

REDD+ Himalaya: Developing and Using Experience in Implementing REDD+ in the Himalaya

Report of Side Events Organised at Conference of the Parties to the United Nations Framework Convention on Climate Change under the Project

Indian Council of Forestry Research and Education
(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Government of India)
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Background: ICFRE in collaboration with ICIMOD and GIZ organized side events at various meeting of Conference of Parties (COP) to the United Nation Framework Convention on Climate Change (UNFCCC) and facilitated the REDD+ Himalaya project partner countries to share their experience of project implementation with global audience. Partner countries were given opportunity at India Pavilion during COP 21 in Paris, COP 22 in Marrakech and COP 23 in Bonn for sharing their experience and knowledge on REDD+ implementation. Country project partners shared their experience on REDD+ implementation under South-South Cooperation in COP meetings.

1. Side Events Organised at COP 21: COP21, also known as the 2015 Paris Climate Conference, for the first time in over 20 years of UN negotiations, intended to achieve universal agreement on climate, with the aim of keeping global warming below 2°C. In this regard, forests play a vital role in achieving this target. REDD+ remains a critical instrument under UNFCCC that provides financial incentive to developing countries for mitigating greenhouse gas through interventions in the forestry sector while providing adaptation co-benefits. Following two side events were organized at India Pavilion in COP 21:

1.1 Getting ready for 2020 REDD+: What are Himalayan countries doing?

1.2 Addressing climate change in Himalayan ecosystems

1.1 Side Event on ‘Getting ready for 2020 REDD+: What are Himalayan countries doing?’: This side event was organized on 8 December 2015 at India Pavilion at COP 21, Le Bourget, Paris (France). The event, among others was attended by H.E. Dr. Thet Thet Zin, Deputy Union Minister, Ministry of Environmental Conservation and Forestry, Government of Myanmar.

All the Hindu Kush Himalayan (HKH) countries are preparing strategies for implementing REDD+, and are simultaneously developing relevant capacities at different levels so that REDD+ can be implemented effectively and efficiently with minimal adverse impacts. Himalayan countries have made progress in designing measurement, reporting and verification (MRV) packages, better understanding the REDD+ architecture within the framework of existing policies, legislation, and regulations and have identified safeguard approaches that are essential. Some countries are already testing pilot REDD+ interventions. In this side event representatives from Hindu Kush Himalayan countries presented and shared their experiences/ progress towards the readiness phase of REDD+. Specifically, the representatives attempted to answer the following questions:

- What is the evidence that illustrates how these countries are preparing for REDD+ policy in order to stimulate performance-based forest management?
- What measures have been taken to address social inclusion, environmental safeguards, biodiversity protection, and good governance in national REDD+ strategies?
- What can be collectively done at the regional level to highlight the attractiveness of REDD+ outside of the tropics?

The side event helped in developing a guiding framework for implementing REDD+ in the Himalayan region and provided a platform to share experiences from other countries in the Hindu Kush Himalayan region. During the side event, following schedule was followed:

S. No.	Topic of Presentation	Name of Speaker
1	Welcome and Opening Remarks	Dr. Horst Freiberg, Federal Ministry for the Environment, Nature, Conservation, and Nuclear Safety
2	Importance of REDD+ for Indian Himalaya and Role of ICFRE	Dr. Ashwani Kumar, Director General, ICFRE
3	ICIMOD trans-boundary programme on REDD+ in Himalaya	Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative, ICIMOD
4	REDD+ Pilot initiatives in the Indian Himalaya	Dr. T.P. Singh, Assistant Director General, ICFRE
5	Strengthening community forestry institutions (<i>Van Panchayat</i>) in Uttarakhand Himalaya through the REDD+ project initiative	Dr. Parag M. Dhakate, Nodal Officer REDD+ Project, Uttarakhand Forest Department
6	Panel Discussion on Issues and challenges of implementing REDD+ in the Himalayan countries	Panelists: 1. UN-REDD: Tim Christophersen (Chair) 2. India: Dr. G.S. Goraya, ICFRE 3. Bhutan: Mr. Lobjang Dorji, Bhutan Forest Department 4. Myanmar: Dr. Thaung Naing Oo, Director, Forest Research Institute, Forest Department, Yezin, Nay Pyi Taw 5. Nepal: Mr. Man Badhur Khadka, Joint Secretary, Chief of REDD Implementation Centre/MoFSC
7	Way forward and vote of thanks	Dr. T.P. Singh, Assistant Director General, ICFRE

The event started with the warm welcome and opening remarks by Dr. Horst Freiberg, Federal Ministry for the Environment, Nature, Conservation, and Nuclear Safety who highlighted the purpose of the side event at COP 21. It was followed by presentations made

by various dignitaries and panel discussion about the issues and challenges of implementing REDD+ in the Himalayan countries.

Dr. Ashwani Kumar, DG, ICFRE, apprised the meeting by giving an overview of Importance of REDD+ for Indian Himalaya and role of ICFRE. In his presentation, he briefly describes about the status of forests in India and issues related to the successful implementation of REDD+ in India. The panorama of India's forests ranges from Evergreen tropical rain forests in the Andaman and Nicobar Islands, the Western Ghats, and the north-eastern states, to dry alpine scrub high in the Himalaya to the north and arid scrub in the western deserts. Between the extremes, the country has semi-evergreen rain forests, Moist and dry deciduous forests, thorn forests, subtropical pine forests in the lower montane zone and temperate forests. He described that 16 Type groups exist in Indian Forests. He also highlighted about the area covered by different forest type groups. Dr. Ashwani Kumar focused on the issues for REDD+ in India. He emphasized on the draft National REDD+ policy and strategy and the institutional mechanism required for the successful implementation of REDD+. He also addressed about the role of the local communities in managing the forests and to receive the co-benefits of forest ecosystem services. Safeguard Information System need to be established for the effective implementation of REDD+ in India. Further, Dr. Ashwani Kumar highlighted the importance of India REDD+ policy and strategy. He described about the objective and implementation principles. Compatibility of the National Policy with the UNFCCC decisions and benefits of REDD+ implementation were also explained. He also briefly described about the mechanism for the operationalization of REDD+ in India. Ministry of Environment, Forest and Climate Change, Government of India has adopted a "Reference Document" to operationalize REDD+ in the country. The document based on the existing knowledge on the subject and roles and responsibilities of different departments, institutions, civil society and local communities to facilitate institutionalization and implementation of REDD+ in the country. Reference document consists of nine chapters on necessary guidance and framework for REDD+ implementation, covering important elements like: construction of national forest reference level, safeguards, governance, MRV mechanism, capacity building, and identification of research gaps in REDD+ in India. Dr. Ashwani Kumar emphasized that over the last three decades, progressive national forestry legislations and policies in India aimed at conservation and sustainable management of forests have reversed deforestation and have transformed India's forests into a significant net sink of CO₂.

Afforestation and reforestation in India are being carried out under various programmes like Social forestry initiated in the early 1980s, Joint Forest Management Programme initiated in 1990, afforestation under National Afforestation and Eco-development Board (NAEB) programmes since 1992, private farmer and industry initiated plantation forestry were also

discussed. The “State Compensatory Afforestation Fund Management and Planning Authority” (State CAMPA) is intended as an instrument to accelerate activities for preservation of natural forests, management of wildlife, infrastructure development in the sector and other allied works.

Plantations/Afforestation/Reforestation Activities in India have helped in increasing the annual rate of plantation to about 1.50 to 1.80 million ha. It is estimated that cumulatively about 40 million hectare plantations including about 30 million hectare of Block plantation has been under taken in the country so far. FSI (2011) has estimated that about 3.63 million ha of plantation and trees outside forests (TOF) constituting 5.07% of total forest and tree cover presently exists in the country. The plantations have reduced anthropogenic pressure to a considerable extent on the natural forests, and have also met both domestic of industrial demands besides meeting the rural energy demand.

Dr. Ashwani Kumar highlighted the significance of National Mission for a Green India (GIM). Key innovations under GIM include focus on quality of forests, ecosystem services, democratic decentralization, creating a new cadre of community youth as foresters and adoption of landscape-based approach. He further emphasized the objectives of the mission i.e. increased forest/tree cover on 5 m ha of forest/non-forest lands and improved quality of forest cover on another 5 m ha (a total of 10 mha); improved ecosystem services including biodiversity, hydrological services and carbon sequestration as a result of treatment of 10 m ha; increased forest-based livelihood income for 3 million forest dependent households; enhanced annual CO₂ sequestration of 50-60 million tonnes by the year 2020.

Carbon mitigation potential of GIM were also explained by Dr. Ashwani Kumar. The incremental annual mitigation potential of only the GIM interventions was estimated to be 148.8 Mt CO₂ for 2020. If the mitigation potential of the ongoing afforestation programme (of 1.2–1.3 mha, annually) under different schemes is considered, the total mitigation potential (ongoing afforestation + GIM interventions) is estimated to be 246 Mt CO₂, with a potential to offset 10.5% of the projected national GHG emissions.

Dr. Ashwani Kumar described the carbon sequestration potential of various forestry mitigation options like Protected Areas, improvement in forest and tree cover, increase in forest and tree cover in forest fringe villages etc. Various Acts which can play a vital role in implementing REDD+ in India were also explained by Dr. Kumar. At last, he concluded his topic by saying that REDD+ is an innovative way to mitigate climate change and ICFRE is instrumental in implementing REDD+ programmes in India.

Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative, ICIMOD delivered his presentation on “ICIMOD Trans-boundary programme on REDD+ in Himalaya”. He described the overarching goal at regional level played by ICIMOD to improve the conditions for implementing REDD+ measures to mitigate climate change that are socially and

environmentally sound in four Himalayan countries and building a regional REDD+ learning platform to foster south-south learning. He briefly explained about the role of project implementing partners in Himalayan Countries. He emphasized the objectives of the REDD+ programme in Himalayan countries. The objectives were highlighted according to the Himalayan Countries i.e. Nepal: 'Capacities': The capacities of the actors for REDD+ implementation at subnational level are strengthened for the implementation of REDD at district level; Bhutan: 'Carbon stocks': Methods for calculating, modelling and forecasting carbon storage in forests in the Himalayan region are developed; India: 'Gap analysis': Assessing the feasibility to participate in REDD+ at sub-national level; Myanmar: 'Gap analysis & capacity development': Supporting the REDD+ readiness roadmap and complementing UNREDD activities; ICIMOD: 'Regional learning platform': South-south learning and cooperation.

Dr. Bhaskar Singh Karky described about the importance of South-South Learning Platform. Representatives from all four project countries meet at least once per year between 2014 and 2019 to exchange experience and make joint field visits. A regional working group is set (by February 2017) for at least two topics; the group meets annually to share knowledge and experience. (e.g. REL/RL formulation, social/environmental standards, monitoring of biodiversity, calculation of carbon stocks). He emphasized that several COP decisions have recognized/encouraged strengthening collaboration between countries/between countries and international organizations, enhancing capacities to address technical and institutional requirements, integrating and coordinating efforts to avoid duplication and sharing of lessons learned and experiences gained. At last, he concluded the importance of trans-boundary cooperation in implementing REDD+ for Himalayan Countries. According to him, regional cooperation will help in Cross border learning and sharing; creating common vision for REDD+ in the Eastern Himalayan region; Common regional methodologies developed and shared and to make joint submission for the region.

Dr. T.P. Singh, ADG (BCC), ICFRE apprised the side event by giving an overview REDD+ pilot initiatives in Indian Himalaya. In his presentation, he briefly described about the Goal of India's NDC to UNFCCC i.e. to create additional carbon sink of 2.5 -3 billion tonnes of CO₂ equivalent through additional forest and tree cover (increase of about 680 - 817 million tonnes of carbon stock). He further stated that the Indian Himalayan Region (IHR) is spreading on 10 states namely Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, and hill regions of 2 states viz. Assam and West Bengal. Starting from foot-hills in the south (Siwaliks) the region extends to Tibetan plateau in the north (trans-Himalaya) comprising about 109 districts of the country. It contributes about 16.2% of India's total geographical area, and most of the area is covered by snow-clad peaks, glaciers of higher Himalaya, dense forest cover of mid-

Himalaya. Over 52% of total reporting area of Indian Himalayan region is covered by forests, which is much higher than the country's forest cover (over 20%).

Dr. Singh briefly described about the Roadmap for REDD+ in India. He explained about the different phases of Roadmap. Phase 1 – National Strategy and Action Plan Development, key role played by MOEF&CC; Phase 2 – Readiness and Initial Action; Phase 3 – Countrywide Implementation. He emphasized that Phase 2 and 3 can be instrumental simultaneously. According to him, Phase 2 (Readiness and Initial Action) includes piloting REDD+ projects; capacity building at project level and learning lessons for Phase-3. He explained that passing financial incentives to local communities can make the REDD+ a success at local, sub-national and National level. For this purpose, Methodologies and Modalities for a procedural framework need to be worked out. It should be ensured that people's participation and sharing of the benefits accrued from REDD+ incentives. Dr. T.P. Singh highlighted the various projects implemented by ICFRE. One of the Pilot Project in *Van Panchayats* of Nainital, Uttarakhand is being undertaken with the objectives of estimation of carbon status in the selected *Van Panchayats*, developing a transparent MRV systems and Safeguard Information System (SIS), capacity building of participating communities and getting the project registered for the carbon credits. He also addressed the drivers of degradation at project site (Nainital) i.e. collection of fuelwood for cooking and source of energy for heating during winter months, fodder collection for animals, cattle grazing in the forest, forest fire, collection of understorey vegetation for livestock bedding and manuring, encroachment in the forest and illegal felling. He further explained the measures to address the drivers of degradation i.e. patrolling in the *Van Panchayat*, plantation of fodder grasses, pine needle collection contributes reduction in fire incidence, small water reservoirs can be prepared to store the rain water, check dam construction to control the flow of water and soil erosion, appropriate tool/implements can be provided to *Van Panchayats* to control the fire occurrence, need for more awareness programmes to control forest fire, improved cook stove and liquefied petroleum gas can be provided to the community to reduce the usage of fuelwood.

Dr. T.P. Singh explained about the trans-boundary REDD+ Himalaya project and the status of forest cover in North East India. He also highlighted the specific objectives of the project i.e. development of methods for calculating, modelling and forecasting carbon storage, developing instruments in preparation for readiness in north-eastern India. He concluded his presentation by highlighting that REDD+ is an innovative way to mitigate climate change through sustainable development, India started strategy development and piloting, pilot projects shall provide good learning platform for this mechanism, need to learn from within and outside country, synergizing with other projects, capacity building for further dissemination.

Dr. Parag Dhakate, Nodal Officer, Uttarakhand REDD+ Project from Uttarakhand Forest Department delivered his presentation on “Strengthening community forestry institutions (*Van Panchayat*) in Uttarakhand Himalaya through the REDD+ Project initiative”. He introduced his topic by explaining the history of community forestry institutions (*Van Panchayat*) in Uttarakhand. According to him *Van Panchayats* are one of the oldest indigenous traditional community centric forest management systems. He emphasized the role played by *Van Panchayat* to protect & develop forest and equitable sharing of forest produce among stakeholders. He further explained that Uttarakhand has 12064 *Van Panchayats* and manages 523289 ha of forest area. Activities of *Van Panchayats* are governed by *Van Panchayat* Rules, 2005. He also explained about REDD+ pilot project being implemented in *Van Panchayats* of Nainital, Uttarakhand in collaboration with ICFRE. He emphasized about strengthening of *Van Panchayats* by addressing Drivers of Deforestation & Forest Degradation under REDD Plus Project. According to him, effective patrolling of forest areas, mitigation of forest fires, strengthening fiscal measures, active participation of the private sector and the local host communities, developing tourism as a major source of employment, capacity building and awareness generation in climate change can help in addressing the drivers of forest deforestation and forest degradation.

Dr. Dhakate concluded his presentation by emphasizing the need to undertake various activities under REDD+ project i.e. integrated water resource management: foster integrated water resources development and management planning, soil & moisture conservation works, plantations of fodder and grass species, value addition of pine needles and measures for building adaptive resilience and reducing vulnerabilities.

Panel discussion was chaired by Mr. Tim Christophersen, UN-REDD. Panelists from different Himalayan Countries were present during the meeting. India was represented by Dr. G.S. Goraya, ICFRE; Bhutan by Mr. Lobjang Dorji, Bhutan Forest Department; Myanmar: Dr. Thaug Naing Oo, Director, Forest Research Institute, Forest Department, Yezin, Nay Pyi Taw; Nepal: Mr Man BadhurKhadka, Joint Secretary, Chief of REDD Implementation Centre/Ministry of Forest and Soil Conservation (MoFSC). During the panel discussion the importance of regional cooperation between various Himalayan Countries were discussed. The regional cooperation between Himalayan Countries will help in building cooperation and collaboration on REDD+ actions within a region, countries could consider, for example: sharing data and information (e.g. on drivers, technical data, sharing lessons learned (e.g. how challenges to implementation were overcome) and experiences gained – addressing common issues as a region; sharing technical resources and capacities (e.g. expertise in remote sensing, forest monitoring, GHG inventories) and good practices – building an expert network; making joint submissions to the UNFCCC process. Common platform will help in

sharing the knowledge and experience and instrumental in upscaling of the project activities.

Dr. T.P. Singh proposed the vote of thanks to all the persons present during the meeting. He appreciated the role played by various speakers in highlighting the issues faced by Himalayan countries in implementing REDD+ projects. He also emphasize that the regional cooperation will help in better understanding of the forestry mitigation programmes and the experiences and knowledge about the REDD+ programmes.

1.2. Side Event on Addressing Climate Change in Himalayan Ecosystems: This side event was organized on 9 December 2015 at India Pavilion at COP 21, Le Bourget, Paris (France).

The Himalayan (HKH) region is highly dynamic, with many socioeconomic and environmental drivers of change at play, including climate change. The impacts of these changes challenge the resilience of natural and human capacities and the environment. The Himalayan region and downstream areas that depend on its water supply and other ecosystem services, including the Indo-Gangetic plain – ‘the grain basket of South Asia’ – are particularly vulnerable to these changes. Managing the Himalayan ecosystem sustainably is critical not only for preserving its pristine beauty and spectacular landscapes, but also for ensuring the ecological security of the entire Indian sub-continent. Hence there is a need to establish a monitoring network for the Himalayan environment to assess freshwater resources and the health of the ecosystem.

The side event features representatives of Hindu Kush Himalayan countries who would share their collaborative progress with South Asian countries and countries sharing Himalayan ecology. The Kailash Sacred Landscape Conservation and Development Initiative is a pioneering endeavor for managing larger landscapes with co-benefits which transcend nations. The initiative is being implemented in China, India and Nepal and facilitated by the International Centre for Integrated Mountain Development. During the side event, following schedule was followed:

S. No.	Topic of Presentation	Name of Speaker
1	Opening Remarks	Dr. David Molden, DG, ICIMOD
2	Importance of Himalaya in Indian subcontinent and ICFRE initiatives in Indian Himalaya	Dr. Ashwani Kumar, DG, ICFRE
3	Climate Change threats for Himalayan floristic composition: A case from Western Himalaya in India	Dr. G.S. Goraya, DDG, ICFRE
4	National Mission for Sustainable Himalayan Ecosystems (NMSHE)	Dr. Nisha Mendiratta, DST, Government of India

5	SDC's initiatives on climate change in mountain ecosystem	Dr. Andre Wehrli SDC
6	Risks and hazard assessment of climate change in the Indian Himalaya: A case from Himachal Pradesh, India	Dr. Ajay Lal, DEST, Government of Himachal Pradesh
7	Community based flood early warning system in Assam, India	Dr. Eklabya Sharma, DDG, ICIMOD
8	Kailash Sacred Landscape	Mr. V.R.S. Rawat, Scientist F, ICFRE
9	Way Forward and Vote of Thanks	Dr. T. P. Singh, ADG, ICFRE

Opening remarks in the event were made by Dr. David Molden, Director General, ICIMOD. He explained the past climate change in Himalayan region and future trends of climate change upto 2050. He explained how climate change is causing problems of water stress, declining agriculture and disasters in Himalayan region. He enlightened the point that 90% population in mid hills regions depend on springs for drinking water. Hence a 7 steps approach is very important in Himalayan region for reviving the springs. The seven steps suggested by Dr. Molden are as follows:

- i. Mapping of springs and spring sheds
- ii. Understanding spring hydrogeology
- iii. Training “barefoot” hydrogeologists
- iv. Understanding spring governance systems
- v. Preparation of spring management plans
- vi. Implementation of spring management plans
- vii. Monitoring of impacts

He very well explained about the Community Based Flood Early Warning System (CB-FEWS) and its importance. He shared the results and outcomes of pilot project on CB-FEWS in Assam. Dr. Molden ended his presentation by stating that actions are required to improve natural resource management, income diversification, risk management and responsive local governance.

In second presentation of the event Dr. Ashwani Kumar, Director General, ICFRE highlighted the points on Importance of Himalaya in Indian Subcontinent and ICFRE Initiatives in Indian Himalaya. He explained the importance of Himalayan region and why there is a serious need to conserve the Himalayan ecosystem. He explained that the Government of India’s “National Action Plan on Climate Change (NAPCC)” has announced the launch of a National Mission for Sustaining the Himalayan Ecosystem (NMSHE). The mission aims to deliver a better understanding the impact of climate factors on the Himalayan ecosystem and provide inputs for Himalayan sustainable development and fragile ecosystem preservation. He

further explained that, Under the NMSHE, two thirds of Indian Himalayan Region (IHR) area is targeted to be under forest cover with local communities playing an important part in its maintenance. Payments for the ecosystem services (PES) of the standing forests of this region can involve local communities in the conservation and adaptation efforts. Dovetailing the mission objectives of NMSHE and Green India Mission can lend effective implementation of these two important national missions under the NAPCC where forestry plays an important role in mitigating climate change. He highlighted the work of ICFRE and its institutes in the field of climate change and Himalayan ecosystem. He stated that the data and learning gathered from the ground will bring local conservation and development problems forward providing innovative opportunities. National policy and practices reflect common issues needing regional and trans-boundary solutions. The honey value chain between India and Nepal is an example where bringing farmers from different countries together allows them to share and improve their local business and marketing practices. Dr. Kumar ended his presentation with the remarks that the joint efforts of ICIMOD and ICFRE will leads to the converse the great Himalayan ecosystem and its diversity.

Dr. G.S. Goraya, Dy. Director General (Research), ICFRE in his presentation on “Climate Change Threats to Floristic Composition: A case from Western Himalaya in India” gave the overview of habitat and floristic richness of the Indian Himalayan Region along with indicators of impacts of climate change on vegetation and assessment of impacts of climate change & monitoring. He highlighted the following points in context of Western Himalaya in India:

- The region bears sub-tropical, temperate and alpine forest types housing broadleaved, coniferous and alpine vegetation
- More than 4,000 higher plant species recorded from the region, of which nearly half are endemic to Western Himalaya.
- Every ten square meter of alpine meadows bear an average of 16 plant species
- Natural populations of 14 conifer species recorded from the region
- A significant gene pool of wild nuts viz. walnut (*Juglans regia*), hazelnut (*Corylus jacquemontii*) and horse chestnut (*Aesculus indica*) that support wild animals such as the Asiatic black bear, primates and a variety of avifauna.

Dr. Goraya shared his experience from Himachal Pradesh on assessing the Impact of climate change:

- Permanent plots have been laid at high altitude transition zones (± 3700 m above msl) in Sutlej, Beas and Ravi basins.
- Floristic baseline is under preparation.
- Digital data loggers have been planted at those sites.
- Assessment would be available over the next ten years.

He concluded by saying that this type of exercise will provides unique opportunity to enjoy pristine forests, spreading alpine meadows and high rise peaks, and enjoys Himalayan beauty in its entirety.

Dr. Nisha Mendiratta, Department of Science and Technology (DST), Government of India gave the overview of the National Mission for Sustainable Himalayan Ecosystems (NMSHE) and its objectives. She stated that the NMSHE is only the mission in present national missions which is only area specific. It aims to understand scientifically the complex processes affecting the Himalayan ecosystem and to evolve and implement suitable scientifically derived management and policy measures for sustaining and safeguarding the Himalayan Ecosystem. The main objectives of the mission are as follows:

- To understand scientifically the complex processes affecting the Himalayan ecosystem
- Evolve and implement suitable scientifically derived management and policy measures for sustaining and safeguarding the Himalayan ecosystem.

The following are the major outcomes or key deliverables of the Mission highlighted by Dr. Mendiratta:

- Building human & knowledge capacities under which about 100 professionals will be trained for sustaining the Himalayan ecosystem, minimum of 25 well trained glaciologists will become available and at least 100 technical experts for environmental impact assessment
- Building institutional capacities for research in the Himalaya
- Building evidence based policy implementation capacities for facilitating multi stakeholder dialogues
- Scientific hazard, risk & vulnerability assessment of the Himalayan Ecosystem for providing scientific basis for adaptation planning and implementation
- Action programmes at state level in Indian Himalayan Region for catalyzing action in the Himalayan States
- Linking traditional and modern knowledge systems for enhancing adaptation technology uptake
- Generating awareness amongst stakeholder

Dr. Mendiratta highlighted the various programs undertaken by the DST in the field of climate change adaptation and implementation. She explained Indo-Swiss Capacity Building Programme on Himalayan Glaciology implemented by the DST to develop capacities of young Indian researchers in glaciology and related areas. She also shared her experience of Orientation and Training Programmes for different levels of State Government Officials in Himachal Pradesh. She concluded her presentation by saying that:

- To make knowledge available for the users and community NMSHE requires consolidated knowledge at one place
- Web-based Knowledge Portal on NMSHE will be launched on Mountain Day (December 11, 2015) www.knowledgeportal-nmshe.in
- Plan is to develop it into a pan-Himalaya knowledge repository
- Addresses the long standing challenge of low accessibility to data and information on the Himalaya for researchers and decision makers.

In the fifth presentation of the session Dr. Andre Wehrli from Swiss Agency for Development and Cooperation (SDC) highlighted the SDC's initiatives on Climate Change in Mountain Ecosystem. He gave the brief introduction of SDC mountain programme. Sustainable Mountain Development for Global Change (SMD4GC). He stated that the overall goal of the programme leads contribution to Sustainable Mountain Development under uncertain changes in climatic, environmental and socio-economic conditions with a specific focus on water, food security, energy and extreme events (DRR/CCA). He stated that ICIMOD and SDC is working together for last 30 years and ICIMOD provided the HKH-Mountain Hub of the SMD4GC programme. He gave the brief introduction of Indian Himalayan Climate Change Adaptation Programm (IHCAP) in which SDC works with national (Department of Science & Technology)/State level (Government of Himachal Pradesh) for strengthening science, action and policy in the context of climate change adaptation (CCA) in the Indian Himalaya region with aims at synergising actions using State Action Plans and NMSHE platforms. Dr. Wehrli further explained about the climate change adaptation programme by SDC in Andes which aims to reducing people's vulnerability to Climate Change impacts and improving local and regional adaptive capacities. He concluded his presentation with following recommendation:

- The sustainable CCA is an iterative process: Start acting now (based on robust measures), but take your time for proper planning, sound baselines and assessments as well as capacity development.
- Integrative approach is key: involve all stakeholders (from local to national) and take into account multiple realities and risks.

Dr. Ajay Lal, Department of Environment, Science and Technology (DEST), Government of Himachal Pradesh in the sixth presentation of the event highlighted the "Risks and Hazard Assessment of Climate Change in the Indian Himalaya: A case from Himachal Pradesh, India". He gave the brief introduction of collaborative efforts of SDC and Department of Science and Technology, Government of India for the implementation of IHCAP in Himachal Pradesh where DEST is the nodal agency for activities in Himachal Pradesh. Dr. Lal further explained the following perspective of the IHCAP:

- IHCAP's Indo-Swiss Joint Research Study in Kullu District

- Collaborative studies in Kullu using an Integrated Vulnerability, Risks and Hazard Assessment approach with Indian partner institutions, which can be replicated in other regions of the State as well as IHR States
- A risk assessment based approach for understanding climate vulnerability and climate induced hazards and risks for adaptation planning.

He explained the study areas maps and methodologies adopted by the implementing agencies for the scoping study of programme in Kullu District of Himachal Pradesh. He explained the landslides prone areas and landslides zones of the Kullu Districts with the help of maps. In his concluding remarks from the presentation Dr. Lal stated that:

- Concrete planning, development and implementation of selected adaptation measures should be done in close cooperation with local stakeholders (community, government, and private sector) and supported with best available scenarios of future climate.
- Underlying uncertainties regarding the future climate must be acknowledged, but should not provide an excuse for inaction. Clear guidance and recommendations in this regard is provided by the IPCC in their special report on managing the risks of extreme event and disasters.

In the seventh presentation of the event Dr. Eklabya Sharma, Dy. Director General, ICIMOD, Nepal gave a brief introduction about the community based flood early warning system (CBFEWS). The programme was started by ICIMOD in Assam, India. He explained the methodology of the Community based flood early warning system program and its importance. He explained that the objectives of CBFEWS are to manage flood or flash flood risk by providing early warnings to downstream communities and to enhance cooperation between upstream and downstream communities in the sharing of flood information. The program provides the guidance on how to act on warnings. He explained that prediction of flood at the local level is very helpful and is among the one of the successive efforts towards community development and welfare.

In the last presentation of session Dr. T.P. Singh highlighted the climate change issue in the Himalayan region by emphasizing the importance of Himalayan ecosystem in Indian sub-continent. Hence climate change adaption and mitigation programme should be encouraged at local and community level for the conservation of greater Himalaya. Dr. Singh also presented vote of thanks to all the speakers and audience who have contributed in one way or the other to make the side event success.

2. Side Event Organised at COP 22: REDD+ is now widely recognized as a financial incentive to the communities for their contribution in reducing greenhouse gas emissions by way of reduction in deforestation and forest degradation, and enhancement of forest carbon

stocks through conservation and sustainable development of forests. The mechanism is very important for the Himalayan region, which is a biological hotspot, and is facing rapid deforestation and forest degradation due to anthropogenic and climatic factors.

The Himalayan countries of India, Nepal, Bhutan and Myanmar share a common socio-economic legacy, and are also preparing their national REDD+ Strategy and Action Plans, developing REDD+ Reference Levels/ Reference Emission Levels, safeguard information systems (SIS) and the systems of National Forest Monitoring. REDD+ programmes are of utmost importance to the communities residing in the Himalayan region, as a large population still depends on forests for their livelihood. India, Nepal, Bhutan and Myanmar have now started taking some steps to engage themselves in REDD+ programmes. All these countries are in different levels of their preparedness in so far as REDD+ implementation is concerned. These four countries under the aegis of ICIMOD have started implementing a trans-boundary REDD+ Programme in the Himalayan region.

Side event on **“Trans-boundary REDD+ Programme in Himalaya: South-South Cooperation for Climate Change Mitigation”** was organized on 12 November 2016 at India Pavilion in COP 22 at Green Zone, Marrakesh. The side event served as a platform for these Himalayan nations to share their REDD+ project implementation experience with a larger audience.

The objectives of the side event were: (i) to share the REDD+ Trans-boundary Programme implementation in the Himalayan countries with a larger audience, (ii) to learn from each other’s experience in preparation of various REDD+ related intricacies such as Safeguard Information System, developing REDD+ reference levels, and National forest Monitoring, and (iii) to promote south-south cooperation for mitigating climate change. Following schedule was followed during the side event:

S. No.	Topic of Presentation	Name of Speaker
1.	Welcome and Introduction to the event & Panelists	Dr. T.P. Singh ADG (BCC), ICFRE, Dehradun (India)
2.	Indian perspective on REDD+	Dr. Shashi Kumar DG, ICFRE, Dehradun, India
3	IUCN on REDD+ in the region	Dr. Sandeep Sengupta Sr. Climate Change Advisor IUCN, Gland, Switzerland
4	Trans-boundary REDD+ for South-South Cooperation – ICIMOD Initiative	Mr. Kai Windhorst Chief Technical Advisor GIZ, Kathmandu, Nepal
5	REDD+ preparedness: Bhutan experience	Ms. Sigyel Delma, Senior Forestry Officer, Department of Forests and Parks, Thimpu, Bhutan
6	REDD+ and Communities participation: Nepal experience	Mr. Sindhu Prasad Dungana Jt. Secretary Ministry of Forests and Soil

		Conservation, Nepal
7	Piloting REDD+ in Indian Himalaya region	Dr. T.P. Singh ADG (BCC), ICFRE Dehradun (India)
8	REDD+ initiatives in Myanmar	Mr. Hla Maung Thein Director General Environmental Conservation Ministry of Natural Resources and Environmental Conservation, Myanmar
9	CDM Experience from Indian Himalaya	Dr. Ajay Lal HP Forest Department, India
	Questions Answer Session	

At the beginning of the event Dr. T.P. Singh, ADG (BCC), ICFRE introduced the topic of the event and welcomed the participants and the panelists.

Dr. Shahi Kumar, DG, ICFRE in his address highlighted the importance of REDD+ in global climate change mitigation. He briefed on the evolution of REDD+ under UNFCCC and role played by India in upgrading REDD to REDD+. He said that REDD+ aims at tipping the economic balance in favour of sustainable management of forests so that their economic, environmental and social goods and services benefit countries, communities, biodiversity and forest users while also contributing to the reductions in GHG emissions.

Highlighting the REDD+ Himalaya trans-boundary programme Dr. Kumar said that REDD+ remains one of the critical instrument under the UNFCCC that provides financial incentive to the developing countries for unlocking their potential in mitigating GHG by intervention in the forestry sector and at the same time providing adaptation co-benefits. The Project 'REDD+ Himalaya: Developing and using experience in implementing REDD in the Himalaya' is being implemented with active collaboration from ICIMOD of Kathmandu with a regional mandate in Bhutan, Nepal, Myanmar and India. It is a great opportunity that representatives from the Hindu Kush Himalayan countries will be presenting and sharing their experience and progress made in the REDD+ readiness phase. In India this partnership is for REDD+ capacity building focusing on North Eastern region of India.

Dr. Kumar informed that under the project under the project it is proposed to develop a Pilot REDD+ project in the state of Mizoram, one of the densely forested state of India. In the state of Mizoram, open forest constitute (tree crown density 10-40%) constitute about 68.3 %. This area offers enormous opportunity for enhancement of forest carbon stocks by following forest management practices. With appropriate forestry interventions this category of forests can be developed as a REDD+ project for Mizoram.

Joint Forest management in India also offers enormous opportunity for implementing REDD+ in India. Joint forest management (JFM) concept recognizes the share of protecting

communities over forest produce. With nearly 200,000 villages classified as forest fringe villages in India inhabiting an estimated 350 million rural people constituting about 30% of India's population, there is obviously large dependence of communities on forest resources. About 25% of India's forests are being managed through more than one hundred thousand Joint Forest Management Committees. There is ample scope and opportunities for integrating REDD+ initiative with the community controlled/managed forest and JFM programme of activities. Dr. Kumar also emphasized that a well-designed REDD+ programmes can also help nations in achieving their NDC targets with active participation of communities and communities in turn could be benefitted financially.

He thanked ICIMOD and all the project partner countries for accepting ICFRE's request to share their experience of the REDD+ project implementation and the experiences and lesson learnt during the project.

Dr. Sandeep Sengupta, Deputy Head and Senior Climate Change Policy Advisor IUCN in his address apprised about IUCN's presence in the region and their involvement in various REDD+ programmes. He informed that IUCN is soon going to start its offices in the various countries in the region. Dr. Sengupta also acknowledge India's role in the whole REDD+ negotiating process since Bali when the REDD actions were upgraded to REDD+.

Real emissions reductions along with improved livelihoods and strengthened community rights determine the success of REDD+ interventions. Steps towards this success include: broad participation in assessing the causes of deforestation and degradation; analysis of the impacts of REDD+ on the livelihoods of forest communities with the definitions and monitoring of social baselines as indicators of these impacts; and strengthened participation of vulnerable groups in defining REDD+ activities. Particular importance is given to the interests of women, indigenous peoples and other local communities – groups that are often marginalised in the planning of outcomes that closely affect them.

Dr. Sengupta said that IUCN's REDD+ work focuses on the integration of rights-based approaches as the foundation for the design and deployment of landscape, sub-national and national climate change mitigation and forest management strategies. A pro-poor orientation delivers tangible environmental, economic, social and cultural benefits to the poor.

Mr. Kai Windhorst, Chief Technical Advisor form GIZ, Kathmandu highlighted the role of ICIMOD in mobilizing a trans-boundary REDD + project in the Himalayan region. He also emphasized the Kailash sacred landscape spread across three countries (India, China and Nepal) has enormous potential to work together on forestry based solutions, ecotourism, agriculture, etc. Kailash sacred landscape and river basin in the area needs adaptation to climate change. River basins in the region are landscapes itself and provide variety of ecosystem services. A very recent move of consortium of Himalayan Universities initiated by

ICIMOD is a welcome step in this direction. This will improve the regional cooperation and capacity to continuously working with research groups and experts. We need Global definition of forests, to account for ecosystem services. Bali initiated a legal framework for involving indigenous peoples and local communities in REDD+ programmes. Climate smart agriculture is required in the region. Value of ecosystem services must be evaluated in terms of economies.

Ms. Sigyel Delma, Senior Forestry Officer, Department of Forests & Park Services from Bhutan presented REDD+ preparedness in Bhutan. Besides presenting country profile she highlighted the rationale behind Bhutan's intention to pursue REDD+ programmes. On REDD+ strategy and action plan she informed that analysis of drives of deforestation and forest degradation has been completed and valuation of ecosystem services will be starting soon. Bhutan has also initiated a roadmap document for Bhutan's approach to REDD+ safeguards. On National Forest Monitoring System, she informed that land use and land cover map for 2015 has been completed and participatory monitoring framework for community forestry is being developed. Process has also been initiated for assessment of forest reference emission level. Inventory for 20 districts has been completed.

Ms. Sigyel also acknowledges the financial support provided by international donors like FCPF, BMUB/GIZ, UN-REDD programme for initiating REDD+ programme in the country.

Mr. Sindhu Prasad Dungana, Joint Secretary, Ministry of Forests and Soil Conservation, Government of Nepal made a presentation on "REDD+ and community participation: Nepal experience". While describing the institutional community landscape he informed that 29% of Nepal's forests are classified as community forests. Since 1992 area under community forests and number of Community Forestry User Groups (CFUG) has increased enormously. On Nepal's approaches to REDD+, he informed that primarily it is community based and participatory in nature, it is multi-stakeholders, multi-sectoral, gender and socially inclusive with active collaboration of indigenous peoples and local communities. Federation of Community Forest Users Nepal (FECOFUN) is a key player in REDD+ working group in Nepal in collaboration with Nepal Federation.

ICIMOD supported REDD+ Himalaya programme is being implemented in collaboration with Government of Nepal, FECOFUN, ICIMOD, GIZ & NORAD. Piloting has been initiated in 3 districts. REDD working groups has been established at district and sub district level. At district level, District REDD+ Action Plan (D-RAP) has been developed. Local level capacity building is being is going on. Sensitisation and institutionalization of community approach to REDD+ has been initiated.

Highlighting the strength and opportunities for community based REDD+ in Nepal he informed that 26000+ Forestry User Groups (FUGs), growing women leadership, vibrant community federation, involvement of indigenous peoples etc. are a step forward in

creating an enabling environment for REDD+ readiness in Nepal. He informed that community participation in REDD+ offers synergistic efforts in reinforcing REDD+ and community forestry, recognition of customary right, better engagement of Indigenous Peoples (IPs) in Forest Governance.

Mr. Hla Maung Thein, Director General, Environment Conservation Department, Government of Myanmar informed that Myanmar is a carbon risk country with its substantial forest cover. As a part of Paris agreement Myanmar has submitted its INDCs in forestry and energy sector. On REDD+ initiative undertaken in Myanmar, Mr. Thein informed that overall goal of REDD+ in Myanmar is climate change mitigation, conservation of biodiversity and enhancement of forest carbon stocks. Among the potential areas for REDD+ in Myanmar, he informed that region from North to South part of Himalaya, mangroves and several degraded landscapes are good candidates for REDD+.

Myanmar is still in a preparatory stage for REDD+ implementation, capacity building and financial assistance is required to initiate. Myanmar is working with UNDP, UNEP, FAO, Government of Korea, Norway and with other multi-stakeholders collaborators. Myanmar has signed trans-boundary REDD+ Himalaya LAO this year only. Programme is focusing on gap analysis and capacity building, community involvement benefit sharing mechanism, etc.

He concluded his presentation with laying emphasis on strengthening forest governance, forest working plans, forest management units and need for developing a national forest monitoring system for Myanmar.

Mr. Ajay Lal from India presented a case study on “Linking watershed improvement with community livelihood through CDM projects: An experience from Indian Himalaya”. Mr. Lal shared the best practices followed during development of CDM Bio carbon project by the Himachal Pradesh Forest Department. It was one of the innovative project that integrated watershed development with livelihood. A community benefit sharing mechanism through carbon markets involving Government agencies and local institutions was developed. Sharing his experience of developing and implementing CDM forestry projects in Himachal Pradesh, Mr. Lal advised caution in implementing REDD+ in Himalayan region. One needs to explore the available information and database required for the project, the methodology and its prerequisites, benefit sharing mechanism etc.

Dr. T.P. Singh, ADG (BCC), ICFRE made a presentation on “ICFRE initiative on REDD+”. He presented an overview of REDD+ activities being contemplated at pilot scale in India such as Uttarakhand REDD+ project and REDD+ Himalaya project etc. Work done under the ICIMOD supported REDD+ Himalaya trans-boundary project was also presented by Dr. Singh.

Dr. Singh concluded that REDD+ offers an innovative way for climate change mitigation along with significant adaptation benefits. In order to boost REDD+ in India, Government of India need to finalize its REDD+ strategy. Various ongoing pilots offer good learning platform

and they need to be synergized. Capacity building of stakeholders holds the key to successful implementation at all levels.

Question Answer Session: During the question answer session Mr. Hans Friederich, Director General, INBAR wanted to know that how far Bamboo is included for mitigation, adaptation and restoration programs & REDD+. Mr. Kei Windhorst informed that in Myanmar under the project we are focusing on potential of Bamboo for carbon mitigation and climate change adaptation aspects. State of Mizoram in India is also focusing on growth and yield of Bamboo in relation to its carbon capture potential.

Mr. Dinesh Vyas of CASA (Church’s Auxiliary for Social Action) India wanted to know about the scope of civil society organization, Dr. Shashi Kumar replied that it varies from place to place and programme specific. For example JFM runs on share and care basis where involvement of local communities is an integral part of the programme.

Mr. Basanta Gautam from Nepal wanted to know from Bhutan that Bhutan is a carbon negative country as its carbon emissions are on negative side, how REDD+ can be visualized in Bhutan. Representative from Bhutan replied that REDD is a window of opportunities and Bhutan decided to pursue REDD+ for benefit of our forest and communities.

Ms. Pragati Dhakal from Karobar Daily of Nepal wanted to know about how ICIMOD is involving media in its regional REDD+ programme. Mr. Kei Windhorst informed that ICIMOD has its knowledge management and communication strategy. Media is most welcome to be part of the programme.

At the end co-chair Dr. Kei Windhorst in his vote of thanks expressed his thanks to all panelists, participants, ICFRE and ICIMOD for organizing the event.

3. Side Event Organised at COP 23: COP 23, also known as the 2017 Bonn Climate Conference, intended to reach decisions on effective implementation of Paris Agreement which aims at keeping global temperature increase well below 2°C. In this regard, forests play a vital role in achieving this target. REDD+ remains a critical instrument under UNFCCC and has also been recognized under Paris Agreement to provide financial incentive to developing countries for mitigating greenhouse gas through interventions in the forestry sector while providing adaptation co-benefits.

Side event on ‘**Afforestation and REDD+**’ was organized on 9 November 2017 at India Pavilion in COP 23 at Bonn (Germany). Following schedule was followed during the side event:

S. No.	Topic of Presentation	Name of Speaker
1.	Introduction to the event & participants	Mr. V.R.S. Rawat, Assistant Director General, ICFRE, Dehradun, India
2.	India’s national experiences in land use	Dr. Suresh Gairola, Director General,

	sector for climate change mitigation	ICFRE, Dehradun, India
3.	(i) Experiences from REDD+ Himalaya (ii) Quality-of-governance standards for REDD+ (lessons learned from Nepal)	Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative, ICIMOD, Kathmandu Prof. Tek Merasani, University of Southern Queensland, Australia
4.	REDD+ Himalaya: Nepal Experience of implementing REDD+	Dr. Sindhu Prasad Dhungana, Chief, REDD Implementation Centre, Govt. of Nepal
5.	Forestry interventions for Ganga rejuvenation and climate change mitigation	Dr. Savita, Director Forest Research Institute, Dehradun
6.	Conservation and Sustainable Management of Forests and Sacred Groves under Community and Private Ownership of Tribal People in Meghalaya for Adaptation to Climate Change and Mitigation	Dr. Subhash Ashutosh, PCCF, Department of Forest and Environment, Govt of Meghalaya, India
7.	South Asia's First VCS Methodology from India for the Implementation of REDD+ Activities in Landscapes Affected by Mosaic Deforestation and Degradation	Ms. Sabine Preuss GIZ-India, , Director Environment, Climate and Natural Resources Management, GIZ-India
8.	Afforestation, Green cover and REDD+	Dr. Vinita Apte President, TERRE Policy Centre, Pune, India
	Question Answer Session	
	Session Chair's Concluding Remarks	

Dr. Suresh Gairola, Director General, ICFRE chaired the session of the event. Mr. V.R.S. Rawat, Assistant Director General (Biodiversity and Climate Change), ICFRE and Nodal Officer for the event welcomed all the delegates/ participants and introduced the event and the panelists.

This side event featured participation from ICFRE, Government of Meghalaya, ICIMOD, GIZ, Government of Nepal and TERRE Policy Centre Pune who have presented and shared their experiences and progress towards the various forestry activities for climate change mitigation and implementing REDD+ and REDD+ readiness. The agenda of the event is annexed.

Dr. Suresh Gairola, Director General, ICFRE and Chair of the Session in his opening remarks highlighted that globally forests play a crucial role in mitigation and adaptation to climate change, and forestry sector is making positive contribution for climate change mitigation in India. He apprised the audience by giving an overview of India's national experiences in land use sector for climate change mitigation. In his presentation, he briefly describes about the

status of forests in India and issues related to the successful implementation of various afforestation programmes and REDD+ in India. The panorama of India's forests ranges from evergreen tropical rain forests in the Andaman and Nicobar Islands, the Western Ghats, and the North-Eastern states, to dry alpine scrub high in the Himalaya to the north and arid scrub in the western deserts. Between the extremes, the country has semi-evergreen rain forests, moist and dry deciduous forests, thorn forests, subtropical pine forests and temperate forests. He focused on the issues for REDD+ in India and role assigned to ICFRE for institutionalization the REDD+ in India. He highlighted various forestry programmes, actions enabling policies, laws and legislations that are contributing to the mitigation and adaptation to climate change in forestry sector in India. Pursuant to Paris Agreement, India in its Nationally Determined Contribution (NDC) to UNFCCC has communicated to create an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030. The land use, land-use change and forestry sector in India is a net carbon sink which offsets about 12% of total greenhouse gas emission.

Plantations/Afforestation/Reforestation activities in India have helped in increasing the annual rate of plantation to about 1.50 to 1.80 million ha. Afforestation and reforestation in India are being carried out under various programmes like Social Forestry initiated in the early 1980s, Joint Forest Management Programme initiated in 1990, afforestation under National Afforestation and Eco-development Board (NAEB) programmes since 1992.

Dr. Savita, Director, Forest Research Institute, Dehradun presented a case of Forestry Intervention for Rejuvenation of River Ganga under Government of India's flagship *Namami Gange* programme and underscored how this programme could contribute for climate change mitigation as additional co-benefit. River Ganga is a trans-boundary river of Asia that traverses across five states of India namely Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal and also in Bangladesh. The river covers a total stretch of 2,525 km, thus forming one of the largest basins in the world. It represents 26% of India's land mass and supports about 43% of country's population. Despite high significance, continuous degradation and fragmentation of river Ganga has ranked it as the fifth most polluted river of the world in 2007.

In May 2015, Government of India has approved the '*Namami Gange*' programme to clean the river Ganga. Massive afforestation drive also proposed along the banks of Ganga. For this purpose, proposal for Rs. 20.64 billion is under consideration for undertaking plantations works along the banks of river Ganga in five states namely, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal in an identified riverscapes involving diverse forest areas of 83,946 sq km (or 83,94,600 ha) over the next five years. Plantations proposed to be raised under this '*Namami Gange*' programme on maturity will be capable

of capturing significant amount of carbon dioxide and will contribute towards India's NDC in forestry sector.

Dr. Subhash Ashutosh, PCCF Meghalaya spoke on Conservation and Sustainable Management of Forests and Sacred Groves under Community and Private Ownership of Tribal People in Meghalaya. The state of Meghalaya is endowed with rich natural resources. Forest cover in the state occupies over 76% of the geographical area. Rising population, urbanization, widespread mining activities and reduced cycle of shifting cultivation are the main reasons which have led to degradation in the natural resources and forests have not only shrunk in extent but quality of forests and ecosystem services emanating from them have also been eroded. Impacts of climate change are evident and it poses a serious threat to the livelihood of the people.

In Meghalaya, ownership of forests predominantly lies with the communities and individuals. Following initiatives in the State hold promise for addressing the climate change issues in the future.

- (i) Working schemes for community and private forests
- (ii) Strengthening and climate proofing of sacred groves
- (iii) Forestry Mission under Integrated Basin Development and Livelihood Promotion (IBDLP) Programme
- (iv) Community REDD+ projects

He further highlighted the climate change adaptation and mitigation benefits of these community actions.

Prof. Tek Merasani, University of Southern Queensland, Australia spoke on Quality of governance standards for REDD+ especially lessons learned from Nepal and compared with that of Papua New Guinea. He emphasized that REDD+ has potential to transform the forestry sector from a climate change problem to climate change solution but poor governance is a big issue in many of the developing countries. He concluded that the ownership is the key issue, the top down approach does not work; and standards should be regime specific.

Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative from ICIMOD, Nepal shared experiences from trans-boundary REDD+ Himalaya project being undertaken in Bhutan, Myanmar, India and Nepal. He highlighted the work done under the ICIMOD supported REDD+ Himalaya project in different partner countries.

Dr. Sindhu Prasad Dhungana, Chief, REDD Implementation Centre, Govt. of Nepal shared his country's experience of implementing REDD+ in Nepal. Nepal has already developed forest reference level and national REDD+ strategy. At ground level Nepal has also prepared State REDD+ Action Plans (S-RAP). He informed that in Nepal REDD implementation centers have

been established at District level. Community forestry-based system is doing well and facilitating implementation of REDD with communities. REDD is multi-stakeholder/multi-sectoral programme, gender and socially inclusive. He emphasized that Co-benefits of good REDD+ programme implementation are much higher than projected carbon benefits

Ms. Sabine Preuss from GIZ-India also made presentations on newly approved VCS methodology for REDD+ developed in India. She described the process of the methodology and how it can be useful for implementing REDD+ in India as the methodology has been developed keeping in mind the applicability condition under Indian circumstances.

Dr. Vinita Apte, President, TERRE Policy Centre, Pune, highlighted TERRE initiatives for afforestation and REDD+ in Pune. Citing a case of urban forestry initiative in Pune district where TERRE has been involved in rejuvenating of wastelands by planting 15000 indigenous trees in 32.68 hectare in Mhalunge and 16 hectare in Warje.

Dr. Gairola in his concluding remarks appreciated the role played by various speakers in highlighting the issues in implementing various forestry programmes and REDD+ in the region. Himalayan countries have made progress in designing REDD+ packages, better understanding of the REDD+ architecture has been developed within the framework of existing policies, legislation, and regulations. Some countries have gone ahead and already testing pilot REDD+ interventions. He also emphasize that the regional cooperation will help in better understanding of the forestry mitigation programmes and the experiences and knowledge about the REDD+ programmes. He thanked all the presenters and audience present during the session. The event was very well received by the delegates and strengthened leadership role of India in forest and REDD+ in the region.

The event has successfully highlighted the positive contribution of India's forests in climate change mitigation and adaptation. The side event on 'Afforestation and REDD+' also focused on various forestry based initiatives to meet India's NDC in forestry sector and various government initiatives for climate change mitigation and adaptation in forestry sector. The event also provided a platform for state governments to showcase their forestry initiatives and community mobilization in forest conservation. Experience sharing on trans-boundary REDD+ Himalaya programme with neighboring countries and ICIMOD facilitated south-south regional cooperation on REDD+. The event also showcased the REDD+ methodology that has recently been approved by verified carbon standard (VCS) and addresses India specific circumstances and scenarios which has a great potential applicability for REDD+ implementation in India.



Glimpses of Side Events Organised in Meetings of COP in UNFCCC