Raihanul Fardaus Shahreen	Female	Bangladesh	shanushahreen@yahoo.com
18	Renu Shakya	Female	Nepal	konchang.kencheng@gmail.com
19	Rupa Rai	Female	Nepal	ruparae@hotmail.com
20	Sabina Lamichhane	Female	Nepal	sabina_pkr@yahoo.com
21	Sajith Indika Wijesuriya	Male	Sri Lanka	sajith.mka@gmail.com
22	Shatrughan Shah	Male	Nepal	shshatrughan@gmail.com
23	Sidhi Bahadur Bajracharya	Male	Nepal	sidhi@hotmail.com
24	Sijinkumar	Male	India	sijingeo@gmail.com
25	Tanzima Shahreen	Female	Bangladesh	tanzima_03@yahoo.com
26	Vandana Tomar	Female	India	vandana7232@gmail.com
27	Yugal Raj Bindari	Male	Nepal	yugal_dipesh@yahoo.com

Annex II:

Member of the steering committee:

S.N	Name	Affiliation
1	Prof. Khemraj Dahal	Associate Professor, Tribhuvan University, Nepal
2	Dr. Sangam Shrestha	Asian Insitute of Technology Thailand
3	Prof Dr. K.P Sharma	Professor , Agriculture and forestry University, Nepal
4	Prof. Dr. P.K Jha	Professor , Tribhuvan University, Nepal
5	Dr. Shreeram Neopane	Policy Expert, The Small Earth Nepal
6	Dr. Hari Dhungana	Executive Director of Southasia Institute of Advanced Studies (SIAS) and member-secretary of Nepal Policy Research Network
7	Mr. G.K Chhopel	Chief Executive Officer Bhutan Statistical Services & Environmental Consultancy, Bhutan
8	Mr. Piyush Dahal	The Small Earth Nepal

Annex III:

Schedule of Policy Brief Writeshop

	Schedule: Policy brief writeshop		
	May I	**May II**	**May III**
Time	**Program agenda**		
0900-0930	Farmal Opening	Key note speech on regional policy needs	Peer review by Participnat
0930-1000		Exercise on Policy Brief	Work for finale Draft and Presentation of Group Work
1000-1030	Group Photo/ Getting to Know each other		
1030-1230	Session I: Structure of Policy Brief (Components)		
1230-1330	**Lunch**	**Lunch**	**Lunch**
1330-1430	Case studies (Research to Policy Brief)	Presentation by Participants(Feedback from mentors and other participants)	Panel Discussion among mentors
1430-1630	Guidelines: Getting Started		Next Step/Closing
1630-1700	Group Formation and assigning of mentors - Lead trainer and mentors		City Tour
1730-1900	Policy Forum		
1900-2100	Reception Dinner		

Detail Schedule:

Policy Brief Writeshop for Early Career Researchers in South Asia

1-3 May 2014, Kathmandu, Nepal

PROGRAMME AGENDA

Day I: 1 May 2014

Opening Session **MC: Nicky Shrestha**

Time	Activities
0900-0930	Registration and Hi tea
0930-0935	Chairperson and dignitaries call upon Dias Chairperson: Mr. Khemraj Dahal, Project Leader and Associate Professor, Tribhuvan University Special guest: Dr. Akio Takemoto, Director-Asia Pacific Network for Global Change Research (APN) Secretariat, Japan Dr. Madan Lall Shrestha, Scientific Planning Group (SPG) Member for APN and Advisor-The Small Earth Nepal (SEN) Dr. Sangam Shrestha, Assistant Professor, Asian Institute of Technology (AIT), Thailand Er. Sudeep Hada, Director, SEN Mr. Gregory Pierce, Senior Associate Scientist, Consortium for Capacity Building (CCB), University of Colorado, USA, PhD Candidate-Human Ecology, Lund University, Sweden

0935-0940	Welcome and program highlights: Er. Sudeep Hada
0940-0945	Remarks: Dr. Sangam Shrestha
0945-0950	Remarks: Mr. Gregory Pierce
0950-0955	Key remarks: Dr. Akio Takemoto
0955-1000	Key remarks: Dr. Madan Lall Shrestha
1000-1010	Chairperson's remarks and session closing
1010-1045	**Tea break**

Technical Session

1045-1230: Structure of Policy Brief and its Components - Dr. Hari Dhungana, Lead Trainer

1230-1330: Lunch Break

1330-1430: Sharing of Case studies - Research to Policy Brief - Dr. Naya Sharma, Forest Action Nepal

1430-1600: Guidelines- Getting Started for Policy Briefs- Dr. Hari Dhungana, Lead Trainer

1600-1615: Group formation and task assignments, Jeeban Panthi

1630-1700: FREE TIME

1700-1730: Travels to the Policy Forum (only for writeshop participants)

1730-1900: Policy Forum

Moderator: Er. Mahendra Bahadur Gurung, Immediate Past President, Nepal Engineer's Association (NEA)

Panel Discussion (5-7 Minutes each)

Panelists

1. Dr. Dinesh Chandra Devkota, Former Vice Chair, National Planning Commission (NPC)
2. Mr. Batu Krishna Upreti, Chair, LDC Expert Group
3. Mr. Purushottam Ghimire, National Planning Commission (NPC)/Govt. of Nepal
4. Dr. Bimala Devkota, Nepal Academy of Science and Technology (NAST)
5. Ms. Shabnam Siwakoti, Department of Agriculture
6. Dr. Bhanu Neupane, UNESCO

Open Discussion- Moderator (30 Minutes)

1900:2000- Cocktail Dinner

Day II: 2 May 2014

0900-0920: Key note speech-Dr. Jagadish Chandra Pokhrel, Former Vice Chair, National Planning Commission (NPC) (TBC)

0920-1230: Group work (mentor will lead each of the groups)

Mentors:

1. Dr. Shreeram Neopane - Livestock
2. Prof Dr. P K Jha, Tribhuvan University (TU)-Biodiversity and NRM
3. Dr. Sangam Shrestha, Asian Institute of Technology (AIT)-Hydro-climatic
4. Prof Dr. K P Sharma, Agriculture and Forestry University (AFU)- Agriculture
5. Mr. G. Karma Chhopel, BSSEC, Bhutan –Environment Management

1230-1330: Lunch

1330-1700: Presentation of Group Work- each of the participants will present their policy briefs (5 minutes each), followed by feedback from mentors, trainer and participants

Day III: 3 May 2014

0900-1030: Cross Peer review by participants

1030-1200: Group work (each group will select one policy brief to present and work for fine tuning)

1200:1230: Group work presentation (5 minutes each for presentation)

1230-1330: Lunch

1330-1415: Panel discussion among group mentors, Facilitator-Er. Sudeep Hada, Director, SEN

1415-1600: Next steps/Closing, Dr. Sangam Shrestha, Asian Institute of Technology (AIT)

1600-1900: City tour to Kathmandu (not to be guided)

Annex IV:

Panellist of Policy Forum

Moderator: Mahendra Bahadur Gurung, president Nepal Engineers Associations and former Joint Sectary, Ministry of Irrigation, Government of Nepal		
Panelist:		
S.N	**Name**	**Affiliation**
1	Dr. Dinesh Chandra Devkota	Former Vice Chair of National Planning commission (NPC), Government of Nepal
2	Mr. Batu Krishna Upreti	Chair of the Least Development Country (LDC) Expert Group and Former Joint Secretary at Ministry of Science, Technology and Environment, Government of Nepal
3	Mr. Purushottam Ghimire	Joint Secretary-National Planning Commission (NPC)/Government of Nepal
4	Dr. Bimala Devkota	Senior Scientific Officer at Nepal Academy of Science and Technology (NAST)
5	Ms. Shabnam Siwakoti	Department of Agriculture, Government of Nepal
6	Dr. Bhanu Neupane	United Nations Education Scientific and Cultural Organization (UNESCO)

Annex v:

Name List of the participants who received policy fellowship

SN	**Name of Participant**	**Country**
1	Arpita Das	INDIA
2	Arun Prasad Bhattarai	NEPAL
3	Chandra Sekhar Bahinipati	INDIA
4	Khuda Bakhsh	PAKISTAN
5	Muhammad Abdur Rahaman	BANGLADESH
6	Om Katel	BHUTAN
7	Pathmanathan Sivashankar	SRI LANKA
8	Ram Krishna Yadav	NEPAL
9	Sabina Lamichhane	NEPAL
10	Sajith Indika Wijesuriya	SRI LANKA
11	Tanzima Shahreen	BANGLADESH
12	Vandana Tomar	INDIA