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A REPORT

State Media Workshop on Climate Change Reporting

Shillong, June 28 – 30, 2017

IHCAP Indian Himalayas Climate Adaptation Programme

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Jointly organized by **Indian Himalayas Climate Adaptation Programme (IHCAP)** under
Swiss Agency for Development and Cooperation (SDC), Centre for Media Studies (CMS) and
Department of Science and Technology (NMSHE)

Venue: **The State Convention Centre, Shillong**

About Indian Himalaya Climate Adaptation Programme (IHCAP)
(Strengthening Capacity on Climate Science and Adaptation in the Indian Himalayas)

Indian Himalayas Climate Adaptation Programme (IHCAP) is a project under Global Programme Climate Change and Environment (GPCCE) of the Swiss Agency for Development and Cooperation (SDC). In India it is anchored under the Framework Agreement on Scientific and Technical Cooperation (2003) between the Government of India and Government of Switzerland and is being implemented as a bilateral cooperation programme with Department of Science & Technology. The IHCAP builds on capacity and knowledge enhancement related to three pillars—scientific and technical knowledge cooperation between Indian and Swiss scientific institutions; adaptation measures for vulnerable communities; and mainstreaming adaptation policies for improved action in the Indian Himalayan Region. www.ihcap.in

About Centre for Media Studies (CMS)
Established in 1991, CMS is a not-for-profit, multi-disciplinary development research and facilitative think-tank. It endeavors to work towards responsive governance and equitable development through research, advocacy and capacity building in social development, environment, communication, media, transparency and governance issues at local and national policy levels. Its flagship programme in environment sector is VATAVARAN, a leading international festival of environmental films.

Find more details at: www.cmsindia.org

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Summary

The twin issues of climate change and sustainable development have captured the attention of governments, policy makers, scientists, media and the general public in the past two decades. The interest has been sustained due to new scientific developments as well as climate change talks taking place under the umbrella of the United Nations. It has been recognized globally that media has a central role in not only in creating awareness about the causes and impacts of climate change, but also in spurring action by governments and motivating communities to take action.

While the media coverage on climate change and sustainable development has seen significant rise in the past two decades, several issues are inadequately addressed. Indian media has been covering climate change negotiations and other reports about Arctic meltdown or greenhouse gas emissions rise originating from Western news agencies and sources. It sometimes tends to ignore climate change science, policy and initiatives relating to mitigation and adaptation at the national and state levels. This is mainly due to lack of capacity among media persons at state and local levels, and lack of appreciation by newspaper editors. Journalists are not exposed to authentic sources of information, experts and other resources.

In order to address this gap, a three-day media sensitization workshop was organized by the Indian Himalayas Climate Adaptation Programme (IHCAP) of the Swiss Agency for Development and Cooperation (SDC), the Centre for Media Studies (CMS) and the Meghalaya Climate Change Centre (MCCC), Government of Meghalaya at Shillong, Meghalaya, from June 28 to 30, 2017. The primary idea behind this workshop was to bring scientists/ experts, international agencies, policy makers and media persons in Meghalaya together on the same platform for better understanding of various aspects of climate change and its impact in the context of Meghalaya and the IHR.

The inaugural session was addressed by senior officials of SDC, IHCAP, MCCC and CMS. Ms. Annu Anand, Head, CMS Advocacy, welcomed the participants on behalf of Indian Himalaya Climate Adaptation Programme (IHCAP) and Centre for Media Studies (CMS). She began her address by extending her heartiest thanks to Dr. Ampareen Lyngdoh, Minister Information and Technology, Government of Meghalaya, for having shown such deep interest in the issue of climate change and for finding time out of her busy schedule to inaugurate this media workshop. She appreciated the state government of Meghayala for their active participation into the workshop. “CMS Media Lab has been monitoring media coverage of environmental issues during prime time on television and front pages of national dailies for the past more than a decade. Continuous media monitoring has shown a gradual increase in coverage of environmental issues including climate change during this period, as a result of increased awareness on these issues. However, she said, there a huge scope in terms of quantity and quality of coverage on climate change and sustainable development”, she noted.

Mr. Dinesh C Sharma, senior science journalist, firstly pointed out the important role of media (print, electronic and digital) as far as reaching out to the general public on the issue of climate change is concerned. It is only the media which has the responsibility to convey the important findings of numerous scientific studies to the public in layman terms. He also stressed upon the existing knowledge gap between scientists, policy makers and the media. This gap can be bridged only through such capacity building workshops and by ensuring efficient flow of information.

Dr. Subhash Ashutosh, Nodal Officer, Meghalaya Climate Change Centre, Government of Meghalaya, gave an overview about the various climate change programmes that the state government has identified and initiated. He talked about the various sectors vulnerable to climate change and touched upon the three important studies that the department has brought up in collaboration with CII, IIT Gandhinagar and the Indian Institute of Science (IISc), Bangalore.

Shri. R. M Mishra, IAS, Development Commissioner, Government of Meghalaya, stressed upon the seriousness of the entire climate change debate and the urgent need for all stakeholders to act upon it. While Dr. Ampareen Lyngoh, Minister, Information and Technology, Government of Meghalaya, highlighted the significant role of media in the entire process of spreading disseminating information related to climate change to the masses. Given their important role, the media should give significant attention to the complex issue of climate change, she noted.

The inauguration was followed by technical session on ‘Climate Science, Policy and Media’ which focused on recent science and policy measures on climate change, challenges in reporting science of climate change and mechanism for enhancing quality coverage on climate change impacts. On second day of the workshop, the journalists were taken for day long field visit to Mawphalng sacred grove site. The media persons through this field exploration activity were able to discuss with the indigenous community members on how they have been preserving such community forests through the use of traditional knowledge, thereby contributing to the process of carbon sequestration. The third day session dealt with understanding the gaps in reporting on climate change and how different stakeholders can contribute in minimizing the knowledge gap and ensure efficient flow of information at all levels.

Inaugural Session, June 28, 2017

The fourth media workshop on Climate Change, jointly organized by the Centre for Media Studies (CMS), Department of Science Technology and Climate Change (DST & CC), Indian Himalayas Climate Adaptation Programme (IHCAP) of Swiss Agency for Development and Corporation (SDC) and the Meghalaya Climate Change Centre (MCCC), began with a formal inaugural session at the State Convention Centre.

The ceremony began with the lighting of ceremonial lamp by Dr. M. Ampareen Lyngdoh, Minister, Information Technology Department etc., Government of Meghalaya; Dr. Subhash Ashutosh, Nodal Officer, MCCC; Shri. R.M Mishra, IAS, Development Commissioner, Government of Meghalaya; Ms. Shimpy Khurana, Communication Officer, IHCAP; Mr. Dinesh C Sharma, Senior Science Journalist; and Ms. Annu Anand, Head, CMS Advocacy.

The inaugural ceremony began with a welcome note by Ms. Annu Anand, Head, CMS Advocacy, on behalf of the IHCAP and Centre for Media Studies (CMS). She thanked the honorable Chief Guest, Dr. Ampareen Lyngdoh, other dignitaries and the participants for finding time from their busy schedule for the important issue of Climate Change. She briefed the audience about how the Centre for Media Studies have been studying media and its impact on policies, perceptions and practices on crucial development issues over the last 25 years. She further explained, how media monitoring has taken different forms such as research, policy, input, advocacy, seminar, publications and how CMS's initiative of VATAVARAN has become Asia's largest and amongst the top five green festivals in the world. Through the medium of films and documentaries, CMS reaches out to students, policy makers, youth, and media to help them have a deeper understanding of the various environmental issues. After the welcome address, Ms. Ampareen Lyngdoh, Honorable Minister, Information and Technology, Government of Meghalaya; Dr. Shubhash Ashutosh, Nodal officer, MCCC; Mr. Dinesh C Sharma, senior science journalist released the three latest study reports titled, a) Impact of climate change on Forests and Bio Diversity in Meghalaya, b) Identification of climate vulnerability hot-spots in Meghalaya using high resolution climate projections and c) Meghalaya State Carbon Footprint Study. These studies have been conducted and compiled by Indian Institute of Science (IISc), IIT Gandhinagar and CII - Sohrabji Godrej Green Business Centre, Hyderabad, respectively.

On introduction to the Media Program on Climate Change, Mr. Dinesh C Sharma, senior science journalist, said that "this workshop is unique because there are a very few platforms where different stakeholders come together and talk on a complex subject like Climate Change". He pointed out that on the issue of climate change, there is a constant disconnect between the media and the scientist community which has to be addressed so that the journalists can stay updated about knowledge related to Climate Change, climate policy, adaptation initiatives etc.

Elaborating further, Ms. Shimpy Khurana, Communication Officer, IHCAP, explained the overall goal of IHCAP, which is to strengthen the resilience of vulnerable communities in the Himalayas and to enhance the capacities of research institutions, communities and decision-makers and connect their knowledge. She added, “Meghalaya’s participation at the national workshops of the Indian Himalayan States has been instrumental in identifying priorities in the region, and in giving a clear orientation regarding the way forward for facilitating adaptation to climate change”. In her address, she emphasized the fact that Himalayas are among the most vulnerable to climate change due to the likely impact of climate change on the Himalayan ecosystem. Hence, the prime objective of these media workshops is to encourage in depth reporting on climate change and the communities, she said. She also announced the release of a series of four science briefs, developed by IHCAP, on specific topics such as climate vulnerability and risk, flood risk and early warning systems, ecosystem-based adaptation, and mountain and lowland linkages.

Dr. Subhash Ashutosh, Nodal Officer, MCCC, pointed out that there has been an increase in the number of evidences resulting from the changing climate in the state of Meghalaya. Based on studies, there have been instances of the rainfall pattern changing – heavy rainfall over a shorter period of time; flash floods becoming a routine; many new diseases in horticulture which were not known earlier are emerging now. Given an increase in such episodes of extreme events, he noted that adaptation to Climate Change has become the main concern for the state. He further added that the role of the media is significant for disseminating information about Climate Change and adaptation initiatives. In reference to adaptation practices he said, “Forestation and tree planting is one of the main initiatives taken up by the Meghalaya government. The Mawphlong community has already earned 50 lakhs carbon credit. There are several other communities present in the state for which projects can be prepared for earning carbon credit.” On traditional knowledge, Dr. Ashutosh spoke about a perception based study, undertaken by the MCCC in which, the department had mapped traditional knowledge in districts and have tried to understand people’s perception on climate change.

Given the seriousness around the issue of climate change; Shri. R. M Mishra, IAS, Development Commissioner, Government of Meghalaya, stressed upon the need to act immediately and adapt. “If we do not consider the people, the prime owner of Climate Change, then nothing can be achieved. In this regard, the journalists and the scientists together will have to demystify the narrative of Climate Change for the public to understand it’s seriousness”, he added. In his address, he also appreciated the role of green volunteers who are the most concerned about environment and climate change without anything in return. He lastly highlighted that the Meghalaya Basin Development Authority (MBDA) has made some humble initiatives aimed at integrating knowledge on ecosystem and identifying the places where can we use this knowledge. The Chief Guest, Dr. Ampareen Lyngdoh, Minister, Information and Technology, Government of Meghalaya had also shown great concern towards the complex issue of Climate Change. She said, “The fact that we already feel the rising heat in the urban landscapes, we need to take actions to deal with this issue”. Climate change should be everybody’s concern including the media, which acts as a mediator between the scientific community and the public. She further highlighted that the government’s intervention to ban coal mining in Meghalaya has been a direct and urgent response to the ramifications caused by such mining activities on our ecosystem.

The inaugural session concluded here with Ms. Ritika Kapoor, Executive, Centre for Media Studies, extending her thanks to the Chief Guest, Dr. Amapreen Lygdoh for agreeing to inaugurate the media workshop. She further thanked Shri R.M. Mishra, IAS, Development Commissioner, Government of Meghalaya, Dr. Subhash Ashutosh, Nodal Officer, MCCC and Mr. Dinesh C Sharma, senior science journalist for rightly highlighting the urgent need for all of us to prioritize the issue of climate change and for the media to come up with more and more stories related to climate change, thereby, spreading awareness amongst the masses. The session ended with the participants dispersed for a tea break during which some of the participants interacted with our guests on the issues related to climate change reporting as discussed during the inaugural session.

Technical session – Climate Change in Meghalaya – An Overview

After the tea break, the participants reassembled for the first technical session. Mr. Dinesh C Sharma moderated the session and also initiated an ice breaker session wherein the participants were requested to introduce themselves and share their expectations from the workshop.

Prof. N H Ravindranath, Professor, Centre for Sustainable Technologies, Indian Institute of Science, in his presentation, noted that on one hand, the world population is growing at an unprecedented rate, as per UN report, almost two-thirds of land is subjected to irreversible degradation, scarcity of groundwater and on the other hand, there is climate change which is going to affect health, agriculture, amplify the issue of water crisis. He pressed on the fact that the mankind is going to face several environmental challenges in the coming days. As per one of the studies conducted by IISc, “three of the top ten most vulnerable districts in the north eastern region in terms of water vulnerability or agricultural vulnerability etc. belong to Meghalaya”, he noted.

On the precipitation patterns, Dr. Ravindranth highlighted that overall the rainfall is declining while there has been an increase in the occurrence of unseasonal and extreme rainfall, leading to destruction of crops that are ready for harvest in several parts of the country. Other studies also indicate a significantchange on the agricultural sector, showing a major decline in the yields of maize and rice at the global level, he added. During the month of June, a very critical time for sowing of crops, it has been observed that the rainfall during June- July – Aug period has been highly variable, experiencing delayes as well as early and extreme rainfalls. This is one of the biggest challenges faced by the farmers in India. In addition, there are various factors like availability of irrigation facility (during times of delayed rainfall) which further defines the adaptive capacity of these farmers to the changing climate.

As far as the impact of climate change on forests is concerned, it was earlier believed by scientists that the forests and species will not be affected a great deal by the changing climate but that is not visible as the rate of climate change is fast enough for the species to migrate. Another study conducted by IISc, shows the high possibility of significant changes in the species composition in forests situated in the north eastern region.

On the issue of global warming, he explained that “as per the Paris Agreement, we are to halt our global carbon emissions from burning of coal, natural gas, forests etc., so as to hold the global warming at 2□C and below, as a long term solution to deal with climate change.” However, he noted that this does not seem possible at all given that half the world including India is still developing. Lastly, he mentioned, another major challenge will be to see to what extent these global agreements (like the Paris Agreement or the Sustainable Development Goals) are operationalized at the state and the district levels.

Dr. Vimal Mishra, Assistant Professor, IIT – Gandhinagar, started by appreciating the state government of Meghalaya for being proactive in tackling climate change in this area. Dr. Mishra briefly explained that the most striking feature about climate change is the time it takes to increase the temperature or the concentration of GHG in the atmosphere has been rapid since past 60 years. He explained that knowing the actual impact of climate change on agriculture, public health, forest cover and biodiversity or water resources is very important but for that availability of sufficient data is an essential pre requisite. Moreover, the issue with the existing climatic models is that they are coarse and Meghalaya having a very uneven terrain is also another reason for developing high resolution projections. Given this, "the study named, 'Identification of climate vulnerability hot-spots in Meghalaya using high resolution climate projections', conducted by IIT- Gandhinagar was aimed at developing good quality, high resolution data sets for the state of Meghalaya which can be used to understand the past climate or how climate would change in the future based on the global climate projection models", he elaborated.

Further he added, understanding how good are the existing climatic models, understanding the 'observed climate', evaluating the changes in droughts/ floods based on the observed data, developing high resolution climate projections for future and finding out how the climate is going to change in Meghalaya in future, are some of the main objectives of this study. "To reach the final objective of future climate change projections, it is important to understand the present changes being witnessed in the state. The high resolution data sets developed, clearly showcase the increase in rainfall and extreme rainfall events since 1980s leading to floods", he said. For instance, the central region (West *Khasi* hills) which already receives high rainfall is projected to receive even higher rise in precipitation. Rainfall patterns and temperature scenarios were also observed in different districts of the state, which enables anyone to categorize districts on the basis of heavy/ low rainfall or high or low average mean temperature. The study also shows that, "number of hot nights have increased significantly in the state while there has been a striking decline in the number of cool days from 1980s onwards", Dr. Mishra highlighted.

After the lunch break, the participants gathered for the technical sessions followed by round of interaction with the scientists after each presentation.

Mr. Kiran Ananth, CII-Sohrabji Godrej Green Business Centre, Hyderabad, noted that while talking about SAPCC, state carbon footprint profile become the basis of discussion. "The fundamental idea behind the carbon footprint study conducted by CII in Meghalaya was to identify emission sources of each of the Greenhouse gases in the state, calculating how much is the emission and converting the gases other than carbon into carbon equivalent and seeing how much emissions have happened in the state", he added. In essence, the net carbon emissions have been calculated by deducting the amount of carbon sequestered from the existing carbon sinks from the gross carbon emission from different economic sectors and activities. "Based on this, the study found that the net emissions were about 2.96 million tons of carbon di-oxide emissions in the state in the year 2014-15, making the per capita emissions to be roughly around 1 ton of carbon di-oxide emission", Mr. Ananth noted. The study also shows transport sector is a major contribution to carbon emissions, possiblybecause Meghalaya a hilly state where road transportation is the only option available. One of the major sources of carbon emissions within the agricultural sector is the enteric fermentation i.e. livestock related emissions which is directly influenced by the amount of cattle holdings per citizen of the state.

Another surprising finding that Mr. Ananth shared was that the industry-related emissions have also been quite high (more than fifty percent of the total gross emissions) in Meghalaya. The biggest contributor to industry- related emissions are cement plants. The cement sector is one of the GHG emission intensive sectors. Around 0.8 kilogram of carbon di-oxide is emitted for every kilogram of cement produced. There has been a significant increase in the number of such plants in the state. Unlike the traditional way of cultivating rice, System of Rice Intensification (SRI) has been a prominent practice in many districts of Meghalaya, contributing to a significant reduction in the paddy cultivation related methane emissions.

On water resources, Prof. O P Singh, NEHU, noted that each year India receives sufficient water in the form of rainfall and snowfall but only a small proportion of it is actually usable for consumption. In addition, water availability across the country is dependent upon spatial and temporal distribution of precipitation i.e. water is not available in the same quantity. At the national level, study projections suggest that per capita availability of water will decrease while the requirement of water is going to increase given the constant rise in population level by 2050. With the changing climate leading to rise in temperature, reduced duration of rainfall, changing rainfall patterns, frequent occurrence of extreme events, the availability and quality of water will worsen further.

Reduced duration of rainfall in particular will increase chances of extreme events and will also lead to less groundwater recharge owing to increase in run-off. “Best way to conserve water is to conserve water in the watershed sites i.e. where all the water drains”, he said. He stressed on the idea of government taking several measures that includes enhancing efficiency of water so we can use and reuse water, increase intervention for improving vegetation cover, take measures to check fast runoff through afforestation, diversion of streams, ponds and wetlands, increase storage capacity and avoid water intensive agriculture in water scarce areas by using modern techniques of agriculture, rainwater harvesting etc., apart from managing the watershed areas through construction of check dams.

As a solution to the problem of climate change and adaptation, Prof B.K. Tiwari, Professor, NEHU, advocated the ideal way would be to go back to our traditional knowledge transmitted from one generation to another. He highlighted that until 2010, the IPCC did not give due importance to the concept of traditional knowledge, calling it a ‘grey literature’ something that is not peer-reviewed

scientific material. “Meghalaya is one of the richest state with respect to traditional knowledge wherein there are different types of forests such as village forests, group of village forests, sacred groves, forest gardens etc. which are being traditionally managed by the local communities”, he said.

For instance, the forest gardens are maintained for the purpose of preserving soil and vegetation on the steep slopes of mountains. Several economically valuable species are being conserved by the use of such traditional knowledge, while certain patches of forests are being maintained for selective felling and selling of less economically important trees against resources. Apart from forests, the communities have developed knowledge of using their land (resource) sustainably, based on years of experience. This involves creation of a separate forest areas meant for fuelwood extraction, a grassland area for the purpose of cattle grazing and cultivation, area for cash crop (broom grass) cultivation, followed by an area meant only for betel leaf/ nut cultivation.

The traditional knowledge and practices have been developed and are being used by communities over generations making it a best suited practice for Meghalaya, he explained. Prof. Tiwari stressed on the idea that given the significance of traditional knowledge and practices, various climate change adaptation strategies must be designed for the indigenous communities, who are heavily dependent on natural resources, after considering the existing traditional knowledge base.

After an elaborate discussion on the concept and importance of traditional knowledge, Dr. Rajiv Chaturvedi, Senior Researcher, Indian Institute of Science, gave an overview about his recent Climate Risk Assessment study, conducted for Meghalaya to understand overall vulnerability of the forest ecosystem to climate change. He broadly explained the process of a risk assessment study across the components of hazard assessment, vulnerability assessment and exposure assessment. In order to assess the overall risk, disturbance index, biomass index, canopy cover and most importantly, biological diversity index were assessed. "As per the maps generated out of the canopy cover and biomass index, Meghalaya seems to have more open forest than dense forests", he highlighted.

Dr. K K Sarma, Deputy Project Director, NER-DRR elaborated that disaster is an ultimate output, but even before disaster we can assess hazard which is nothing but 'potential' for damaging physical event, before hazard, vulnerability could be assessed which are essentially the conditions that increase the susceptibility to the impact of hazard and based on the vulnerability assessments, a risk map could be prepared. Put in simple terms, early warning systems are an integral component of the process of disaster management i.e. to know about 'when' and 'where' a particular event is going to happen. Dr. Sharma, emphasised, that public largely is unaware about various disaster management technologies or systems available or whom should they call first if an earthquake or any other disaster takes place etc. Therefore, there is a need to address this issue by implementing effective risk or emergency communication so as to minimize the communication gap between the experts and the public.

"A robust early warning system should ideally comprise four main elements -, risk analysis, how vulnerable we are (monitoring and predicting), disseminating information and response. Failure of any of these elements will lead to failure of the entire system", he noted. Satellite communication

is critical because when mobile networks or terrestrial communication system fail in the event of a disaster.In addition, Seasonal (including floods, forest fires and droughts) and event-based (landslides, earthquake and cyclone) monitoring are two kinds of monitoring services provided by the Decision support centre. Models like Weather Research and forecast (WRF) and Hydromet coupled model (HCM) are used after customizing the same for the local region to understand how much rainfall may occur based on which flood prone districts are identified. “In addition to early warning systems for different events, space technologies are increasingly becoming a useful tool to study and provide timely information on epidemics occurred as a result of various natural and manmade disasters”, he added.

Field visit, June 29, 2017

After detailed interaction with scientists and experts on various aspects of climate change and adaptation, the participants on the second day of the workshop got an opportunity to see some of the adaptation initiatives that are being taken at the grassroots level. As part of the field visit, the participants were taken to the Mawphalng sacred groves, one of the oldest sacred groves in the state of Meghalaya. Sacred groves or community forests, widespread in Meghalaya, are a vital component of the forest ecosystem. The indigenous clans and communities have religious sentiments attached with these patches of forests, making them inaccessible in terms of hunting or logging. It is a common belief among the community members that if anyone tries to intrude and harm the forest in any way will be punished by their gods and deities. According to the tribal community, it is to be considered a pure sin!

In an exhaustive and interactive session with Mr. Tambor Lyngdoh, secretary of the Umiam Mawphlang Welfare Society and a member of the Mawphlang Lyngdoh clan, explained how the villagers are directly dependent on the resources in terms of fuelwood, medicines etc. supplied by these forests. Given their dependence and also religious values attached with these forests, villagers act as a local guardian to these sacred groves. “Coming together as a community to protect these patches of forest lands is also a sign of sovereignty, unity shown towards the protection of their mother, the sacred grove”, he said.

He further explained that every *hima* (village) has its own set of sacred groves wherein only the people belonging to the *lyngdoh* (priest) clan are allowed to perform rituals and sacrifices inside the sacred groves. “The deities here are in the form of ‘leopards’ and ‘snakes’, the leopard, he said are there to protect the villagers in times of danger while the snakes apprehend the people when they do something wrong”, he elaborated. Inside the grove, the participants could see the stone tables

and chairs and monolithics which to guide the future generations of the tribal community about the various rituals performed within the grove by their ancestors. Mr. Lyngdoh's rich knowledge about various floral species like *Michelia champaca* (an expensive wood carving species after teak), Taxus baccata (a medicinal tree species used for curing lung and breast cancer) found in the grove was enlightening for the media persons.

Apart from having religious value, these sacred groves are considered important carbon sinks and hence are of great value to various stakeholders, including ecologists, scientists, policy makers and other multi-lateral agencies. In addition, there are some depleted grove areas which have now turned into open forests owing to an increase in anthropogenic activities in the regions. By regenerating and maintaining these open forests, the Mawphlawng *khasi* community is earning carbon credits under the Reducing Emissions from Deforestation and forest Degradation (REDD+), an international initiative started by the UN. The money that received under the REDD plus, is getting utilized for different purposes at the community level such as for community development, for installing LPG connections (encouraging villagers to move away from fuelwood, thereby reducing dependence on forest products), rice cookers, smokeless *chullahs* promoting young entrepreneurship, or for helping the farmers or for helping the BPL families under the Pradhan Mantri Ujjwala Yojana scheme etc.

After a long interactive walk inside the sacred grove, the participants went to the Umiam Mawphlang Welfare Society office nearby to gather for further discussion over a cup of tea. During the discussion session, Mr. Lyngdoh explained the timeline of the conservation project that had started in the year 2004 in the area with the support of Mawphlang community. Mawphlang rules for natural resource management (NRM) has been appreciated by many other organizations and hence studies on NRM have followed. In 2009, the project itself received an award and the community people were also awarded a particular sum of money. In 2011, an Asia REDD working group (ARWG) was created, the first meeting of which was held at the TERI University in Delhi. "Before a REDD plus project begins, drivers of deforestation are identified and based on which it was observed that the forest fires are the biggest contributor to forest degradation in Mawphlang", he noted. Some primary sources of leakages including forest fires, fuelwood extraction, fodder or timber extraction are considered as leakages during calculation of carbon stock, which accounts to around 20% - 30% approx. of the total carbon stock.

The session ended with Mr. Dinesh C Sharma, Senior Science journalist concluding and highlighting the main idea behind this field visit and the interaction session, which was to give the media participants an opportunity to understand this pioneering project and to disseminate the knowledge further for others to follow.

Building bridges among media, scientists and civil society – Media Roundtable

On the last and concluding day of the media workshop, editors, media experts, representatives from the Meghalaya state government (Climate Change cell), and all media participants gathered at the State convention Centre for an interactive media roundtable session. The idea was to try and bridge the knowledge gap between different stakeholders for efficient reporting on climate change.

Mr. Dinesh C Sharma, Senior Science Journalist welcomed the panel including Ms. Patricia Mukhim, editor, Shillong Times; Dr. Subhash Ashutosh, Nodal Officer, Meghalaya Climate Change Centre, Government of Meghalaya and Mr. Sanat Chakaborty, editor, Grassroot Option.

Mr. Sharma began the session by giving an opening remark about what is the fundamental idea behind this media roundtable session on the complex subject of climate change. He noted that "there is a serious need for the media to look at the topic of climate change as a process and not cover it as an event ". Already there exists a section of the society which is in constant denial of the issue of climate change; they say that it's a sheer myth and that nobody has to worry about it. So, the media has to engage into meaningful and sensible reporting as far as climate change is concerned.

"There are two major problems associated with CC reporting – wrong attribution and sensationalisation. Often extreme events like the *Kedarnath* floods occur, they are immediately attributed to climate change while such direct link between the two may niot exist", he added. He mentioned that the media is constantly facing the problem of identifying stories related to climate change, thereby aggravating the problem of wrong attribution. In order to deal with this problem, he suggested that journalists will have to understand several nuances and linkages to see if an event has taken place as a result of climate change or not. Mr. Sharma explained this by giving an example of a story titled, "Strawberry productions in Meghalaya are effected by climate change", in which the reporter has talked about various factors like horticulture, livelihood, erratic rainfall etc. However, in support of his argument, the reporter should have added data and expert quotes associated with these factors, or could have quoted some study or some expert opinion or may be could have talked to some farmer. A holistic story like that would have done justice to this interdisciplinary subject of climate change.

Further he discussed few reporting ideas like an analysis in which the SAPCC of different states are compared and the gaps or learning are highlighted or the actions mentioned in the SAPCC can be critically questioned by the media as the SAPCC is not cast in stone. Another issue as highlighted by Mr. Sharma, was the practice of extrapolating data that hampers the quality of reporting. In his concluding remarks, he mentioned that there also exists a considerable knowledge gap between

the experts and the media. All experts conducting studies in the state of Meghalaya may not be all located settled in the state itself. So, journalists have to identify these experts from all over the country and start developing a rapport with them. This will help the media in contacting them for an expert comment fortheir stories. In addition, government officials, academicians and scientists should also be open to having a discussion with the media on various aspects of climate change or may be for an ongoing study.

Agreeing with the fact related to the existing knowledge gap between media and scientists, Ms. Patricia Mukhim, editor, Shillong Times, noted that there needs to be more such convergence events like this media roundtable, which had never really happened before in the state. “It is important for the scientists to be able to communicate their findings in a language that the journalists (who are not experts of any particular field) is able to understand and process the knowledge received”, she said. On behalf of the media, she shared the challenges that media faces by stressing on the fact that for some reason the government is defensive on the issue of climate change. She finds such kind of a behavior surprising because climate change is going to affect everybody including government officials. She noted that there is a huge lack in the number of Non-Government Organization (NGO) or Civil Society Organizations (CSO).

She highlighted that based on this study conducted by Dr. Govind Kelkar, there has been a significant change in the overall cropping pattern including a shift from indigenous crops to exotic crops which are least resilient to Climate Change or pests. “For me, more trees mean more carbon absorption and lesser the impact of Climate Change”. Also, we need to focus on the human angle in our Climate Change stories. Put differently, we need to give a face to each of our stories and also our rapportage should be more from the rural areas”, she noted. The point that scientists have the luxury of conducting researches, and if they are not able to disseminate the research findings then they are doing some kind of disservice to the society, was again reiterated by Ms. Mukhim.

Mr. Sanat Chakraborty, editor, Grassroots Option, added that, “there is a little disagreement around the world towards the fact that the lot of these impacts are human induced and so we will have to clean up our own mess. Climate change is surely unpredictable, but we will have to plan within this uncertainty”. Mr. Chakraborty, highlighted the importance of adaptation at the grassroots level and also on the need to prepare community-led action plan, by ensuring greater representation from indigenous communities into the planning process. At the grassroots level, there exist three major gaps, a) weak extension support along with untimely delivery systems; b) inadequate credit availability and market linkages and c) lack of support in terms of risk insurance. “The community, the scientists and the governance, all need to talk to each at regular intervals to avoid a knowledge gap scenario”, he advocated. According to Mr. Chakraborty, forest is an important department because forest ecosystem has a multiplier effect on the overall impact of climate change. However, the way the department is designed; it doesn’t seem sustainable at all. In addition, at the ground level there is nobody from the forest department to develop a sustainable partnership with the indigenous communities. Such factors are further making the process of adaptation much more difficult. The key to minimize this knowledge gap is to make efforts towards convergence in governance, he said.

Mr. Dinesh C Sharma, supported his argument and added that there is a need to institutionalize the partnership or the communication with scientific departments, universities, media and the community. At present, there is no such institution where the media can communicate with these different stakeholders to better report on the interdisciplinary issue of Climate Change.

Dr. Subhash Ashutosh, Nodal officer, Meghalaya Climate Change Centre (MCCC) agreed that there was a lack of convergence which is required to understand the impacts of climate change related to livelihood, health, changing cropping patterns, increased frequency of flash floods, landslides are increasing. “Adaptation is extremely important for the people of Meghalaya because they are directly dependent on natural resources. For adaptation as well, we need to take up a scientific approach by conducting vulnerability assessment studies in different sectors at all level of administration”,

he noted. Adaptation to climate change has been the primary objective of the Meghalaya Basin Development Authority (MBDA) initiatives but convergence is still an issue, he added.

The interactive media roundtable session was followed by distribution of certificates to all the participants. After distribution of certificates, the participants dispersed for lunch.

Concluding session

After the lunch, participants and scientists gathered for the valedictory session in which Shri Banwarilal Purohit, Honorable Governor of Meghalaya delivered the valedictory address.

The session began with Dr. Subhash Ashutosh giving an overview of the various Climate Change programmes in Meghalaya. “Based on the six specific sectors that were identified as vulnerab;e to Climate Change in Meghalaya SAPCC, the MCCC had further developed around 165 projects to be undertaken by different state departments, he said”. Significant efforts are being made by the state climate change centre for mainstreaming adaptation into the process of development planning. The state government he noted, realizes the significance of the threat which is being posed by Climate Change on natural ecosystem and livelihood of local communities.

In his valedictory address, Shri Banwarilal Purohit, Honorable Governor of Meghalaya, expressed deep concern towards the threat of climate change on biodiversity and the people of Meghalaya. Giving reference to the abundance of natural resources that Meghalaya is blessed with, he feels that is undoubtedly one of the most vulnerable too. “Meghalaya is known for its floriculture, horticulture and tea cultivation all of which are highly sensitive to climate change. If we do not minimize the impact of climate change on these sectors, the economy of the state will be affected significantly”, he noted.

Population pressure, conversion of forest land into agricultural fields, deforestation, urbanization, mining and industrialization are other factors adversely affecting the environment in the state. So the attempt of the media should be to mainstream such issues like that of climate change, environment, adaptation etc. which are extremely vital. He also appreciated the role played by the indigenous communities with regard to adaptation and conservation through maintaining sacred forests etc. in the state.

Feedback Summary

State level media sensitization workshop, conducted over a period of three days, saw active participation from experts as well as media persons. Overall, there was a positive feedback from the participants in terms of the format of the workshop including informative technical sessions followed by a field visit and an extensive interaction session. The participants particularly felt that indeed there is a need for more such capacity building programmes for giving the media an opportunity to deeply understand the issue of climate change and to communicate with the rural community members for understanding the situation on ground.

Important takeaways from the workshop, as highlighted by some participants, was the understanding that climate change is not an event but a process and so its reporting should be dynamic covering different dimensions of climate change. The participants also learnt that media persons should also prioritize stories that essentially deal with the perceptions of village community members, having different source of livelihood related to climate change. Reporting on traditional knowledge for various conservation activities on ground can also be an important aspect.

One of the media persons felt that media participation was lacking and that there could have been a greater scope for group discussions based on the field visit.

Annex – Agenda

Media Workshop on Climate Change Reporting

Jointly organized by the Indian Himalayas Climate Adaptation Programme (IHCAP) of the Swiss Agency for Development and Cooperation (SDC) and Department of Science and Technology (DST), Government of India in collaboration with Meghalaya Climate Change Centre (MBDA), Government of Meghalaya; and Centre for Media Studies (CMS)

June 28-30 2017

DAY 1: JUNE 28, 2017	
Venue – State Convention Centre	
10:30 am	**Registration**
Inaugural Session (11.00 am to 12.30 pm) Moderator: Ms Ritika Kapoor	
11:00 am	**Arrival of Dr. M. Ampareen Lyngdoh, Minister, Information Technology Department etc, Government of Meghalaya**
11:15 am	**Welcome address by Head, CMS Advocacy, Ms. Annu Anand**
11:25 am	***Release of Study Reports by the Honourable Minister:*** • Impact of climate change on Forests and Bio Diversity in Meghalaya • Identification of climate vulnerability hot-spots in Meghalaya using high resolution climate projections • Meghalaya State Carbon Footprint Study
11:30 am	**Introduction of the SDC- DST Programme by Ms. Shimpy Khurana, Communication Officer, IHCAP**
11:50 am	**Introduction and Implementation of State Action Plan on Climate Change and Challenges in Effective Communication by Dr S. Ashutosh, IFS, Addl. PCCF, Dy CEO, MBDA & Nodal Officer Climate Change Meghalaya**
12:05 pm	**Opening Remarks by Shri R. M. Mishra IAS, Development Commissioner, Government of Meghalaya**
12:15 pm	**Address by the Chief Guest hon'ble Dr M Ampareen Lyngdoh**
12:25 pm	**Vote of Thanks by Ritika Kapoor, Research Executive, Centre for Media Studies**
12:30 pm	**Tea**

Technical Session 1- Climate Change in Meghalaya – An Overview Chair: Mr. Dinesh C Sharma		
12:45 pm	Icebreaker and Introduction of Participants	
1:00 pm	**Challenges of reporting Climate Adaptation with examples of live stories from the region and Introduction to IHCAP's media manual on Climate Reporting**	**Mr. Dinesh C Sharma**, *Senior Science Journalist*
1:15 pm	**Vulnerability of Meghalaya forests to climate change**	**Prof. N H Ravindranath**, *Professor Centre for Sustainable Technologies, Indian Institute of Science*
1:30 pm	**Changing Climatic Patterns in Meghalaya**	**Dr. Vimal Mishra,** *Assistant Professor, IIT Gandhinagar*
1:45 pm	**Carbon Footprint of Meghalaya**	**Mr. Kiran Ananth**, *CII-Sohrabji Godrej Green Business Centre, Hyderabad*
2:00 pm	**Discussion by Moderator on Media aspects of the Presentation**	
2:15 pm	**LUNCH**	

Technical Session 2- Climate Change Adaptation and Traditional Practices		
3:15 pm	**Water resources and Watershed Management**	**Prof. O. P. Singh,** *Professor, NEHU*
3:30 pm	**Traditional Knowledge Systems and Climate Change**	**Prof B.K. Tiwari,** *Professor, NEHU*
3.45 pm	**Forests and biodiversity of Meghalaya**	**Dr. Rajiv Kumar Chaturvedi,** *Research Scholar, Indian Institute of Science*
4.00 pm	**Discussion by Moderator on Media Aspects of the Presentation and Interaction**	
Technical Session 3 – Disaster Management and Adaptation		
4.15 pm	**Using space technology for early warning and disaster management**	**Dr. K K Sarma,** *Deputy Project Director,* NER-DRR
4.30 pm	**Climate Change- It's impact and adaptation in the context of Assam**	**Mr. Manjyoti Lahkar**, *Project Officer, Assam State Disaster Management Authority*
4.45 pm	**Discussion by Moderator on Media Aspects of the Presentation and Q & A Round**	
5:00 pm	**High Tea**	
DAY 2: JUNE 29, 2017 (8.00 am to 4.30 pm)		
7:30 am	**Meet at Assembly Point** *(in front of State Convention Centre)*	
8.00 am	**Departure for Field site 01**–*Village Mawphlang, East Khasi Hills District to observe the* **Mawphlang Sacred Grove** **Field site 02 –***Wah Shari, Khliehshnong, at Sohra (Cherrapunjee) and Lumkyntung, Village Umtyngnar, East Khasi Hills District* to observe the **Spring-shed Rejuvenation Projects**	
1.30 pm	**Lunch and group photograph**	
3:30 pm	**Group discussion about the story ideas on Spring-shed Management and Sacred Groves**	
DAY 3: JUNE 30, 2017		
Venue – State Convention Centre		
Media Round-table (9.30 am to 1.00 pm)		
10.30 am	**Registration**	
11.00 am	**Building bridges among media, scientists and civil society**	**Ms. Patricia Mukhim,** *Editor, Shillong Times*
		Mr. Sanat K Chakraborty, *Editor, Grassroot Option*
		Dr S. Ashutosh, *IFS, Addl. PCCF, Dy CEO, MBDA & Nodal Officer Climate Change Meghalaya*
		Mr. Kamaljit Chirom, *Teacher-In-Charge, Department of Journalism & Mass Communication, NEHU*
		Mr. Dinesh C Sharma, *Senior Science Journalist*
		Ms. Annu Anand, *Head, CMS Advocacy*
1.00 pm	**Distribution of Certificates**	
1.30 pm	**LUNCH**	
Valedictory Session (3.00 pm to 4.30 pm) **Moderator: Ms Ritika Kapoor**		
3.00 pm	**Arrival of the Honorable Governor of Meghalaya, Shri Banwarilal Purohit**	
3.00 pm	**Playing of National Anthem**	
3.05 pm	**Welcome Address by Head, CMS Advocacy, Ms. Annu Anand**	
3.10 pm	**Overview about the Climate Change Programmes in Meghalaya by Dr S. Ashutosh, IFS, Addl. PCCF, Dy CEO, MBDA & Nodal Officer Climate Change Meghalaya**	
3.30 pm	**Address by Chief guest, Honorable Governor of Meghalaya, Shri Banwarilal Purohit**	
4.00 pm	**Vote of Thanks, Ms. Ritika Kapoor, Research Executive, Centre for Media Studies**	
4.05 pm	**Playing of National Anthem**	
4.10 pm	**TEA**	

Media Coverage

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QUANTUM LEAP

DINESH C SHARMA

MEGHALAYA is known to have some of the wettest places on the planet — Cherrapunji and Mawsynram — which attract tourists and onlookers. However, perhaps the best kept secret of the state is its sacred groves — forest patches traditionally protected by communities — spread in the hill districts.

These are pristine forest areas conserved for centuries by local tribes as abodes of their deities. People believe that even plucking a flower or a nut from these groves could earn the wrath of gods. In the age of climate change, these sacred groves have become models of conservation for the world and are earning carbon credits for tribal communities.

While sacred groves in Meghalaya are relatively well preserved, open forest areas and other community forests are facing stress similar to those in rest of the country — deforestation, quarrying, forest fires, construction of development projects, demand for firewood and timber. Despite being one of the wettest places globally, the communities here are experiencing increasing 'dry season drought' due to loss of dense forest.

This, coupled with the increase in temperature, is disrupting the hydrological cycle of the watershed and impacting farming operations. There is soil erosion and downstream flooding too. Climate change is increasing the intensity and extent of dry season ground fires, reducing soil moisture and rainfall and leading to biomass loss. In such a situation, sacred groves stand out.

IN a unique initiative, the tribal communities that have legal rights for forests in Meghalaya under the Sixth Schedule of the Constitution, decided to use their traditional knowledge and wisdom of preserving sacred groves to rejuvenate other forest areas.

The initiative, which started in 2013, has started bearing fruit. By blending their knowledge of natural resource man-

DINESH C SHARMA

Tambor Lyngdoh in the Mawphlang sacred grove.

Inside a sacred grove

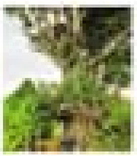
bon credits for their conservation work. The project engages 10 indigenous Khasi governments (*hima*) with 62 villages and small hamlets in the East Khasi district.

The relic forest is extremely rich in biodiversity and floral growth. The high rainfall makes it a mixed evergreen forest with abundant oaks and chestnuts as well as medicinal plants and

SCIENTISTS at MIT have found a new way to improve dialysis by using graphene. In dialysis

Minimising conflicts between humans & animals

INCIDENTS of human-wildlife conflicts are on the rise in the country. A new study has estimated that up to 32 wildlife species are damaging life and property, and has suggested remedial measures. It examined patterns of conflict and mitigation in over 5,100 families living in 2,855 villages neighbouring 11 wildlife reserves across western, central and southern India for three years. It was found that crops were lost by 71 per cent of households, livestock by 17 per cent and human injury and death were reported by 3 per cent of the households. Rural families use different mitigation techniques like night-time watch, scare devices and fencing to



Rural families use various mitigation techniques.

protect their crops, livestock and property.

"Resolving human-wildlife conflict requires revisiting the goals of conservation policies and investments by people and organisations. People may be better served by deploying early warning, compensation and insurance programs rather than by focusing heavily on mitigation,"

Twin climate projects under way in hill state

Rs 23-crore project to be implemented till 2020

State on course to mitigate climate change

Experts stress on climate adaptation in Indian Himalayan Region

Meghalaya's climate change project approved

Media Workshop On Climate Change In The Himalayas

Meghalaya's climate change project approved

Hills people need to adopt to changing climatic conditions:Guv

Meghalaya's climate change project approved

Climate Change Will Affect State's Economy: Guv

'Climate Change Menace Serious Threat'

IHCAP Indian Himalayas Climate Adaptation Programme

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