

## Contents

I. Background.....	1
II. Rationale .....	1
III. Objectives .....	2
IV. Agenda .....	2
Session I: Opening Session.....	3
1. Opening speech by Director General of Forest Department, Myanmar....	3
2. Congratulatory Remark by Dr. Bhaskar Karky, Programme Coordinator, REDD+ Initiative, ICIMOD, Nepal .....	4
Session II. Role of REDD+ in supporting SDGs and NDC .....	5
1. Climate Change Policy, Strategy and Action Plans to contribute NDC and SDGs.....	6
2. Development of REDD+ in the frame of SDGs and NDCs .....	7
3. REDD+ Linking to NDC and SDGs .....	9
Session III. Experience sharing of Regional countries on Role of REDD+ in supporting SDGs and NDC.....	11
1. Nepal experience in REDD+ supporting SDGs and NDC .....	12
2. India's experience in REDD+ supporting SDGs and NDCs .....	14
3. Nepal's Community Forestry (CF) and its Contribution to NDC, REDD+ and Sustainable Development Goals .....	15
Session IV: REDD+, SFM, biodiversity and stakeholders participation .....	18
1. Biodiversity Monitoring protocol for REDD+ .....	19
2. Assessment and Monitoring Flora and Fauna, Pyintaya, Shan State .....	21
3. Current Status of NFMS and Initial FREL of Myanmar .....	23
Session V: REDD+ , CF and Safeguards.....	24

1. Divers of Deforestation and Forest Degradation in Shan State, Myanmar .....	25
2. An assessment of governance quality and development of “verifiers” for key governance indicators for community based forest management regimes in Hindu Kush Himalayan Region.....	26
3. Building Timber Value Chains for REDD+: The timber value chain in Myanmar & its compatibility with REDD+ .....	28
4. Contribution of Community Forestry; SuComFor Project Research to SDGs and NDC .....	29
5. Indigenous Rights and Safeguards in REDD+ by Mrs. Naw Ei Ei Min, POINT (Promotion of Indigenous and Nature Together) .....	31
6. Mapping natural capital in Myanmar strengthening the argument for conservation.....	32
Session VI: Panel discussion .....	35
The way forward for development of REDD+ in the context of supporting SDGs and NDC .....	35
Session VII: Closing Ceremony .....	40
Annex 1: Agenda of Regional Workshop on “Role of REDD+ in supporting SDGs and NDC” .....	42
Annex 2: Regional Workshop on Role of REDD+ in Supporting SDGs and NDC Participant List.....	46
Annex 3- Opening Speech to be delivered by Dr. Nyi Nyi Kyaw, Director General, Forest Department, Ministry of Natural Resources and Environmental Conservation at the Opening Ceremony of Regional Workshop on Role of REDD+ in supporting SDGs and NDC .....	49
Annex: 4- Presented papers .....	54
Annex 5- Records of presentations .....	91

# Regional Workshop on REDD+

## “Role of REDD+ in supporting SDGs and NDC”

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### **I. Background**

Myanmar has the largest remaining forest area in continental Southeast Asia and 42.92% of the total land surface is endowed with forests. In 2015, Myanmar become the country which has the third highest rate of deforestation in the world. Recognizing the rapid rate of deforestation and forest degradation in the country, the government of Myanmar (GoM) has committed to set aside the 30 % of the total country area as reserved forests and protected public forests, and another 10 % as the Protected Areas. Those Nationally Determined Contributions (NDCs) will have to be fulfilled by the year 2030. However, the GoM needs to needs to find a mechanism which will check the rapid rate of deforestation and forest degradation, and save the remaining forests of the country in order to fulfil Sustainable Development Goals (SDGs) and to achieve sustainable development of the country.

REDD+, with its economic incentives for the conservation of forests, is a mechanism, which could contribute to the sustainable if carefully crafted. Myanmar has become a partner country of the UNREDD programme in 2011 and is also implementing the REDD+ Himalaya supported by German government. REDD+ Readiness Roadmap, a foundation for the further REDD+ activities in Myanmar, was completed in 2013. The country is still in the process of REDD+ readiness phase and is expected to complete the REDD+ strategies this year.

### **II. Rationale**

Both the SDGs and REDD+, either in part or as a whole, intends to achieve sustainable management of natural resources and to mitigate climate change and its impacts. REDD+ activities are directly linked to some SDGs while other

SDGs are also indirectly addressed. However, albeit this synergy between REDD+, SDG and the NDC, there is the risk that REDD+ activities are uncoordinated and stand parallel to the SDG and NDCs activities.

Therefore, REDD+ in Myanmar needs to be embedded within broader sustainable development concept and international frameworks such as NDC and SDGs. Against this background, the “**Regional Workshop on REDD+**”, which is supported by ICIMOD, will be organized at Forest Research Institute, Nay Pyi Taw of Myanmar. The theme of the workshop is “*role of REDD+ in supporting SDGs and NDC*” and the workshop aims to find out the possible ways to fulfil the potential of REDD+ to support broader SDGs and NDC of the country. The workshop will bring together REDD+ practitioners and experts from the region.

### III. Objectives

The Regional workshop aims to address the following objectives:

- ❖ To identify possible ways to nest REDD+ within broader SDGs and NDCs;
- ❖ To exchange experiences on progress and challenges in REDD+ readiness phase in the region through south-south cooperation;
- ❖ To get feedback and suggestion from the regional REDD experts to synchronize REDD+ with SDG and NDC.

### IV. Agenda

The workshop is held with seven sessions according to the themes, which are:

- ❖ Session I: Opening Session
- ❖ Session II: Role of REDD+ in supporting SDGs and NDC
- ❖ Session III: Experience sharing of Regional countries on Role of REDD+ in supporting SDGs and NDC
- ❖ Session IV: REDD+, SFM, biodiversity and stakeholders participation
- ❖ Session V: REDD+ , CF and Safeguards
- ❖ Session VI: Panel Discussion
- ❖ Closing Session

The detailed agenda of the workshop is attached in Annexe 1.

## Session I: Opening Session

### 1. Opening speech by Director General of Forest Department, Myanmar



The workshop was firstly started with the opening speech of Dr. Nyi Nyi Kyaw, Director General of Forest Department. He expressed that this workshop has timely come out to be in line with the global efforts to combat the climate change impacts to be Sustainable Development through implementing Nationally Determined Contributions. Then, he briefly explained about collaboration history between ICIMOD and Myanmar Forest Department. He highlighted the current activities and projects carried out with the coordination with ICIMOD. He mentioned about the current REDD+ implementation and supporting organizations in Myanmar. He explained about Nationally Determined Contribution that Myanmar has submitted to UNFCCC and activities that Forest Department is responsible for meeting those contribution targets. Furthermore, he also mentioned the importance of Sustainable Development Goals for Myanmar. He focused on the objectives of the workshop and believed that this Regional Workshop will provide invaluable recommendations and outcomes to

support the successful implementation of Myanmar's REDD+ Roadmap in supporting Myanmar's SDGs and NDC.

He concluded his speech with expressing his gratitude to GIZ and ICIMOD for supporting in organizing the workshop and all resource persons and participants from all international organizations, NGOs and line Ministries for their contributions and active participation. Lastly, he encouraged all participants to make utmost efforts and constructive discussions for the success of this Workshop.

## **2. Congratulatory Remark by Dr. Bhaskar Karky, Programme Coordinator, REDD+ Initiative, ICIMOD, Nepal**



Firstly, Dr. Bhaskar Karyky, Programme Coordinator, REDD+ Initiative of ICIMOD, expressed his sincere thanks to GIZ for financing the regional the workshop, Forest Department and Forest Research Institute for hosting the workshop and all participants for joining the workshops. He briefly explained the importance of relating REDD+ to SDGs and NDCs and significance of the regional workshop. He also mentioned his expectations from the workshop. He finally concluded his remarks with encouragement to all participants to meeting the workshop's expectations.

## Session II. Role of REDD+ in supporting SDGs and NDC



The session was chaired by U Kyaw Kyaw Lwin, Deputy Director General of Forest Department. The session includes the following topics:

1. Climate Change Policy, Strategy and Action Plans to contribute NDC and SDGs by U Min Myat Aung, , Assistant Director, Environmental Conservation Department, Myanmar,
2. Development of REDD+ in the frame of SDGs and NDCs by Mr. Tim Boyle, Chief Technical Advisor of UN-REDD programme Myanmar,
3. REDD+ Linking to NDC and SDGs by Dr. Thaung Naing Oo, Director of Forest Research Institute, Forest Department, Myanmar.

## 1. Climate Change Policy, Strategy and Action Plans to contribute NDC and SDGs



U Min Myat Aung, Assistant Director, Environmental Conservation Department presented about Climate Change Policy, Strategy and Action Plans in Myanmar. He firstly explained environmental challenges in Myanmar including climate change, deforestation, loss of biodiversity and extreme weather events, etc. He then focused on explaining the impacts of climate change in Myanmar and environmental mainstreaming towards sustainable development. He explained in detailed about Myanmar National Climate Change Policy, Strategy and Action Plans (2017-2030). In the plan, he pointed out the priority sector relevant to sustainable natural resource management. Furthermore, he explained the integrated approach to implement the action plan for achieving SDGs and NDCs. Lastly, he concluded the presentation by highlighting the way forward activities for sustainable economic development and environmental sustainability.

During discussion,

- i) Mr. Prakash Lamsal, Ministry of Forests and Soil Conservation, Nepal, discussed Role of CFUGs in implementing REDD+ and their link with Forest Department. U Kyaw Kyaw Lwin responded by explaining nature

of CF and progress of CF establishment with the support of Forest Department in Myanmar,

ii) Mr. Timmothy Boyle , Chief Technical Advisor, UN-REDD Programme asked about the Finance needs of activities in the Sectorial Action Plans and sources of Finance.

iii) Dr. Nyein Chan, Lecturer, University of Forestry & Environmental Science commented on to add estimated targets in new NDCs and asked role of education sector in implementing the action plan. The presenter responded that it is still challenging to add targets in NDC and development of curriculum regarding climate change and environment is one of activities in sectoral plans.

## 2. Development of REDD+ in the frame of SDGs and NDCs



Mr. Tim Boyle, Chief Technical Advisor of UN-REDD programme Myanmar presented on development of REDD+ in the frame of SDGs and NDCs. He started his explanation of why forests are important in Nationally Determined Contributions and climate change adaptation. Then, he continued his presentation by providing information on cost of deforestation in a global perspective. He added the linkage between forests and SDGs by mentioning how forests are linked to each related goal. Furthermore, he brought REDD+ in SDGs and NDC concept and explained how they fit each other. Lastly he gave a quick

overview on National REDD+ implementation in Myanmar and ends his presentation.

Upon his presentations, the following questions and comments were developed by the audience:

- i) Dr. Bhaskar asked about linkage of NDC and REDD+ in Myanmar. Mr. Tim responded him by explaining result- based payment in the context of Myanmar and absence of emission targets in Myanmar' s NDC .
- ii) Dr. Nyein Chan, Lecturer, University of Forestry & Environmental Science asked how will the root strength in traditional fallow forests? What types of cultivated land do you want to refer? The presenter responded by mentioning complex structure in natural forest, simple structure in plantation & fallow and grassland and it is needed to be checked in references.
- iii) U Ling Houg, promotion of Indigenous and Nature Together (POINT), discussed about SDGs (17) goals include poverty eradication and other goals related to rural people. He highlighted that most vulnerable communities are from rural area and strengthening their land Tenure is crucial to meet SDG. He questioned on how UNREDD is trying to make sure it. Mr. Timothy responded that in National Land Use Planning, REDD+ will be implemented based on the legal framework and safeguard development with involvement of all stakeholders.
- iv) Daw Khin Moe Kyi, Training Coordinator of RECOFTC discussed on importance of improving national & sub-national level governance and the mechanisms to allow the land right for customary land area.

### 3. REDD+ Linking to NDC and SDGs



Dr. Thaung Naing Oo, Director of Forest Research Institute, Forest Department, presented about REDD+ linking to NDC and SDGs in the country context of Myanmar. He introduced the country profile, policies, law and regulations of Forestry and Environmental sector and forest resources status in Myanmar. He highlighted the forest cover change in Myanmar during 2010 and 2015. It is mentioned in the presentation that Myanmar deforestation rate became third worst country in the world. He explained direct and indirect drivers of deforestation in Myanmar.

Then, he continued his presentation with overview of REDD+ in Myanmar including REDD+ development since 2013 up until now. He highlighted the linkage of REDD+ to Nationally Determined contribution of Myanmar and Sustainable Development Goals (SDGs). He pointed out main SDGs related to REDD+ in Myanmar. He explained briefly REDD+ in Green Development Strategy and reforms of forestry sector during the last three years. He concluded his presentation with key lessons learnt from REDD+ implementation experiences in Myanmar.

During discussion,

- i) U Zaw Oo, Program Officer of ECCDI asked his opinion on meeting NDC target by 2030 based on the supporting actions like REDD+. Dr. Thaung explained how PFE establishment in NDC can be fulfilled through REDD+ projects and activities.
- ii) Mr. Prakash Lamsal, Government Service from Ministry of Forests and Soil Conservation, Nepal questioned on representation of CFUGS and their contribution in multi-stakeholder taskforce of REDD+. Dr. Thaung responded that at sub-national level, consultation workshops are already in ongoing stages in all states.
- iii) Dr. Nyein Chan, Lecturer, University of Forestry & Environmental Science asked about the exclusion of overlapped areas in reserved forests & Protected Areas (PAs). U Kyaw Kyaw Lwin explained the current progress of establishment of PAs and the amount of overlapped areas between PFEs and PAs.
- iv) Dr. Tek Maraseni, Associate Professor, University of Southern Queensland Australia, discussed about Enterprises development in CF (CFI/ 2016). Dr. Thuang explained that CFUGs have already initiated in enterprise development with support of FD and NGOs and he also provided relevant examples of enterprise development in different regions
- v) Mr. Prakash Lamsal, Ministry of Forests and Soil Conservation, Nepal, discussed on decentralization of government due to deforestation. Dr. Thaung explained decentralization in forestry sector with a timeline against deforestation.
- vi) Mr. Hari Krishna Laudari, Assistant Forest Officer, Ministry of Forests and Soil Conservation, Nepal, asked about how the domestic wood demands are fulfilled and approaches to fix Annual Allowable Cut. Dr. Thaung answered the policy changes and current actions regarding fixing AAC. He also explained about how Myanmar Timber Enterprise ensured domestic timber supply.

### Session III. Experience sharing of Regional countries on Role of REDD+ in supporting SDGs and NDC



The session was chaired by Dr. Bhaskar Singh Karky, Program Coordinator, REDD+ Initiative from ICIMOD. The session includes the following topics:

1. Nepal experience in REDD+ supporting SDGs and NDC by Mr. Hari Krishna Laudari, Assistant Forest Officer, Ministry of Forests and Soil Conservation, Nepal.
2. India's experience in REDD+ supporting SDGs and NDCs by Dr. R.S.C Jayaraj, Director of Rain Forest Research Institute from India.
3. Nepal's Community Forestry (CF) and its Contribution to NDC, REDD+ and Sustainable Development Goals by Mr. Prakash Lamsal, Community Forestry Development Officer, Ministry of Forests and Soil Conservation, Nepal.

## 1. Nepal experience in REDD+ supporting SDGs and NDC



Mr. Hari Krishna Laudari, Assistant Forest Officer, Ministry of Forests and Soil Conservation, Nepal presented “Nepal's REDD+, and SDGs and NDC”. First of all, he explained the changes of forest cover based on the time series, and 9.4% of GDP contribution from the forest sector. He explained the new Constitution (2015), which is a major transformation for Nepal. The country of Nepal is a Federal Democratic Republic. It has Federal, provincial (7) and local (753) government. The responsibility of Forest management is at local level. In the country of Nepal, states and local governments can develop their own policies, laws and regulations and can raise taxes. And then, he described institutional arrangement, cost/benefit sharing in the process of REDD+. He presented Nepal's REDD+ approaches. Currently, they apply Participatory and Multi-stakeholder Engagement Approach, Community-based Forest Management Approach, Multi-stage (Scale) Approach and Multiple Programs Approach in the implementation of REDD+. He expressed REDD+ Milestone in Nepal. In addition, he presented Emission Reduction Program for 10 years. USD 176.5 million are the costs for implementing Emission Reduction Program Document (domestic contribution, ODA, CBFM co-financing and ER sale). Moreover, he explained the Linkage between REDD+ and SDGs, the gaps had. These gaps are: Forestry Sector in CC adaptation is not recognized, National REDD+ Strategy (draft) needs to be endorsed, and it has limited coverage REDD+ area. Nepal's

Nationally Determined Contribution (NDC), submitted in October 2016, which is more ambitious than its Intended Nationally Determined Contribution (INDC) submitted earlier this year. While the INDC contained a list of ten targets, Nepal has added four more targets to its NDC. But, Nepal's NDC don't have clear target. Additionally, He presented the Linkage between REDD+ and NDC. He also described the gaps. Benefit sharing mechanism, Sustainable financing, and Capacity building of stakeholders at sub-national level, which are the gaps in REDD+ and NDC. At the conclusion of his presentation, he expressed the ways forward Nepal's REDD+ program- SDGs 13 and 15. It still persist the gaps in policy, institutional and benefits sharing. It needs to increase REDD+ program coverage. SIS to make REDD+ program agreeable and sustainable, and monitoring protocols to track REDD activities in achieving SDGs and NDC.

After presentation, the following questions are asked to Mr. Hari Krishna Laudari, Assistant Forest Officer, Ministry of Forests and Soil Conservation, Nepal.

- i) Mr. Ngwe Thee, Assistant Director from Forest Department asked about contribution of Forestry Sector in ERPA (emission reduction payment agreement) which amount up to ER 36 Mt CO<sub>2</sub>. The presenter responded that all is from Forestry sector. Mr. Ngwe Thee continued questioning on price of carbon stated in agreement. Dr. Bhaskar answered that the price is not mentioned in the agreement yet.
- ii) Prof. Tek added the price of carbon situation from REDD+ in Nepal and benefit sharing mechanism in CF in Nepal.
- iii) Mr. Min Myat Aung, Assistant Director from Environmental Conservation Department asked about the management issues for forestry to maintain forest cover in Nepal. The presenter explained community based forest management in Nepal in order to maintain forest cover.

## 2. India's experience in REDD+ supporting SDGs and NDCs



Dr. R.S.C Jayaraj, Director of Rain Forest Research Institute, shared India's experience in REDD+ supporting SDGs and NDCs. Firstly, he explained India's focus on SDGs which is identified by High Level Political Forum of India. Then he continued explaining India's progress in SDGs. He mentioned the activities implemented for fulfilling each focused SDG. After that, he described India's Nationally Determined Contribution and its targets. For meeting the targets of INDC, he explained developed strategies for mitigation and adaptation including funding sources and policies. He then highlighted the India's GHG profile over time and changes of carbon stock in forests during 2011-2017. Lastly, he pointed out synergies among SDGs, REDD+ and NDC of India. Discussion include:

- i) Mr. Myo Ko Ko, Social Worker, POINT- Promotion of Indigenous & Nature Together, asked the presenter about sharing Genetic Resources & Benefit Sharing Mechanism. The presenter responded that now is Bill development, Benefit Sharing is only for CF. REDD is New and the Bill is now in Parliament for approval.
- ii) Mr. Min Myat Aung, Assistant Director, ECD, asked the source of National Adaptation Fund (USD 55.6 million). The presenter responded that USD 2.5 trillion for 2015- 2030 is from international community.

iii) Mr. Timothy Boyle, Chief Technical Advisor, UN-REDD Programme, discussed about how LPG Access was increased so much in so short a time.

### 3. Nepal's Community Forestry (CF) and its Contribution to NDC, REDD+ and Sustainable Development Goals



Mr. Prakash Lamsal, Community Forestry Development Officer, Ministry of Forests and Soil Conservation, Nepal presented **“Nepal's Community Forestry (CF) and its Contribution to NDC, REDD+ and Sustainable Development Goals”**. He explained the current status of Nepal related to population, governance, and major geographical division. He described Forests and Forestry Facts. The forest cover in Nepal is about 44.74 % of land area. From which, it is 40.36% for Forest and 04.38% for other wooded land (OWL). He also figured out Forest Cover by Geographic Region. It is rich in Biodiversity: genetic, species and ecosystems in Nepal. Moreover, he presented forest management regimes. They are National Forest, Protected Area, Forests in private and public land. 23.39% of country's area and 18% of forest area are assigned as Protected Areas. After that, he explained CF Planning Process and Governance. He expressed the CF planning which includes 11 steps, in which the first step is identification of national forests suitable for CF and the final step is

implementation. He also explained the DFO input and community input for planning the community forest, the role of Role of NGOs, CBOs, and multi-stakeholder Participation. He expressed the content element and process element contributing to CF Sustainability. In the content element, involves community institution, CF operational plan, policy and legal including Forest Act 1991, Forest Regulation 1995, Forest Policy 2014, CF Development Guidelines 2014 for harvesting and selling, CFUG Financial Guideline and Inventory Guideline 2005. Regular meeting, assemblies, regular monitoring, reporting, response and feedback, review and revision of constitution and operational plans, regular facilitation and regulatory report, these all are included in the process element. He also figured out the achievement of CBFM, where it reaches 94% for Community Forests, 2% for Leasehold Forests and 4% for Collaborative Forests. He also explained CF achievement and the role of CF in the face of climate change. CF Contributes to NDC and REDD+. CF offers NDC and REDD+ good governance, inclusive participation, strengthened actions of CFUGs. NDC, REDD+, and CF go on harmony, will produce synergy. CF, NDC and REDD+ are not only compatible but also fully compliment to each other. Besides, he also presented CBFM contributes to Social: Goals 1, 2, 5, Environmental: goals 6, 13, Economic: Goal 8, Life on Land: Goal 15, enabling institutions: Goal 16, 17. Likewise, he presented CBFM Contribute directly to 10 Goals and indirectly to other. Not only that, he also pointed out CBFM issues and way forward. At the end of his presentation, he described that CF is not only the best viable regime for SFM but also fully compatible for attaining Nepal's NDC, REDD+, reduce vulnerability and increase ecosystem and community resilience. Moreover, CF contributes directly to 10 and indirectly to 16 SDGs. Hence, CF's progress and outcomes are an asset to contribute to the SDGs. CF is not free from limitations. Therefore, he recommended Policy makers have to listen to the voice of research, academia and communities to make CF Compatible with market forces, enterprise development and job creation.

After presentation, the following questions are asked to Mr. Prakash Lamsal, Community Forestry Development Officer, Ministry of Forests and Soil Conservation, Nepal.

- i) Dr. Thaug Naing Oo, Director, National REDD+ Focal, Forest Research Institute, Forest Department asked about the way of solving the leakage issues. It was responded that systematic forest management not only in REDD+ Project Site, but also outside REDD+ Project Area and ensuring law enforcement in both areas and also apply Community Forestry as a way.
- ii) Dr. Phyu Phyu Lwin, Staff Officer from Forest Research Institute asked about explanation of CF, Collaboration Forest, Leasehold Forest, and State Forest. The presenter explained nature of each forest management type of Nepal.
- iii) Mr. Mg Mg Lwin, Deputy Director from Planning Department asked about the percentage (%) of forestry section contributes to the economic growth of Nepal. It was answered that 5% of CF value integrated into Agriculture sector. Agriculture sector contributed 30% of economic growth.

## Session IV: REDD+, SFM, biodiversity and stakeholders participation



The session was chaired by Dr. Thaung Naing Oo Director, National REDD+ Focal, Forest Department. The session includes the following topics:

1. Biodiversity Monitoring Protocol for REDD+ by Mr. Nabin Bhattarai, Regional REDD Associate, ICIMOD.
2. Assessment and Monitoring Flora and Fauna in Pindaya, Shan State by Dr. Mu Mu Aung , Research Officer from Forest Research Institute
3. National Forest Monitoring Systems and Forest Reference Emission Level in Myanmar by U Khaing Zaw Win, Staff Officer, Forest Department from Myanmar.

## 1. Biodiversity Monitoring protocol for REDD+



Mr. Nabin Bhattarai, Regional REDD Associate, ICIMOD from Nepal presented **“Biodiversity Monitoring Protocol for REDD+”**. Firstly, he talked about the role of REDD+. REDD + offers expectations for biodiversity conservation, as a co-benefit of protection forests to reduce carbon emissions. As Nepal in its submission to UNFCCC on March 2013, it recognizes non-carbon benefits when REDD+ activities are implemented with safeguards. They are enhancement of local livelihoods, increase in the value of biodiversity, better ecosystem services to people and environment, more resilient ecosystems for climate change adaptation, improved governance, institutional setup and policies for natural resource management at local to national levels, and contributions to MEAs. And then, he explained Scope of BMP in which Cancun safeguard recognizes the need for safeguards to address biodiversity conservation, however, none of the standards currently proposed include significant guidance on biodiversity monitoring. There is a need for a rigorous framework and guideline possible to ensure that the biodiversity concerns are incorporated into national REDD+ projects and the stated goals of biodiversity conservation are met with appropriate regard to the well-established ecological principles and experiences. Monitoring the biodiversity impact of REDD+ can help ensure that risks are mitigated and benefits achieved. Additionally, the results of monitoring may help

in demonstrating compliance with international conventions and agreements. He also described the linkage with SDG 15: LIFE ON LAND. After that, he presented the biodiversity level, which of area of interest and the key priorities. These levels are landscape level, ecosystem level, species level and genetic level. And then, he explained Biodiversity Monitoring Approach. These are: Remote Sensing & Geographic Information System, Participatory Biodiversity Monitoring, Biodiversity Monitoring Using Permanent Plots, and Periodic Biodiversity Monitoring. He described the methods for Floral Diversity Assessment, and Faunal Biodiversity Monitoring Methods for large mammals, small mammals, avian species, butterflies, moths and other Insects, and aquatic diversity. Moreover, He also presented institutional arrangement for biodiversity monitoring. The overall REDD programmes are coordinated by REDD Implementation Centre (RIC). Therefore it is suggested that while RIC is in charge of the overall REDD programme, the biodiversity monitoring aspect particularly can be given to DNPWC for leading the monitoring work in partnership with other institutions such as NTNC and WWF. In addition, he also expressed quality assurance and quality control. As concluded, he figured out the amount of some observations such as birds, butterflies, mammals-bats, reptiles, and amphibians from piloting where Rambhori/Bhata, Kamini Daha and Halkhoria area of Parsa National Park.

After presentation, the following questions are asked to Mr. Nabin Bhattarai, Regional REDD Associate, ICIMOD.

- i) Mr. Ngwe Thee, Assistant Director from Forest Department asked about analysis of policy measures for biodiversity in REDD+. The presenter responded that it is a part of safeguard in REDD+.
- ii) Dr. Nyein Chan, Lecturer, University of Forestry & Science asked about the reason of choosing only summer” for some categories of biodiversity. The presenter answered that it is based on the common nature of biodiversity.

## 2. Assessment and Monitoring Flora and Fauna, Pyintaya, Shan State



Dr. Mu Mu Aung, Assistant Director, Forest Research Institute, Myanmar, presented **“Assessment and Monitoring of Flora and Fauna in Pindaya Area”**. First of all, she explained the background of Myanmar, the purpose of the research, Floristic Information and Phytogeographic view of Myanmar and its surrounding regions. And then she pointed out the location, background and vegetation of Pindaya, which is located in Southern Shan State of Myanmar. This study is one of the self-administrative zones called Danu. It has Pwe Hla Lake, Shauk Pin Monastery Forest Area, Nan Kone Community Forest, and Shar Pyar Community Forest. Local communities secure livelihood from crop cultivation, wages from employment in land based occupations and livestock husbandry. These objectives for the research are to clarify the species diversity and make the checklist of the flora and fauna of Pindaya Area, to understand the vegetation and their habitat of study area, to investigate the ecological interrelationship within and among species, and to assess the contributions of the study area to the livelihood of the local people. Moreover, she described a standardized belt-transect method to record all vascular plants within 100×5 m, and to record Height and DBH for trees above 4 m tall. She presented the

vegetation sampling and diversity analysis. She explained the equations used for diversity analysis in details. She described identification of flora species and medicinal plants used by local people. She explained the methodology for bird and butterfly survey. And, She presented the identification of fauna species and bird diversity and butterfly diversity. She talked about biodiversity conservation of Nan Kone Community Forest and Shauk Pin Monastery Forest. These forests are conserved and protected by monks, village tracts and local community. They don't allow to cut trees and to kill animals. . They formulate internal rules for conserving the forest and protecting animals. But, they allow to cut trees for social affairs (donation, wedding, etc), and they give punishment for collecting/ cutting trees for other purposes or hunting. In addition, she presented the biodiversity conservation in Shar Pyar Community Forest and Pwe Hla Community Forest. These forests are conserved and protected by villager tracts and local community. The villagers don't have the awareness of fauna conservation. They formulate internal rules for conserving the forest especially water resource. They give punishment for collecting/ cutting trees. After that, she expressed the expected outputs of the research. In the end of her presentation, Flora and Fauna Survey should be done three seasons especially winter and summer seasons. It needs to take extension on the conservation of rare and endangered flora and fauna species. It needs to enhance the involvement of the youth in the biodiversity conservation. Many new records of the species are still to be expected from the study area. It needs to carry out further seasonal inventories and accurately know the species diversity as reliable baseline information. And, further continuous field works will provide the good materials towards the Flora and Fauna of Myanmar.

After presentation, the following questions are asked to Dr. Mu Mu Aung, Assistant Director, Forest Research Institute, Myanmar.

- i) Mr. Mg Mg Lwin, Deputy Director from Planning Department asked about Peaforl is one of the endangered species of IUCN RED List (Yes or No). The presenter responded that it is not sure that it is under IUCN RED List or not.

### 3. Current Status of NFMS and Initial FREL of Myanmar



Mr. Khine Zaw Win, staff Officer, shared the current status of National Forest Monitoring System (NFMS) and Forest Reference Emission Level (FREL) of Myanmar. He introduced firstly the forest management levels in Myanmar ranging from district to the national level. Then, he explained the current status of NFMS and methodology used in calculating the activity data and inventory data. He then linked to NFMS to REDD+ which is mentioned in REDD+ readiness roadmap. He highlighted the recently submitted Initial Forest Reference Emission Level (FREL of Myanmar) to UNFCCC. He explained the definition, objectives, scale and scope of FREL for Myanmar context. He presented limitation of working on forest cover data, the resulted estimate FREL and targeted FREL enhancement. He concluded his presentation with challenges in forest resource monitoring and way forward of Myanmar REDD+ MRV system.

During discussion,

- i) Mr. Timmothy Boyle, Chief Technical Advisor, UN-REDD Programme, asked the presenter why the Myanmar definition of “forest” excludes land that is temporarily de-stocked for which land use continues to be forest.

## Session V: REDD+ , CF and Safeguards



The session was chaired by Dr. Tek Maraseni, Associate Professor, University of Southern Queensland, Australia, and co-chaired by Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative, ICIMOD, Nepal. The following topics were presented under the session.

1. Drivers of Deforestation and Forest Degradation in Shan State, Myanmar by Aung Aung Myint, National Consultant, Myanmar
2. An assessment of governance quality and development of “verifiers” for key governance indicators for community based forest management regimes in Hindu Kush Himalayan Region by Dr. Tek Maraseni, Associate Professor, University of Southern Queensland, Australia
3. Building Timber Value Chains for REDD+: The timber value chain in Myanmar & its compatibility with REDD+ by Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative, International Centre for Integrated Mountain Development, Kathmandu, Nepal.
4. Contribution of Community Forestry; SuComFor Project Research to SDGs and NDC by Ms. Khin Thiri Htun, Monitoring and Evaluation Consultant, RECOFTC Myanmar Country Program by Ms. Khin Thiri Htun, Project Assistant, RECOFTC Myanmar Country Program.

5. Indigenous Rights and Safeguards in REDD+ by Mrs. Naw Ei Ei Min, POINT (Promotion of Indigenous and Nature Together)
6. Mapping natural capital in Myanmar strengthening the argument for conservation by Mrs. Hanna Hersingen
7. Gap Analysis in Line with the National REDD+ Readiness Process in Shan State by Daw Su Mon San, Range Officer, Forest Research Institute.

#### **1. Drivers of Deforestation and Forest Degradation in Shan State, Myanmar**



Mr. Aung Aung Myint, National Consultant, Myanmar presented Drivers of Deforestation and Forest Degradation in Shan State, Myanmar. At the beginning of his presentation, he mentioned the objectives of the study: mainly focus on direct and indirect drivers and agents of deforestation and forest degradation, challenges for sustainable forest management, strategic options and key interventions for REDD+ policies and measures. He highlighted land use changes of Shan State between 2005 and 2015 by dividing 4 or 6 categories. He also described southern and northern Shan State has higher conversion from forest to non-forest than eastern and vice versa in conversion from non-forest to

forest. He calculated the carbon emission in Shan State by using NDVI values where it is 6.86 mt/yr from 2005 to 2015. Then he pointed out overexploitation of timber (legal and illegal logging), fuelwood consumption and forest fire as direct deforestation and forest degradation; and population growth, economic growth, weak of law enforcement, poverty and subsistence, conflicting policy, language barriers, land tenure uncertainty and inadequate Natural Resource planning and monitoring as indirect, and explained in detail with bar charts. Therefore, he compared actual production and AAC production of Teak and other hardwoods. At the end of his presentation, he mentioned detailed strategic options for addressing deforestation and forest degradation and SWOT analysis for the most prioritized Strategic Options.

i) Dr. Nyein Chan, Assistant Professor from University of Forestry and Environmental Science asked “What is the transaction for forest increasing in some parts of Shan State during 2010-2015?”. It was answered that Rubber plantations were established.

**2. An assessment of governance quality and development of “verifiers” for key governance indicators for community based forest management regimes in Hindu Kush Himalayan Region**



Dr. Tek Maraseni, Associate Professor, University of Southern Queensland, Australia presented an assessment of governance quality and development of “verifiers” for key governance indicators for community based forest management regimes in Hindu Kush Himalayan Region. In his presentation, he firstly introduced REDD+ is a potential way for climate change problem especially for developing countries. Several REDD+ pilot projects are being conducted in community forests to provide guidance for policy makers. A lot of surveys about these pilot projects were conducted where it was found that every project/programme has various structures and processes (governance). Then, he explained deeply normative framework of principles, criteria and indicators for evaluating governance quality. He talked about the results of the governance study in Nepal, Bhutan, India and Myanmar where Myanmar and Bhutan have best performance at local level; Nepal and Indian have a relatively similar score for local and national levels. At the end of the presentation, he concluded and recommended as follow:

- There is huge variation in perceptions/scores of governance quality among the countries
- Even within the same country, different levels have different scores
- At Indicator level, in all countries, “Resources” received lowest score whereas “Durability” received highest score
- In each country, various levels have different priorities for ‘Indicators’. For M&R social and environmental safeguards, highest-ranked indicators should not be missed
- If resources are not enough to cover all indicators, select only those indicators which are important at that level
- For consistency reasons, if we want to cover whole countries with the same indicators, select highest-ranked 4 or 5 indicators.

During discussion,

i) Mr. Prakash Lamsal, Government Service from Ministry of Forests and Soil Conservation, Nepal commented on the presentation that the comparing level of governance regarding CF in different countries have different regulations and

rules so that it is needed to consider differences of potential challenges in different countries.

### 3. Building Timber Value Chains for REDD+: The timber value chain in Myanmar & its compatibility with REDD+



Dr. Bhaskar Singh Karky, Programme Coordinator, REDD+ Initiative, International Centre for Integrated Mountain Development, Kathmandu, Nepal, presented Building Timber Value Chains for REDD+: The timber value chain in Myanmar and its compatibility with REDD+.

In his presentation, he introduced the objective of the study: to assess the compatibility of the timber value chain with REDD+ in Myanmar and a classic approach to value chain analysis. In Myanmar, all teak comes from Permanent Forest Estate managed by Forest Department using the MSS; Myanmar Timber Enterprise (MTE) extract and allocated timber; the value chain is export oriented ( $\approx 70 - 80\%$  goes to international market). He deeply explained the distribution pattern of teak timber and determination and decomposition of consumer price benefits. For concerning value chain governance, he pointed out that both legislative and judicial governance roles are performed by MTE taking all

decisions on timber trade where MTE is the most powerful and influential actor in the value chain. He highlighted the facts that are compatible with REDD+ and weaknesses, opportunities and threats for timber value chain. He concluded as follow:

- The timber value chain is export-oriented/dominated by export traders.
- Hierarchical and relational characteristics are exhibited.
- Policy measures and reforms for sustainability, efficiency, equity and REDD+ compatibility are needed.

Discussion was enriched with the following questions:

- i) Dr. Nyein Chan, Assistant Professor from University of Forestry and Environmental Science, commented that apart from official legal way, illegal way for timber value chains should be considered to become completed.
- ii) Ms. Khin Moe Kyi, Training Coordinator, RECOFTC Myanmar Country Program, asked the presenter's opinion to enhance benefit for local community from timber value chains for our country. The presenter responded that Raw material based, stakeholders based, and equitable based forest utilization is more suitable to improve benefits.

#### **4. Contribution of Community Forestry; SuComFor Project Research to SDGs and NDC**



Ms. Khin Thiri Htun, Project Assistant, RECOFTC Myanmar Country Program, presented the contribution of community forestry ; SuComFor Project Research to SDGs and NDC. At first, she introduced the project objective: to be more effective institutions and resources for scaling up community forestry in Myanmar and project outcomes: 1) legally approved and adequately trained CF groups ; 2) successful CF groups in conserving forest areas and maintaining environmental services ; 3) producing and sharing livelihood benefits from forests by CF groups ; 4) exercising operational CF networks and policy influence and knowledge sharing; and 5) aligning CF policy fully with relevant national strategies. For SuComFor Project, they are running five components : 1) CF training program, 2) CF development, 3) CF information management and communication, 4) CF networks and learning groups, and 5) CF policy and legal framework development. At last, She concluded how CF play in achieving in the SDGs and NDC.

- i) Mr. Timmothy Boyle, Chief Technical Advisor, UN-REDD Programme asked why % of women in training is usually low and how to scale up from project to programmatic approach. Ms Khin Moe Kyi responded that “Forestry is male dominant institution and it is not familiar with women leading in forestry related activities. Women also face challenges to go out from their comfort zone. It is needed capacity building program to enhance women participation.” For the second question, there are three approaches to support a program: a) work with local organizations to be able to monitor or guide continuously; b) set up network across the townships that aim to extend continuous learning and sharing about CF with other regions; c) develop existing strategies at different levels after the project.

## 5. Indigenous Rights and Safeguards in REDD+ by Mrs. Naw Ei Ei Min, POINT (Promotion of Indigenous and Nature Together)



Mrs. Naw Ei Ei Min, POINT (Promotion of Indigenous and Nature Together) presented indigenous rights and safeguards in REDD+. At the beginning of her presentation, she highlighted Social and Environmental Safeguards for REDD+ programme in Myanmar. She talked about that countries are encouraged to promote and support these safeguards and are responsible for establishing a national safeguard information system (SIS) that will transparently document. Countries must also periodically report their status on respecting the safeguards to the UNFCCC. She explained the role of indigenous people in the SDGs and what they want and IP rights in NDC. In her conclusion, she mentioned some recommendations for equitable and effective implementation of Myanmar's NDC in line with the Paris Agreement as follow:

- Include commitments in the NDC to recognize the rights of indigenous peoples and local communities, women, and other vulnerable or marginalized groups in all climate change mitigation and adaptation actions

- Ensure the full and effective participation of these groups, including indigenous peoples, local communities, and women, in the development and implementation of the NDC.
- Establish a national-level platform for local communities and indigenous peoples to share knowledge, skills, and technology, to help shape the development and implementation of the NDC, and to coordinate with the equivalent UNFCCC international platform that was established in COP21.
- Coordinate targets, strategies, and mechanisms within the forest sector (including REDD+, EITI, and FLEGT), the energy sector, and across sectors.

## 6. Mapping natural capital in Myanmar strengthening the argument for conservation



Mrs. Hanna Hersingen, manager, WWF, presented mapping natural capital in Myanmar strengthening the argument for conservation. He firstly introduced that natural habitat provides clean drinking water and reduce risk of flood; natural areas provide many benefits to people and habitat for wildlife; so it is more important for conserving these areas. He explained the relationship between distance to road and area deforested. It was found that one third of all deforestation in Myanmar occurred within 5 km of a road affecting natural capitals along roads. He suggested that upland landscapes and ecosystems reduce

flood risk by slowing or reducing water flows from surrounding land and can impact BRI roads. At the end of his presentation, he concluded the presentation with upstream challenge: 1) use information on ecosystem services and biodiversity as basis for development planning; 2) locate infrastructure and other development in areas less damaging to people, nature and economy; 3) development benefits people, economy and nature; and 4) Myanmar's forests protected and valued.

#### 7. Gap Analysis in Line with the National REDD+ Readiness Process in Shan State



Ms. Su Mon San, Range Officer, from Forest Research Institute, presented “Gap Analysis in Line with the National REDD+ Readiness Process in Shan State”. She firstly explained the rationale of the study, objectives and methodology of the study. She said that the relevant strategies, policies and laws and institutions were reviewed to find out gaps for REDD+ implementation at sub-national level and the resulted gaps were discussed though a series of consultation meetings. She named the selected strategies, policies and laws and pointed out the finding

gaps for REDD+ implementation. As conclusion, she highlighted key findings of the gap analysis research.

During discussion,

- i) Mr. Tim added the current activities which has already fulfilled the gaps of REDD+ for sub- national implementation.
- ii) Daw Khin Moe Kyi, Training Coordinator from RECOFTC suggested that gap analysis for the linkage of CF of REDD+ should also be done.
- iii) Naw Ei Ei Min, Director of POINT also commented that analysis of relationship/ coordination between REDD+ and FLEGT should also be done.
- iv) Myo Ko Ko, social Worker from POINT-Promotion of Indigenous and Nature Together asked that gap analysis with REDD+ and FLEGT and also NDC were done or not. It was responded that it was not done yet.

## Session VI: Panel discussion

### The way forward for development of REDD+ in the context of supporting SDGs and NDC



Panel discussion was facilitated by My Bhaskar karky and panelists include Dr. Thuang , Tim, Hanna, Dr. Myat Su Mon and Prof. Dr. Tek Maraseni, Mr. Bhaskar karky briefly highlighted how REDD+, SDGs and NDC are linked and he asked to the panelists to share what they learned during these two days workshops to the audiences.

Mr. Timothy responded that it is very important to understand how to link REDD+ with SDGs and NDC. He has been working on how much Reduction emission going on from a certain area. He explained about Task force from UNREDD program. It is responsible to see what constitutions are existed for REDD+ in Myanmar and for overseeing REDD+ related project implementation and make decision on this. He mentioned that in Myanmar, it has very high risk of aggressive inflation rate and conflict level. So that, he gave his main message through the workshop is realizing how important REDD+ is and how big challenging REDD+ implementation, especially to make sure all human

resources, financial resource and all energies we put are delivered in an effective and efficient way.

Dr. Karky summarized Tim's main messages and continued asking Dr. Myat Su Mon about her opinion on integration of NDCs, SDGs and REDD+ together, and feasibility and best way for coordination among line ministries and agencies for implementing to meet those targets together.

Dr. Myat Su Mon explained from MRV view that REDD+ is very much linked to Sustainable forest Management. She mentioned about recent activity of submitting FREL and second national communication which is important national commitment to international communities. She explained that implementing NDC is forestry sector target and how REDD+ MRV and SNC is in line with NDC. She expressed that "In REDD+, performance and achievement of every activities at national as well as sub-national level is important to be focused. Forestry sector already have set management system at different level. So implement together will be beneficial as all are linked each other. In Myanmar, line departments are implementing based on different TORs although all have the same goal of climate change mitigation and adaptation. Therefore, clear TORs for each department should be developed for effective implementation. To highlight, REDD+ activities need to be implemented in order to sustainable development."

Dr. Karky then requested Dr. Thaung Naing Oo to explain how important research development and national strategy is for REDD+ implementation and NDCs based in context of REDD+ in Myanmar.

Dr. Thaung Naing Oo responded that "In case of NDC, to achieve NDCs in forestry sector, Reserved Forest (RF), Protected Public Forest (PPF) under Permanent Forest Estates are targeted to be expanded. For eg, reservation of PPF and RF, we have settlement procedures, one is to get consent of communities in proposed area, we need facilitation and communication, we have lots have human related issues . We need researches studying how to solve those issues as it is very hard to achieve the target without research". He continued that "we can't give quantitative commitment in NDC as we have limited data related to

emission. Environmental Conservation Department is coordinating to receive information of emission. In that case also we need researches to have reliable data related to GHG, emission from land use change and deforestation and forest degradation.” He highlighted that SDGs, many goals area related to Forestry sector and a comprehensive roadmap or plan mentioning how to achieve SDGs as well as NDCs is still lacking in Myanmar.

Dr. Karky continued then questioning to Ms. Hanna that by considering safeguard information systems such as environmental safeguards and social safeguards, how biodiversity conservation mingle between SDGs, CBD, NDC and REDD+ and meets international standards and requirements of those together.

Ms. Hanna responded that through the workshop, she realized that lots of activities are going on and trying to achieve the same goal. However, she perceived that it needs more alignment among strategies and should operate with better coordination. She also thinks that there is still limited consideration of value from biodiversity conservation and ecosystem services. She suggested developing strategies and planning should also consider value from biodiversity conservation and ecosystem services in implementing SDG, NDC and REDD+ together and in a comprehensive way. She sees recently circulated sustainable development plan as an opportunity to align different policies together. Although it is challenging to implement as an integrated approach, she assumes that there will be more coordination opportunities in the future.

Dr. Karky asked Prof. Dr. Tek how do he see significance of governance changes in forestry sector of partner countries in the region and how it effects on REDD+ and how important it is for REDD+, SDGs, and NDCs. Dr. Tek expressed the answer by seeing from global perspective. He gave an example of china case and explained benefits of overseeing the larger goals and implementing as an integrated approach. He encouraged each country to implement REDD+ as an integrated approach to meeting SDGs and NDCs.

After hearing personal opinion of each panelist, Dr. Karky opened the floor for the audience.

- i) Mr. Aung Nay lin questioned that only MoNREC cannot implement REDD+ activities. In Myanmar, Coordination and collaboration is important. How can it be increased?
- ii) Dr. Thaung Naing Oo responded his question by explaining importance of coordination among ling departments in implementing REDD+ activities. Furthermore, he highlighted the need of international support for financing REDD+ activities.
- iii) Daw Naw Ei Ei Min questioned the importance of peace especially in boarder areas in REDD+ implementation.
- iv) Mr. Timothy responded her by explaining REDD+ strategy in relation with drivers of deforestation and forest degradation at national as well as sub-national level and how to stop those drivers for the whole country. He explained the importance of understanding conflicts in REDD+ implementation and mentioned that negotiating with local authorities or groups in natural resource management for REDD+ has already initiated.
- v) Ms. Hanna added how peace by implementing national cease fire is important in achieving REDD+, SDGs and NDCs.
- vi) Daw Khin Moe Kyi raised questions to the panelists. They are: How to improve governance of forest at community level for successful REDD+ implementation? And A part from CF, is there any mechanism to ensure customary land rights in REDD+ strategy?
- vii) Mr. Hari Krishna Laudari, Assistant Forest Officer from Ministry of Forests and Soil Conservation, Nepal questioned on how to enhance the bargaining power of REDD+ countries on carbon.
- viii) Mr. Tim explained about nature of community forestry in relation to result based payment of REDD+ based on global experiences. He highlighted that Myanmar still need to develop how to distribute benefits of result based payment of REDD+ to community level.
- ix) Dr. RSC Jayaraj, Director of Rain Forest Research Institute, India, commented that in view of the variation in contribution of REDD+,

objectives to SDGs 3 NDC targets, sub-national Action Plans need to be prepared for REDD+ in India for those States/ Areas which are useful and contribution to REDD+ and SDGs/ NDCs is substantial. Following this, a large number of small REDD+ projects with homogenous groups/ villages/ communities need to be prepared and implemented.

## Session VII: Closing Ceremony

The workshop was concluded with the closing remark by Dr. Thaung Naing Oo, Director of Forest Research Institute of Forest Department, Ministry of Natural Resources and Environmental Conservation. First of all, he extended his warmest greeting and expressed his thanks to distinguished colleagues from ICIMOD, Nepal, India, Australia, UN-REDD program, POINT, RECOFTC, WWF, Universities, Academic Institutions and line ministries for full and effective participation, and constructive and fulfilled discussion at the “Regional Workshop on Role of REDD+ in supporting NDC and SDGs. He pointed out how to scale up Myanmar’s REDD+ programs linking to other global initiatives like SDGs, landscape restoration and other activities.



He mentioned as follows: “Nowadays, Myanmar, one of the developing countries, faces so many challenges related to environmental and natural resource sectors. As our country, legal framework, policies and long term and short term plans have been already formulated but it still has many weaknesses such as techniques, finance, and coordination among related stakeholders including government and non-government institutions. Myanmar is facing many issues such as governance affecting natural resource management. Other

challenges come from internal affairs while coming from outside. However, we are trying to fulfill the requirements of the country in line with the global needs like SDGs. Government cannot do alone and need a good strategy: organizing private sectors, CSOs, NGOs for respective goals in order to achieve the sustainable development goals. Apart from MDGS, SDGs have very good targets, criteria, indicators, and principals of MDGs but for the developing countries, it is difficult to follow and hard to achieve. We need to strengthen, work together, coordinate each other for not only SDGs and NDC but also REDD+ and other natural resource management systems. For REDD+, we are trying the best to expend our communication and working networks to achieve our targets: not only carbon credit but also co-benefits and ecosystem services. For these cases, we have prepared some kinds of strategies draft and then will fully implement the strategies, policy and measures for the national level there by applying on the ground. Behalf of our Director General, he expressed his sincere thanks to all resource persons, participants and GIZ for their great efforts and contributions that made Regional Workshop on Role of REDD+ in supporting NDC and SDGs great success.”

## Annex 1: Agenda of Regional Workshop on “Role of REDD+ in supporting SDGs and NDC”

Day 1: 21 February 2018		
Time	Session	
08:00-08:30	Registration	
08:30-10:00	Session I: Opening Session	
	Opening speech	Dr. Nyi Nyi Kyaw, Director General, Forest Department MONREC
	Congratulatory remark	Dr. Bhaskar Karky, Programme Coordinator, REDD+ Initiative, ICIMOD, Nepal
10:00-10:30	Group Photo session & Refreshment	
	Session II: Role of REDD+ in supporting SDGs and NDC	Chair – U Kyaw Kyaw Lwin, Deputy Director General, Forest Department
10:30-11:00	Climate Change Policy, Strategy and Action Plans to to Contribute SDGs and NDC Discussion	U Min Myat Aung, Assistant Director, Environmental Conservation Department
11:00-11:30	Development of REDD+ in the frame of SDGs and NDC Discussion	Mr. Timothy Boyle, Chief Technical Advisor UN-REDD Programme
11:30-12:00	Myanmar experience in REDD+ supporting SDGs and NDC Discussion	Dr. Thaung Naing Oo Director, National REDD+ Focal, Forest Department
12:00-13:00	Lunch	
	Session III: Experience sharing of Regional countries on Role of REDD+ in supporting SDGs and NDC	Chair – Dr. Bhaskar Singh Karky, Program Coordinator, REDD+

		Initiative, ICIMOD
13:00-13:30	Nepal's REDD+ and SDGs & NDC Discussion	Mr. Hari Krishna Laudari, Assistant Forest Officer, Ministry of Forests and Soil Conservation, Nepal
13:30-14:00	India experience in REDD+ supporting SDGs and NDC Discussion	Dr. RSC Jayaraj, Director, Rain Forest Research Institute, India
14:00-14:30	Nepal experience in Community Forestry & its contribution to NDC and SDGs Discussion	Mr. Prakash Lamsal, Community Forestry Development Officer, Ministry of Forests and Soil Conservation, Nepal
14:30-15:00	Refreshment	
	Session IV: REDD+ , SFM, biodiversity and stakeholders participation	Chair: Dr. Thaung Naing Oo Director, National REDD+ Focal, Forest Department
15:00-15:30	Biodiversity Monitoring Protocol for REDD+ Discussion	Mr. Nabin Bhattarai, Regional REDD Associate, ICIMOD
15:30-16:00	Assessment and Monitoring Flora and Fauna in Pindaya, Shan State Discussion	Dr. Mu Mu Aung Research Officer Forest Research Institute
16:00-16:30	National Forest Monitoring Systems and Forest Reference Emission Level in Myanmar Discussion	U Khaing Zaw Win, Staff Officer, Forest Department
18:00-20:30	Welcome Dinner for Speakers and International Participants	
Day 2: 22 February 2018		
	Session V: REDD+ , CF and Safeguards	Chair – Dr. Tek Maraseni, Associate Professor, University of Southern

		Queensland, Australia.
09:00-09:30	Drivers of deforestation and forest degradation in Shan State, Myanmar in the context of REDD+ Discussion	U Aung Aung Myint Consultant ICIMOD REDD+ Project
09:30-10:00	An assessment of governance quality and development of “verifiers” for key governance indicators for community based forest management regimes in Hindu Kush Himalayas Region Discussion	Dr. Tek Maraseni, Associate Professor, University of Southern Queensland, Australia
10:00-10:15	Refreshment	
10:15-10:45	Building Timber Value Chains for REDD+; The timber value chain in Myanmar & its compatibility with REDD+ Discussion	Dr. Bhaskar Karky, Programme Coordinator, REDD+ Initiative, ICIMOD
10:45-11:15	Contribution of CF; SuComFor Project Research to SDGs and NDC Discussion	Daw Khin Thiri Tun M&E Consultant RECOFTC
11:15-11:45	Indigenous Rights and Safeguards in REDD+ Discussion	Daw Naw Ei Ei Min Director POINT
11:45-12:15	REDD+ and Enhancing Natural Capital Discussion	Mrs. Hanna Hersingen Manager WWF
12:15-13:15	Lunch	
13:15-13:45	Gap analysis of REDD+ in Myanmar Discussion	Daw Su Mon San, Range Officer, Forest Research Institute
13:45-15:00	Session VI: Panel Discussion	

	The way forward for development of REDD+ in the context of supporting SDGs and NDC	<b>Moderator:</b> Dr. Bhaskar Karky <b>Panelists:</b> <ul style="list-style-type: none"> <li>❖ Mr. Timothy Boyle, UNREDD Programme</li> <li>❖ Dr. Thaung Naing Oo, FD</li> <li>❖ Dr. Myat Su Mon, FD</li> <li>❖ Dr. Tek Maraseni,</li> </ul>
15:00-15:30	Session VII: Closing Session	
	Closing Remarks	Dr. Nyi Nyi Kyaw Director General, FD Forest Department
	Congratulatory remark	Dr. Bhaskar Karky

## Annex 2: Regional Workshop on Role of REDD+ in Supporting SDGs and NDC Participant List

No	Name	Position	Department
1.	Dr. Thaung Naing Oo	Director	Forest Research Institute
2.	Mrs. Hanna Hersingen	Manager	WWF
3.	Dr. Bhaskar Karky	Programme Coordinator	ICIMOD
4.	Mr. Timothy Boyle	Chief Technical Advisor	UN REDD Programme
5.	Mr. Hari Krishna Laudari	Assistant Forest Officer	Ministry of Forests and Soil Conservation, Nepal
6.	Dr. R.S.C Jayaraj	Director	Rain Forest Research Institute, India
7.	Mr. Prakash Lamsal	Community Forestry Development Officer	Ministry of Forests and Soil Conservation, Nepal
8.	Mr. Nabin Bhattarai	Regional REDD+ Associate	ICIMOD
9.	Dr. Tek Maraseni	Associate Professor	University of Southern Queensland, Australia
10.	U Ko Ko Hlaing	Assistant Director	Ministry of Home Affairs
11.	U Tin Myo Aung	Staff Officer	Dry Zone Greening Department
12.	U Mg Mg Latt	Assistant Director	Survey Department
13.	U Than Naing Win	Staff Officer	Forest Department
14.	U Ngwe Thee	Assistant Director	Forest Department
15.	U Khine Zaw Wynn	Staff Officer	Forest Department
16.	Daw Hlaing Yamin Khin	Range Officer	Forest Department
17.	Dr. Mu Mu Aung	Research Officer	Forest Research Institute
18.	Daw Ei Thinzar Aung	Programme Assistant	BANCA
19.	Daw War War Tun	Assistant Director	Department of Agriculture
20.	Daw Aye Sandar Aung	Assistant Staff Officer	Department of Agriculture

21.	U Pyae Phyo Maung	Programme Assistant	Point
22.	U Ling Houg	Programme Coordinator	Point
23.	Dr. Phyu Phyu Lwin	Staff Officer	Forest Research Institute
24.	U Phyo Zin Mon Naing	Assistant Director	Forest Department
25.	U Thein Zaw Win	Communication Officer	UNREDD
26.	U Naing Linn Oo	Programme Assistant	FREDA
27.	Dr. Nyein Chan	Lecturer	UFES
28.	U Min Myat Aung	Assistant Director	Environmental Conservation Department
29.	U Hnin Aung San	Assistant Director	Forest Department
30.	U Zaw Oo	Programme Officer	ECCDI
31.	Daw Naw Ei Ei Minn	Director	POINT
32.	U Myo Ko Ko	Programme Manager	POINT
33.	U Nyein Chan-2	Staff Officer	Forest Department
34.	Dr. Shwe Mar Than	Deputy Director	Yezin Agriculture University
35.	Daw Shwe Lone	Research Assistant-3	Forest Research Institute
36.	U Aung Nay Lin	Manager	Myanmar Timber Enterprise
37.	U Win Oo Naing	Assistant Research Officer	Forest Research Institute
38.	U Aung Aung Myint	Consultant	WIF/ICIMOD
39.	U Aye Chan Maung	Range Officer	Forest Research Institute
40.	Dr. Cho Cho Myint	Research Assistant-2	Forest Research Institute
41.	U Mg Mg Lwin	Deputy Director	Forest Department
42.	Daw Thin Thitsar Kyaw	Project Assistant	UNREDD/FAO
43.	Daw May Thet Htoo	Range Officer	Forest Department
44.	Daw Phyu Phyu Swe	Research Assistant -2	Forest Research Institute
45.	Daw Swe Swe Tun	Assistant Research Officer	Forest Research Institute
46.	U Pyae Phyo Maung	Range Officer	Forest Department

47.	Daw Khin Moe Kyi	Training Coordinator	RECOFTC
48.	Daw Khin Thiri Htun	M & E Consultant	RECOFTC
49.	U Thein Saung	Staff Officer	Forest Research Institute
50.	U Zaw Min Aye	Range Officer	Forest Research Institute
51.	U Sitt Nyein Oo	Project Assistant	ICIMOD
52.	Daw Ei Wah Wah Thet	Project Assistant	ICIMOD
53.	U Moe Myint Thu	Research Assistant-3	Forest Research Institute
54.	U Htet Hnaung Khant	Research Assistant-3	Forest Research Institute

**Annex 3- Opening Speech to be delivered by Dr. Nyi Nyi Kyaw, Director General, Forest Department, Ministry of Natural Resources and Environmental Conservation at the Opening Ceremony of Regional Workshop on Role of REDD+ in supporting SDGs and NDC**

**21-2-2018 (08:30 AM)**

**Forest Research Institute, Yezin**

- Representatives from ICIMOD, Nepal, India and Australia,
- Officials from Forest Department and line Ministries,
- Representatives from CSOs and NGOs,
- Distinguished Guests, Ladies and Gentlemen,

A Very Good Morning,

First of all, I would like to extend my warmest welcome to you all. I am also wishing you all in physical and spiritual well-being. It is indeed my great honor and pleasure to deliver an opening speech for this occasion on “Regional Workshop on Role of REDD+ in supporting SDGs- Sustainable Development Goals and NDC- Nationally Determined Contributions” organized by Forest Department and ICIMOD in collaboration with Regional Countries, Nepal, Bhutan and India under REDD+ Himalayas Project.

I am delighted that this workshop has timely come out to be in line with the global efforts to combat the climate change impacts to be Sustainable Development through implementing Nationally Determined Contributions.

Ladies and gentlemen,

Taking this opportunity, I would like to briefly touch upon cooperation between our Ministry and ICIMOD - International Centre for Integrated Mountain Development. In Myanmar, a substantial part of the country is mountainous and covers roughly 42 % of the land area. More than 12 million people or 24% of the total population are living in the mountains. The Hindu

Kush Himalaya is the widest mountain chain in the world and located in areas of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar Nepal and Pakistan. Thus Myanmar joined ICIMOD in 1990 as a member country and Forest Department under the Ministry of Natural Resources and Environmental Conservation is represented in its Board of Governors as focal agency of Myanmar. Since then, we have been working together the activities under thematic areas of Biodiversity Conservation and Management, Land cover, REDD and Forest management and Capacity building training in order to support for development of an economically and environmentally sound ecosystem and to promote the livelihood and welfare of the mountain populations.

On-going ICIMOD REDD+ Project started in March 2016 aiming to strengthen capacity of the government staff as well as other relevant stakeholders and to develop instruments in preparation for REDD+ Readiness by undertaking and identifying gaps in the readiness phase.

The main activities are capacity building, awareness raising and identifying gaps regarding REDD+ implementation in Myanmar. On the other hand, the project is also designed to improve the capacity of local community in forest governance by setting up the Demonstration site at Pindaya Township in Shan State.

Ladies and gentlemen,

According to the FAO Forest Resources Assessment 2015, Myanmar has the third highest rate of deforestation in the world and has lost 1.3 million acres of forests between 2010 and 2015. In this regards, IPCC report (2007) estimated that greenhouse gases emissions from forestry sector as a result of deforestation and forest degradation was 17.4% of the total emissions from all sectors. It is apparent that deforestation and depletion of forest resources have direct impact on global climate change.

Recognizing the rapid rate of deforestation and forest degradation in the country, the government of Myanmar has committed to set aside the 30 % of the total country area as reserved forests and protected public forests, and another 10 % as

the Protected Areas. Those Nationally Determined Contributions (NDCs) will have to be fulfilled by the year 2030.

Moreover, in order for Myanmar to fulfill Sustainable Development Goals (SDGs) and to achieve sustainable development of the country, it needs to restructure the economy and finds out sustainable routes to the economic development. On the other such a mechanism should also encourage the sustainable development of the country without any hindrance to the rapidly growing economy.

Ladies and gentlemen,

REDD+, with its economic incentives for the conservation of forests, is a mechanism, which is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development.

Realizing the REDD+ as an innovative approach, Myanmar joined UN-REDD Programme in December 2011. Since then, REDD+ activities are accelerated with momentum and we were able to develop REDD+ Readiness Roadmap in June 2013 with the support of Norwegian government and UN-REDD Programme.

Now, we have been implementing the REDD+ Readiness Roadmap with the support of UN-REDD Programme at National level. At the same time, we have also been implementing pilot projects in cooperation with ICIMOD, ITTO, Korea Forest Service, FFPRI- Forest and Forest Product Research Institute, Japan, Asia Air Survey Co. Ltd and other development partners.

Ladies and Gentlemen,

Within this context, the role of forests are becoming increasingly important in global climate change agenda and REDD+ activities are also recognized as important component of the climate change mitigation options. For example, REDD+ related issues are considered as an important agenda of UNFCCC as well as global climate change summits.

New York Declaration on Forests which was declared during the United Nations Climate Summit held on 23 September 2014 in New York stated that reducing

emissions from deforestation and increasing forest restoration will be extremely important in limiting global warming to 2°C. For this, at least 50% of the rate of global deforestation will have to be reduced by 2020 and strive to end natural forest loss by 2030.

Nowadays, the Government of Myanmar has been promoting Green Economy Green Growth for the sustainable development of the country. Myanmar Climate Change Alliance (MCCA) was formed in October 2013 in order to handle climate change related issues effectively. Therefore, it is very important to take this opportunity for scaling up the REDD+ as a Green Growth approach at the national level.

In line with the national reform process, our Ministry have also been transforming from extractive industry to service economy. In this juncture, we should pay more attention upon our tasks for smooth and effective transition in achieving green economy in forestry sector.

As you all are aware, forests represent one of the largest and most cost-effective climate solutions available today. Sustainably managed and restored forests can contribute to climate change mitigation, economic growth, poverty alleviation, food security, climate resilience and biodiversity conservation. It can also help secure respect for the rights of forest dependent indigenous peoples, while promoting their participation in decision making. Since the REDD+ is cross-sectoral mechanism, all line ministries, NGOs, CSOs and relevant stakeholders are strongly encouraged to work together in order to achieve not only for climate change benefits but also for other ecosystem services.

Within this context, this Regional Workshop is organized aiming to identify possible ways to nest REDD+ within broader SDGs and NDCs, to exchange experiences on progress and challenges in REDD+ readiness phase in the region through south-south cooperation and to get feedback and suggestion from the regional REDD experts to synchronize REDD+ with SDG and NDC.

Experts from international organizations, government ministries, UN agencies and NGOs will be presenting a wide range of subjects related to REDD+ and Sustainable Development Goals and Nationally Determined Contributions. I

firmly believe that this Regional Workshop will provide invaluable recommendations and outcomes to support the successful implementation of Myanmar's REDD+ Roadmap in supporting Myanmar's SDGs and NDC.

Ladies and gentlemen,

In conclusion, I would like to express my sincere appreciation to GIZ for financial support and Dr. Bhaskar from ICIMOD for your continuous supports and facilitation for the successful organizing this Regional Workshop. I am also very grateful to all resource persons and participants from all international organizations, NGOs and line Ministries for their contributions and active participation. With this, I would like to encourage all participants to make utmost efforts and constructive discussions for the success of this Workshop.

I wish this workshop every success.

Thank you very much.

## Annex: 4- Presented papers

### *1. Linkage of Nepal's REDD+ to SDGs and NDC*

HK Laudari <sup>1</sup>

#### **Abstract**

Nepal has adopted inclusive, community-based and multi-stage approaches to REDD+. In addition, the country has developed multi-level REDD+ institutions, policy framework, and programs for ensuring robustness and legitimacy of REDD+ decisions/processes. Nepal has also incorporated range of emissions reduction programs in its national and sub-national REDD+ program, including ERPD, FIP, and REDD+ Himalaya. These REDD+ policy and measures make synergies to many of SDGs and targets of NDC. However, there still remain gaps in REDD+ policy and measure fronts, which is highly likely to widen synergies between REDD and SDGs & NDC. Since, many REDD+ related policy and measures, which are prerequisites for REDD+ process, are in a limited theme and coverage. To secure strong synergy between REDD+ program and SDGs & NDC, the country needs to upscale the REDD+ program to the entire country with adequate financing mechanism. Moreover, restructuring of REDD+ institutional framework, and development of benefit sharing mechanism and Safeguard Information System are also equally important to respond SDGs and NDC.

#### **Background**

Deforestation and forest degradation (D and FD) is one of the major sources of green house gases (GHGs) emissions in the world. To respond D and FD problem, the COP 13 of United Nations Framework Convention on Climate Change (UNFCCC) held at Bali in 2007 established REDD+ mechanism. REDD+ is a type of mechanism that provides readiness finance and conditional results-based payments to developing countries to reduce their GHGs emissions from deforestation and forest degradation (Bastos Lima et al., 2017).

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<sup>1</sup> REDD Implementation Centre, Nepal [hklaudari@gmail.com](mailto:hklaudari@gmail.com)

## Nepal's approaches to REDD+

Nepal showed interest in REDD+ by submitting Readiness Plan Idea Note (R-PIN) to Forest Carbon Partnership Facility (FCPF) of World Bank in 2008. The country has adopted a number of approaches for REDD+ process. For example, it has not only embraced an inclusive and participatory approach in REDD+, but also established vertical and horizontal institutions (figure 1) for ensuring robustness and legitimacy of REDD+ decisions in the country (Poudel et al., 2014).

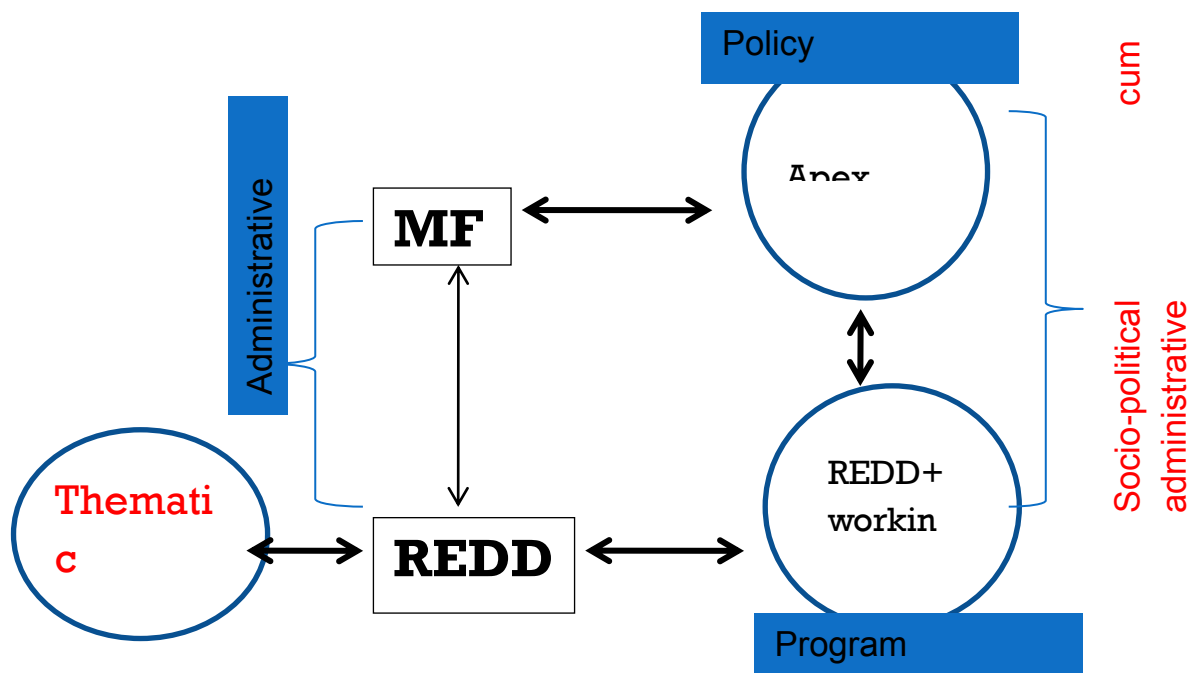


Figure . REDD+ institution in Nepal

In addition, the country has developed and implemented multiple REDD+ policies and measures at all level, which are build on the community-based model, including Community Forestry, Leasehold Forestry, Collaborative Forest, Religious Forest and Protected Forest. Some notable REDD+ policy instruments and frameworks that are developed at the national level are National REDD+ Strategy, National Forest Reference Level, and National Forest Information System. At the sub-national level, Emission Reduction Program Document (ERPD) along with its Forest Reference Level and Forest Investment Plan (FIP) has been developed. The major programs envisioned in ERPD and FIP are, Sustainable Forest Management (SFM), Alternative energy including Biogas and Improved cooking stove (ICS), Private and Leasehold forest development, an

incentive program to the private sector, Nature-based tourism, and promotion of forest-based enterprise. Nearly 176 million USD is required to implement all the activities envisioned in ERPD program, which will in turn reduce 29 MtCO<sub>2e</sub> emissions within 10 years time period. Out of it, 14 MtCO<sub>2e</sub> emissions reduction will be sold to the FCFP's carbon fund. The FIP, on the other hand, is a complimentary program to REDD+ (and partly linked with ER program), which has a potential to reduce 1.5 MtCO<sub>2e</sub> emissions over 8 years (from 2018-2025) period. Nearly 15 MtCO<sub>2e</sub> and 1.5 MtCO<sub>2e</sub> emissions reduction respectively from ERP and FIP will be used as emissions reduction contribution to Nationally Determined Contribution (NDC) of the country.

In addition to national and sub-national REDD+ activities, Nepal has also institutionalized REDD+ process at the local level by implementing a number of REDD+ intervention packages. REDD+ Himalaya Project (funded by ICIMOD) has been able both to enhance the capacities of stakeholders on REDD+ and to set up REDD+ institutions- District REDD+ working group at the local level.

#### **Linkage of Nepal's REDD+ to SDGs**

The UN developed 17 sustainable development goals (SDGs) in late 2015 to provide the strategic framework to the world's development activities. Every SDG are intertwined with other SDG, meaning that achievement of a particular SDG helps to achieve another one. In this perspective, we can't explicitly say that particular REDD+ activity of the country help in achieving only one SDG, rather it has multiplier effects. For example, integration of GESI activities in REDD+ (including inclusive decision-making process and capacity development of women) not only helps in achieving SDG 5 but also makes strong synergies to SDGs 10 and 16.

Out of the 17 SDGs, Nepal's REDD+ programs have core synergies with SDGs 5, 7, 10, 13, and 15. And REDD+ activities (of the country), if assessed against each target of SDGs, are found to be compatible with almost all targets of SDGs 13 and 15 (Dhungana, 2017). On the other hand, implementation of country's REDD+ programs also brings complimentary synergies (foreseen co-benefits) to SDGs 1, 2, 6, 8, 12, 16 and 17. The detail activities that are embedded in Nepal's

REDD+ program and its linkage and synergies to SDGs have been highlighted in Table 1.

Although the country's REDD+ initiative (process and program) are in line with most of the SDGs, its impact on SDGs is likely to be minimal. Since Nepal's REDD+ initiative is limited only to a handful themes and confined to a few areas. For example, REDD+ programs are being implemented only in 21% of total districts of the country. Similarly, programs related to biodiversity conservation, wetland mountain and rangeland ecosystem, and controlling of invasive species & illegal trade of flora and fauna have not adequately been incorporated in REDD+ programs (Dhungana, 2017). On the other hand, many REDD+ related policy instruments, which is prerequisite for REDD+ process are half-baked. For instances, a benefit-sharing framework for carbon and non-carbon benefit, National REDD+ Policy, and Safeguard Information System (for addressing grievances of REDD+ stakeholders) has not yet been finalized. Poor recognition of climate change adaptation program and the private sector in REDD+ related program planning may further heighten the gaps between REDD+ programs and SDGs in the coming days.

Table 1. Linkage of Nepal's REDD+ program/process to SDGs

SDGs	Embedded activities in Nepal's REDD+ program/process	Synergies
1. End poverty	Private Forest and promotion of forest-based industries	Complementary
2. End hunger and achieve food security		
5. Gender inequality	Inclusive REDD+ decision making process (Apex body, REDD working group and district REDD working group), Social safeguards, and Integration of GESI programs	Core
10. Reduce inequality		

SDGs	Embedded activities in Nepal's REDD+ program/process	Synergies
6. Clean water and sanitation	Management of watershed program and Environmental safeguards system	Complementary
7. Clean and affordable energy	Alternative energy (biogas and ICS)	Core
8. Decent work and economic growth	Sustainable Forest Management, Private Forest, Promotion of Forest-based industries	Complementary
12. Sustainable production and consumption patterns	SFM based on silvicultural system	Complementary
13. Climate change mitigation and adaptation	REDD+ Awareness raising and capacity development program, National REDD+ Strategy, integration of climate-smart and GESI friendly program, Afforestation and reforestation, SFM, alternative energy (biogas and ICS), agroforestry and private forest	Core
15. Protect, restore and sustainable use of terrestrial ecosystem	SFM, afforestation/reforestation, land use planning, nature-based ecotourism, watershed management, Biodiversity monitoring protocol for REDD+	Core
16. Peace, justice and strong institution	Participatory and Inclusive decision making, Grievances readdress mechanism has been integrated in Safeguard	Complementary

SDGs	Embedded activities in Nepal's REDD+ program/process	Synergies
	Information System and National Forest Information System	
17. Partnerships for SDGs	Country's REDD+ initiative (ERPD and FIP) has attracted GCF, CIF and FCPF	Complementary

modified from (Dhungana, 2017)

### Linkage of Nepal's REDD+ to NDC

Nepal ratified Paris Agreement in October 2016. As a party to the agreement, the country submitted NDC to UNFCCC in the same month to achieve climate-related goal. As the country does not emit significant amount of GHGs, it has intended to undertake several thematic activities to limit temperature rise to safest levels (MoPE, 2016). Out of it, nearly 21% of total intended activities of NDCs are related to REDD+. The country's community-based approach for forest resource management (major building block of REDD+) and REDD+ interventions envisioned in ERPD help in achieving the targets of NDC. The details of REDD+ interventions that are embedded in NDC have been highlighted below (Table 2).

Table 2 Linkage of Nepal's REDD+ program to NDC

Targets of NDC	REDD+ related Program/activities
Maintain 40% forest cover	REDD+ program adopts CBFM approach to deals with deforestation and forest degradation
Increase forest productivity and products	Sustainable Forest Management and Private Forest (have been envisioned in ERPD and FIP)
Pilot sub-national level ER	Emission Reduction program has been

Targets of NDC	REDD+ related Program/activities
project to reduce 14 MtCO <sub>2</sub> -eq by 2020	developed for 13 district of TAL area to reduce 14 MtCO <sub>2</sub> -eq.
1,31,200 biogas plant and 4,74,000 ICS	ERPD has targeted to established 60,000 biogas plant and 24,000 ICS.

The REDD+ activities (for example, SFM, promotion of Biogas and ICS, and maintaining 40% forest cover) that are embedded in NDC requires sustainable financing mechanism underpinned with institutional reform and human resource development measures. However, in the present context, there are still some gaps, particularly in finance and human resources fronts.

### Conclusion and ways forward

Community-based and multi-stage approaches of Nepal's REDD+ initiative has been able to make strong synergies to SDGs and NDC. However, there still remain some gaps, for example, narrow coverage of REDD+ program, financial constraints and inadequate technical human resources to translate policy/plan's provision into actions. These shortcomings may widen the synergies between REDD+ and SDGs & NDC in the coming years. Up-scaling the REDD+ program at all level, restructuring institutional framework, and developing benefit sharing mechanism (as provisioned in new constitution) & Safeguard Information System (for addressing grievances of REDD+ stakeholders) may boost the synergies and eventually makes the REDD+ program sustainable.

### References

Bastos Lima, M.G., Kissinger, G., Visseren-Hamakers, I.J., Braña-Varela, J., Gupta, A., 2017. The Sustainable Development Goals and REDD+: assessing institutional interactions and the pursuit of synergies. *Int. Environ. Agreem. Polit. Law Econ.* 17, 589–606. <https://doi.org/10.1007/s10784-017-9366-9>

Dhungana, S.P., 2017. How can REDD+ contribute to Sustainable Development Goals in Nepal? A case from Nepal, in: Sustainable Development in Nepal: Issues and Potentials (in Nepali). Sustainable Research and Development Centre, pp. 71–75.

MoPE, 2016. Nationally Determined Contribution. Government of Nepal, Ministry of Population and Environment.<http://www4.unfccc.int/ndcregistry/PublishedDocuments/Nepal%20First/Nepal%20First%20NDC.pdf>

Poudel, N.S., D.B., K., R., K., 2014. REDD+ readiness in Nepal: In search of effective stakeholder participation. Center for International Forestry Research (CIFOR). <https://doi.org/10.17528/cifor/004888>

## *2. India's experience in REDD+ supporting SDGs and NDCs*

R.S.C. Jayaraj<sup>1</sup> and V.R.S. Rawat<sup>2</sup>

<sup>1</sup>Director, Rain Forest Research Institute, <sup>2</sup>Assistant Director General, ICFRE

*Presented at the REDD+ workshop at FRI, Yezin, Myanmar on 21.02.2018*

### **Introduction**

REDD+ includes “reducing emissions from deforestation and forest degradation” plus “conservation, sustainable management of forests and enhancement of forest carbon stock in developing countries”. In India the forest and tree cover is steadily increasing over the last many years, owing to large scale afforestation and plantation programmes both from the government and private sector. The latest biennial report of the Forest Survey of India, the India State of Forest Report, 2017 has reported 7,08,723 sq.km. of forest cover covering 21.54% of geographic area and 93,815 sq.km. of tree cover forming 2.85% of geographic area. Though there is increase in forest and tree cover, mainly from the southern states, there is loss of forest cover and degradation in the north-eastern region, which has nearly one-fourth of the natural forests of the country. There are nearly 300 million people dependent on forests for their livelihood and income. Thus there is great potential for REDD+ in India, which can reduce emissions from deforestation and degradation in the forested regions, and also take up reforestation and enhancement of carbon stocks in the areas deficient in forests.

In India REDD+ projects are in various stages of implementation, mostly at the pilot level. The National REDD+ Policy is in place and the National REDD+ Strategy is in the final draft stage. Though India has progressed greatly in achieving the Sustainable Development Goals (SDGs) and in the Nationally Determined Contributions (NDCs), the contributions of REDD+ objectives to achieving them and their commonality is less understood. The experience of India in REDD+ supporting the SDGs and NDCs is detailed below.

## India's focus on SDGs

A High Level Political Forum had identified the focus areas among the SDGs for the Voluntary National Review in 2017, and the SDGs are 1, 2, 3, 5, 9, 14 and 17. Though all the goals are interlinked, those directly linked to climate change and forestry are just SDGs 13 and 15, and even if not focussed in the present voluntary review, are quite important, especially with reference to the socio-economic development of the forest dwelling and dependent communities.

If SDG 1 “End poverty in all forms everywhere” is considered, poverty levels have been falling steadily since 1991. As per the report of the Reserve Bank of India in 2012, the national average of poverty stood at 21.92%. However, the World Bank has estimated that in 2011, India had 23.6% of the population below the poverty line, based on Purchasing power parity. As per the revised \$1.90 a day poverty measure, in 2013, 30% of the population in India live below the international poverty line, according to World Bank. Though there are disputes on the level of poverty, there is no dispute that the poverty levels have been declining rapidly. As per Government of India's estimates, annual average decline of poverty was 2.2% between 2004/05 and 2011/12. This poverty decline is associated with significant increase in labour earnings, steep rise in wages for unskilled labour, and diversification from farm to non-farm sources of income in rural areas (Balcazar et al., 2016). The decline in rural poverty has been largely attributed to the Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS), a 100-day guaranteed employment scheme, though there are regional variations and certain drawbacks (Breitkreuz et al., 2017). The scheme generated nearly 2 billion person-days of employment a year and had positive impact on forest conservation in two ways, firstly, through directly giving sufficient purchasing power and diverting local population from forest based livelihood like fuelwood cutting and selling and other unsustainable use of forest produce and secondly through soil and moisture conservation works and plantations, which had a positive impact on the forest and tree cover. Under the Prime Minister's Ujjwala Yojana, 22 million households were provided LPG connections between 2005 and 2016, and thus the households with clean fuel

increased from 25.5% to 43.8%. This has a direct bearing on deforestation, as India is the largest producer and consumer of fuelwood in the world. India women spend 374 hours per year in fuelwood collection and this time has been saved for education or other productive work. It is estimated that out of nearly 216 million tonnes of fuelwood used every year, 27% comes from forests (FSI, 2011). Reduction in fuelwood use, thus indirectly contributes to forest conservation. It has been estimated that national fuelwood displaced due to increased LPG access was approximately 7.2 million tons with an estimated net emission reduction of 6.73 MtCO<sub>2e</sub> (Singh et al., 2017).

With reference to SDG 2: “End hunger, achieve food security and improved nutrition, and promote sustainable agriculture”, sustainable forest management, can increase the availability of food from forests. This is especially relevant for the communities living in and around forests. The forests in India are directly the source of fruits, vegetables, nuts, mushrooms, fodder and forage, animal source foods, etc., and provide a safety net in times of seasonal scarcity. Indirectly, the forests are the source of genetic resources, home of pollinators and regulate water supply for agriculture. Soil resources are also regulated and erosion is controlled by the forests (Vira et al., 2015). In India between 2005 and 2016 the stunting among children less than 5 years has declined from 48% to 38.4%. The per centage of underweight children has also declined from 42.5% to 35.7%. More than 800 million people are covered by Public Distribution System under which food articles are provided at subsidized rates and about 100 million children are covered by Mid-day meal scheme, under which nutritious meals are provided in schools. To make the agriculture climate adaptive, 62 million Soil Health cards have been issued to farmers, so that they can rationalize the use of fertilizers, especially those that contribute to greenhouse gas emissions. There is also a move to promote organic farming. India has plans to double the farmers’ income by 2022. All these activities are also related to the REDD+ objectives.

SDG 3- “Ensure healthy lives and promote well being for all at all ages”, is linked to many other goals. In India between 2005 and 2016, the prominent

indicators of health improved. For instance, infant mortality rate declined from 57 to 41 per 1000; Under-5 mortality declined from 74 to 50 per 1000; institutional deliveries increased from 38.7% to 78.9%. The National Health Policy, 2017 talks of Universal Primary Health Care, complete immunization by 2020 and Health insurance to Rs 1 lakh to all poor families. SDG-5 on Gender equality and empowerment has shown impressive progress. Between 2005 and 2016 female literacy increased from 55.1% to 68.4%. Women using bank accounts increased from 15.1% to 53%. SDG-9 on resilient infrastructure, inclusive and sustainable industrialization and fostering of innovation, has close links with NDCs and REDD+. Between 2012 and 2017 the installed capacity in non-fossil fuel sectors has grown by 51.3% and more than doubled in renewable energy sector. REDD+ by sustainable forest management can cater to the energy from biomass.

SDG-14 on Life below water- deals also with mangroves, and in India there has been a net increase in mangrove cover by plantation and protection; the mangrove area has increased between 1995 and 2017 from 4533 km<sup>2</sup> to 4921 km<sup>2</sup>. SDG-17 on Global partnership is linked to all the other goals. The other SDGs, though not focussed in the Voluntary review, has linkages with all the other goals. As far as REDD+ is concerned, the SDG-13 and SDG-15 are directly related to Climate Change and Forests respectively.

### **India's Nationally Determined Contributions (NDCs)**

The NDCs related to REDD+ objectives are many. There is a proposal to create additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent through forest and tree cover by 2030. This is directly relevant to REDD+ objectives of sustainable forest management and enhancement of forest carbon stock. There is also a commitment to reduce emission intensity of GDP by 33 to 35% by 2030 from 2005 level. As a result of measures taken in this direction, the emission intensity of GDP decreased by 12% between 2005 and 2010. It decreased from 18.16 goe (grams of oil equivalent) per Rupee of GDP in 2005 to 15.02 goe per Rupee GDP in 2012, a decline of over 2.5% per annum. It is also

proposed to achieve 40% of cumulative electric power installed capacity from non fossil fuel based energy sources by 2030.

The NDC strategies related to mitigation include generation of green energy and its increase from 35 GW in 2015 to 175 GW in 2022; increase in solar power from 20 GW to 100 GW by 2022; establishment of smart grids and green energy corridors; energy conservation by 10% by 2018-19; use of 5% biodiesel in locomotives, and implementation of Green Highways Policy. As part of adaptation, there is introduction of soil health card scheme, organic farming, efficient irrigation, National Mission for Clean Ganga, reduction of subsidy on LPG and creation of National Adaptation Fund of INR 3500 million.

Enhancing the carbon sink by 2.5 to 3 billion tonnes of CO<sub>2</sub> equivalent through forest and tree cover involves increase of carbon stock of about 680 to 817 million tonnes. This is proposed to be achieved by implementation of the Green India Mission, establishment of tree-line along both the sides of National Highways of 1,40,000 km length; and plantation along rivers. If the Green House Gas (GHG) profile of India is seen over time, Land Use, Land Use Change and Forestry (LULUCF) is the only sector that is showing a negative share of emission, over time. While LULUCF contributed 1.16% of emissions in 1994, it dropped to (-)17% in 2000 and to (-)12% in 2010. The carbon stock in forests is showing a steady increase. It was 6621 million tonnes in 2005, increased to 6941 tonnes in 2011 and to 7082 tonnes in 2015.

### **Synergy among SDG, REDD+ and INDC**

At least 12 of the 17 Sustainable Development Goals have direct or indirect connection with the NDCs and REDD+ objectives. Formulation and implementation of suitable REDD+ projects in areas where forests are getting lost or degraded, can not only restore the green cover, but also greatly contribute to achieving the SDGs and NDCs. The linkages among the three are shown below in a tabular format.

SDG	REDD+ objective	NDC targets
1. End poverty	REDD+ to be implemented in the context of sustainable development and reducing poverty	
2. End hunger/ food security and sustainable agriculture	Forest foods, agroforestry, organic farming, improved shifting cultivation	
6. Water and sanitation	Conservation of ecosystem services, Watershed management, river conservation, river cleaning	
7. affordable, reliable, sustainable and modern energy for all	Reduction in fuelwood use	40% of installed capacity of power generation from non fossil fuel
9. Resilient infrastructure, sustainable industrialization	Increase in the capacity of non fossil fuel based energy production	
10. Reduce inequality within and among countries	Bilateral and multilateral collaborations	
12 Sustainable consumption and production patterns	Reducing pressure on forests	Sustainable way of living

13. Combat climate change	Reducing emissions and degradation; enhancing carbon stocks and addressing drivers of deforestation	Reduction in emission intensity of GDP by 33-35% by 2030 (from 2005 level)
14. Conserve marine resources	Afforestation in mangrove areas	
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and biodiversity loss	All REDD+ objectives directly related	Creation of 2.5 to 3 billion tonnes of CO2 equivalent – additional carbon sink through forest and tree cover by 2030
16. Peaceful and inclusive societies for sustainable development	MRV and SIS are participatory	
17. Global partnership for sustainable development	Finance, technology transfer, capacity building	Capacity building of climate change technology and collaborative R&D. Domestic funds and additional external funds

## Conclusion

The way forward for India is to formulate strategic plans for implementation of REDD+ on regional basis or landscape basis, and implement REDD+ projects at grass root level, with active involvement of communities. The linkage of REDD+ with SDGs will give it the necessary connection to the Development Agenda, and thus the due importance. REDD+ can contribute to achieving a

large number of SDGs. While SDG 13 on Climate Change and SDG 15 on Life on Land cover the objective of REDD+ directly, many others are influenced indirectly. The SDGs and the related REDD+ objectives have been compiled and discussed elaborately (Lima et al., 2017). The contribution of REDD+ to meeting the NDC targets, which are committed will help in mobilizing funding internationally and also from the National Adaptation Fund.

## References

Balcazar, C.F., Desai, S., Murgai, R. and Narayan, A. (2016) Why did poverty decline in India? A nonparametric decomposition exercise. Policy Research Working Paper 7602. World Bank.

Breitkreuz, R., Stanton, C-J., Brady, N., Pattison-Williams, J., King, E.D., Mishra, C. and Swallow, B. (2017) The Mahatma Gandhi National Rural Employment Guarantee Scheme: a policy solution to rural poverty in India? *Development Policy Review*, 35(3):397-417.

FSI (2011) India State of Forest Report, 2011. Forest Survey of India.

Singh, D., Pachauri, S. and Zerriffi, H. (2017) Environmental payoffs of LPG cooking in India. *Environmental Research Letters*, 12:115003

Vira, B., Wildburger, C. and Mansourian, S. (2015) Forests, Trees and landscapes for food security and nutrition. A Global assessment report. IUFRO World series Volume 33. Vienna. 172 p.

Lima, M. G.B., Kissinger, G., Visseren-Hamakes, I.J., Brana-Varela, J. and Gupta, A. (2017) The Sustainable Development Goals and REDD+: assessing institutional interactions and the pursuit of synergies. *International Environmental Agreements*, 17:589-606.

### *3. Current Status of NFMS and Initial FREL of Myanmar*

Myat Su Mon, Khine Zaw Wunn and Nay Lin Tun,

Forest Department, MONREC

In Myanmar, forest resources play a critical role for the livelihood of the people and the national economy as well as providing environmental services including climate change. Country's total population is 51 millions and 75% is living in rural area (2014 Population census). In Myanmar, there are over 100 national races and they have Different culture, custom and traditions related to natural resource uses.

Forest monitoring is necessary in national and international environmental and developmental policy processes. Sound forest monitoring system, reliable and updated forest resource information is crucial for the sustainable development.

On the other hands, Government of Myanmar is fully aware of the causes and potential impacts of climate change. Myanmar actively participated in global climate change mitigation efforts as a non-Annex 1 party. Nationally Determined Contribution (NDC) was submitted in 2016. Under the NDC, forestry is a key sector and quantitative targets are likely to be included. Currently, Myanmar views REDD+ initiatives as a contribution to the green development of Myanmar as well as supporting the mitigation of, and adaptation to, climate change.

Following the suggestion of Decision 12/CP.17, Myanmar prepared its FREL using a stepwise approach. In January 2018, Myanmar submitted initial FREL as a benchmark for assessing its performance in implementing REDD+ activities in contribution to climate change mitigation. Myanmar FREL is national level. This submission follows the IPCC Good Practice Guidance and Uncertainty Management of National Greenhouse Gas Inventories. Specific activities which are either planned or ongoing for improvement of AD and EF, especially strengthening of the national forest monitoring and information system and in order to provide more qualified data and information for future FREL/FRL submissions.

#### *4. Biodiversity Monitoring Protocol for REDD+*

##### **Background**

REDD+ is a policy aimed at reversing the historic trends of increasing deforestation and greenhouse gas emissions from forested landscapes. It is one instrument under the UNFCCC as a climate change mitigation mechanism where developing countries can participate voluntarily. This instrument is based on an incentive mechanism where developing countries receive financial payments for undertaking any one or combination of the following activities (1/CP.16, paragraph 70):

- Reducing emissions from deforestation;
- Reducing emissions from forest degradation;
- Conservation of forest carbon stocks;
- Sustainable management of forests;
- Enhancement of forest carbon stocks

Due to the nature of the REDD activities, there is a need to synchronize the three multi-lateral environment agreements of the Rio Convention namely the UNFCCC, CBD and UNCCD. All land based activities must contribute to fulfill the goals set out by these global conventions. REDD + offers expectations for biodiversity conservation, as a co-benefit of protection forests to reduce carbon emissions (Strassburg et al., 2010; Venter et al., 2009).

In reality biodiversity conservation and forest resource management are core activities and benefits generated from reduced CO<sub>2</sub> emission has come up as co-benefits. Although the anticipated impact of REDD+ on biodiversity conservation in most forests is positive, such an impact cannot be guaranteed. Poorly designed REDD+ efforts (e.g. projects focusing solely on carbon for obtaining Certified Emission Reduction (CER) credits) could damage forest biodiversity, and in the process threaten the continued provision of ecosystem services for human well-being (CBD, 2011)

## **Scope of Biodiversity Monitoring Protocol**

Cancun safeguard recognizes the need for safeguards to address biodiversity conservation, however, none of the standards currently proposed include significant guidance on biodiversity monitoring. There is a need for a rigorous framework and guideline possible to ensure that the biodiversity concerns are incorporated into national REDD+ projects and the stated goals of biodiversity conservation are met with appropriate regard to the well-established ecological principles and experiences (Gardner et al., 2011; Waldon et al., 2011).

REDD+ has the potential to benefit biodiversity, but there are also several potential risks. Monitoring the biodiversity impact of REDD+ can help ensure that risks are mitigated and benefits achieved. Additionally, the results of monitoring may help in demonstrating compliance with international conventions and agreements.

## **Prioritizing Biodiversity Monitoring for REDD+**

The term biodiversity include all the biological forms and hence, monitoring of biodiversity can become a herculean task unless area of interest is fixed. Unless prioritization is done monitoring of biodiversity can become vague and complex in context where REDD+ projects have limited human and financial resources available for biodiversity monitoring. Identification and classification of forest according to their conservation value can be a beginning step for prioritization of the biodiversity monitoring activities. The conservation value of the forest can be accessed using secondary sources, literature and survey data, particularly the environmental and socio-economic baseline survey and be classified into six specific forest values as adopted by Forest Stewardship Council. Identification and categorization of the sites as HC VF should be done with adequate expert and field consultation as needed. Following table shows the area of interest and key priorities at different levels of biodiversity that should be kept in mind during biodiversity monitoring for REDD+.

## **Biodiversity monitoring approach**

### **1. Remote Sensing & Geographic Information System**

Remote sensing and GIS along with Google Earth can be used to gather preliminary information about the study area and layout of the study plots. Information on the wildlife population, their habitats and movements combined with the remotely sensed data can provide useful information for long term research. Additionally, use of tracking collars for wildlife has also proven very effective tool for monitoring their movements and behaviors that could give clue to their home range sizes, daily movements, behavior and diet. Particularly, Very High Frequency (VHF) collars and Global Positioning System (GPS) Collars have been in practice in Nepal. Use of conservation drones- miniature unmanned aircrafts- can also be done to remotely capture real time images and videos for monitoring species and habitat.

### **2. Participatory Biodiversity Monitoring**

Rapid assessment of biodiversity can be made using participatory tools like Resource Inventory, Transect Walk, Focus Group Discussion, household survey, Key Informant Survey, participatory socio-resource mapping, enterprise and forest user groups' records, photo monitoring, and experimental plots. This is an effective method that engages stakeholders at various levels which can provide us a preliminary idea on the status of biodiversity and their distribution in the area.

### **3. Biodiversity Monitoring Using Permanent Plots**

This approach is useful for REDD+ projects that have long term implementation models and that last over a longer period (>10 years). Monitoring the flora, fauna and other variables using permanent plots can be one best way for long term biodiversity monitoring. Permanent plots can be located in different areas of interest like areas with significance for biodiversity, areas sensitive or resistant to changes in climate and land use.

### **4. Periodic Biodiversity Monitoring**

As every biodiversity assessments require adequate time and resources, regular monitoring might not always be possible; in such cases periodic monitoring

might be the best way out. This monitoring can be done once every year, every alternate years or at a fixed time like every four or five years. Conducting such periodic monitoring in a systematic manner contributes in the long term biodiversity monitoring. Periodic monitoring provides valuable information on the trends and changes in the status of biodiversity of time and space.

### **Methods for Floral diversity assessment**

Various tools such as resource inventory transect walk and photo monitoring can be used to monitor changes in vegetation diversity of the area. These vegetation assessments can be carried out in both rectangular and circular plots. Nevertheless, circular samples are recommended because they are relatively easy to establish. Methods of measurement and resource assessment vary according to forest product and ecosystem services that are intended to be assessed or geographical area. Sequential process for floral assessment includes:

- i. Laying out the sample plots on the ground
- ii. Collection of plot information
- iii. Collection of data and information on shrubs /or scrubs
- iv. Herb and grasses measurement
- v. Seedling measurement
- vi. Sapling and pole measurement
- vii. Tree DBH and height measurement
- viii. Measuring of NTFPs

### **Methods for faunal diversity assessment**

A comprehensive monitoring would entail general fauna survey methods such as those used regularly in environmental impact assessments (Hyder, Dell et al. 2010). Range of methods is available for monitoring different taxa and species within those taxa. Since, monitoring all the species is complex and time consuming it is advised to identify the key indicator or key-stone species and monitor the species. Monitoring of the faunal biodiversity is particularly important in high conservation value forests including PAs. This assessment in

combination with the floral assessment supplements the assessment of forest health. Methods that can be used for faunal diversity assessment are as follows:

- a. Large Mammals: Reconnaissance (Recce) transects, Transect survey, Fecal counts, Camera trapping
- b. Small Mammals: Camera traps, Pitfall traps, Sherman traps and Snare traps  
Season: Summer
- c. Avian Species: Transect Method and Point count method
- d. Reptiles and Amphibian: Visual Encounter survey
- e. Butterflies, Moths and other insects: Pollard Walk Method and light traps
- f. Aquatic diversity: Direct Visual count, catch and release, Traps and nets and Hydro acoustic counts

#### **Institutional arrangement for BMP for REDD+**

The institutional arrangement for biodiversity monitoring for REDD projects needs to be established. In case of Nepal, central government coordinates the PAs and Carbon through RIC and DNPWC as per prevailing policy and Constitution of Nepal.

The overall REDD programmes are coordinated by REDD Implementation Centre (RIC) whereas the expertise for conducting biodiversity monitoring lies with DNPWC that is government authority for management of protected areas and DoF that is the authority for forest management outside PAs, with support from NGO like National Trust for Nature Conservation (NTNC), World Wide Fund for Nature (WWF) Nepal, Zoological Society of London-Nepal and Friends of Nature. Therefore it is suggested that while RIC is in charge of the overall REDD programme, the biodiversity monitoring aspect particularly can be given to DNPWC for leading the monitoring work in partnership with other institutions such as NTNC and WWF.

## References

- Strassburg, B. B. N., Kelly, A., Balmford, A., Davies, R. G., Gibbs, H. K., Lovett, A., ... others. (2010). Global congruence of carbon storage and biodiversity in terrestrial ecosystems. *Conservation Letters*, 3(2), 98–105.
- Venter, O., Meijaard, E., Possingham, H., Dennis, R., Sheil, D., Wich, S., ... Wilson, K. (2009). Carbon payments as a safeguard for threatened tropical mammals. *Conservation Letters*, 2(3), 123–129.
- Gardner, T. A., Burgess, N. D., Aguilar-amuchastegui, N., Barlow, J., Berenguer, E., Clements, T., ... Vieira, I. C. G. (2011). A framework for integrating biodiversity concerns into national REDD + programmes. *BIOLOGICAL CONSERVATION*, 1–11.  
<http://doi.org/10.1016/j.biocon.2011.11.018>
- CBD. (2011). *REDD-plus and Biodiversity*. Montreal, Quebec, Canada: Secretariat for the Convention on Biological Diversity.
- Waldon, J., Miller, B. W., & Miller, C. M. (2011). Opinion Article A model biodiversity monitoring guideline for REDD projects, 4(3), 254–260.

## *5. Analysis of Drivers of Deforestation and Forest Degradation*

### *In Shan State*

Aung Aung Myint

Consultant

ICIMOD

This study aims to contribute to Myanmar's REDD+ readiness programme. It is especially to identify, analyze and document the driver of deforestation and forest degradation of the whole Shan State. Moreover, it is also need to determine co-relation between them and also to make the assessment of strategic options for addressing deforestation and forest degradation.

During the study, stakeholder consultation, interview participatory approach and general observation were emphasized. Socio-economic survey was conducted only in 9 villages of serious hotspot areas depending on available time budget and security condition.

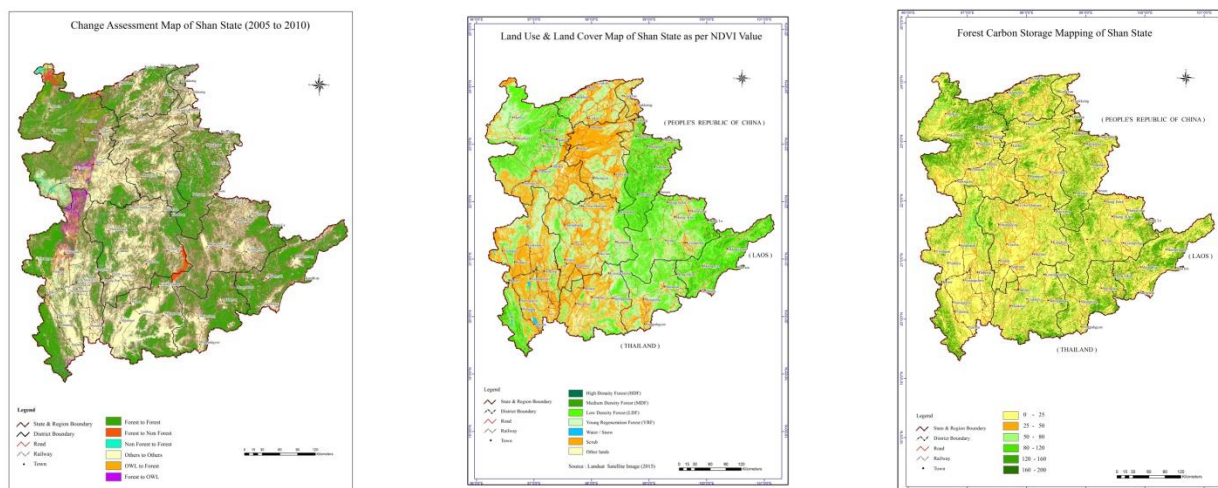
Two sources (primary and secondary) of data collection were used. To know the history of forest cover change, spatial analysis using three sets (2005, 2010 and 2015) of satellite remote sensing data had been performed. As a counter checking, NDVI analysis and Hansen and Global Forest Watch data were also used. According to the spatial analysis of 2005, 2010 and 2015 Landsat imageries, Forest Cover of Shan State decreased from 52.38% in 2005 to 41.45% in 2010, but a little bit increased from 41.45% in 2010 up to 48.14% in 2015, indicating an increase of 6.69% during the 5 years period (2010 to 2015).

In addition, according to the group homogenous matrix of NDVI values 2005 and 2015, Young Regeneration Forest (YRF) and Low Density Forest (LDF) are getting increased in 2015. High Density Forests are apparently decreased. That means forest cover of Shan State has been obviously deforestation and degraded between 2005 and 2015 period. Other lands reduced and scrub lands are getting high. That means some bare lands are getting covered with tree canopies. That is result of rubber plantations. All in all, that ndvi result is resembled with the spatial analysis results of Landsat imageries. Another bad meaning is there is hardly any High Density Forest (HDF/intact forests) left in Shan State.

According to Global Forest Watch data, in 2012, Shan State Forest Cover is still good in compare with forest cover of other Regions and States, but dense forest or intact forest is lower than Kachin State. Moreover, annual forest loss is highest in year around 2010. That coincided with the result of special analysis. And also annual forest loss of Shan State is higher than other Regions and States. This study finding is consistent with FAO FRA reports and Global Forest Watch data.

According to result of the result of “Forest Cover and Carbon Mapping in Greater Mekong Sub-region and Malaysia Project” under APFNet program, the estimated carbon stock of Shan State was 700.93 million tons. According to FRA 2010 and FRA 2015, estimated carbon stock of Shan State was 791.40 mt in 2005, 754.71 mt in 2010 and 722.83 mt in 2015, respectively. That is why, In terms of carbon emission from deforestation and forest degradation, **6.86 million tons per year** of carbon emitted between 2005 to 2015 period in Shan State.

**Fig.1.Change Assess Map (2005-15) Fig.2.NDVI Map of Shan State Fig.3.Carbon Storage Map of SS**



The main drivers of deforestation and forest degradation in Shan State can be divided into two types, namely direct and indirect drivers. Direct/Proximate drivers are direct human activities that affect forest cover. Indirect/Underlying drivers are complex interactions of fundamental, social, economic, political,

cultural and technological processes that affect direct drivers. Indirect drivers include processes such as changing markets and commodity prices, population growth, national policies and governance, and dynamics of subsistence and poverty.

The study findings showed that direct drivers in Shan State that were associated with deforestation were Agricultural expansion, Shifting Cultivation, Infrastructure development and Mining while associated with forest degradation were Overexploitation of timber, Fuelwood consumption (including charcoal) and Forest fire. In indirect or underlying terms, drivers include population growth, Economic growth (International and national), weak in law enforcement, Poverty and subsistence, Conflicting policy, Language barriers, Land tenure uncertainties and Inadequate Natural Resources planning and monitoring. Those will be associated with not only deforestation but also forest degradation.

In some part of the study area, parts of the forest areas have been converted to agricultural lands where part of forest land have been cleared for rubber plantation and food production especially maize, water melons, beans and potatoes. Agricultural expansion for commercial and subsistence purposes have been reported as major drivers across Shan State. In terms of shifting cultivation, if it has evolved into shorter fallow period system and changed to agribusiness region, it will make seriously damage the environment and makes soil erosion and degradation. Especially rubber plantation areas of northeastern and eastern Shan State have been drier than ever.

All in all, in Shan State, Agricultural Expansion, Agribusiness Plantations, Shifting Cultivation, Rubber Plantations, Opium Poppy Plantations, and Poverty are main drivers of deforestation and they are interrelated each other. Population growth and economic growth are the same. These drivers are the very important drivers of deforestation and forest degradation in Shan State. Mining, Infrastructure Development including urban expansion and Forest fire are also important but less prominent in Shan State.

The priority order of Strategic Options for addressing deforestation and forest degradation is the outcomes of stakeholder consultation and validation workshop organized in Taunggyi. Overall comments on Strategic Options are:

- 1) Encourage and Promote Nationwide Ceasefire Agreement - NCA and Myanmar's Peace Process which is linked to good governance and security for sustainable development.
- 2) Promote financial, facilities and human resources to implement effectively forestry activities and monitoring.
- 3) Facilitate arm guards and built capacity within the department to monitor effectively.
- 4) Making the National Land Use Policy effective across the country
- 5) State land management system and customary land management system should have been good integrated.
- 6) Promote coordination between Government Organizations with overlapping mandate.
- 7) Practice with least environment impact techniques with EIA/SIA before starting the project.
- 8) Electricity and Energy sector development to be Sustainable fuelwood and charcoal consumption.
- 9) Awareness raising and law enforcement within local communities.
- 10) Timber extraction must be practiced according to the instruction of Reduce Impact Logging of Code of harvesting.
- 11) Determined the AAC based on the need of the changing socio-economic, environmental and silvicultural considerations and limited harvesting of timber of all species to the specified AAC.
- 12) Introducing Agro-forestry practice with the support of perennial crop seedlings.
- 13) Introduce high-yielding variety crops and farming systems and disseminate higher-yielding variety seeds and seedlings.

SWOT analysis of the priority options identified the various drivers related to deforestation and forest degradation was also applied with the consent of the stakeholder consultation meeting.

The Government of Myanmar is trying to formulate a new land law is being developed in order to harmonize existing laws related to land. Under this law, a National Land Use Council will be set up. Some other rules and regulations are also amended to be in line with the current saturations. To overcome deforestation and forest degradation, Ministry of Natural Resources and Environmental Conservation (MONREC) has developed a ten-year Restoration and Rehabilitation Programme (2017-2027) in cooperation with related stakeholders, building on past experiences and lessons learned.

Sooner or later, we will have to recognize that the Earth has rights, too, to live without pollution. What mankind must know is that human beings cannot live without Mother Earth, but the planet can live without humans (Evo Morales). That is why we should find the way as Dr. Albert Einstein said.

“We cannot solve our problems with the same thinking we used when we created them.” – **Albert Einstein**

*6. An assessment of governance quality and development of “verifiers” for key governance indicators for community based forest management regimes in the Hindu Kush Region*

A/Prof Tek Maraseni

University of Southern Queensland, Australia

Tek.Maraseni@usq.edu.au

Dr Bhaskar Karky,

International Centre for Integrated Mountain Development

Bhaskar.Karky@icimod.org

Mr Nabin Bhattarai

International Centre for Integrated Mountain Development

Nabin.Bhattarai@icimod.org

During 2010-2015, approximately 7.6 million hectares of forests—about 11% and 50% of the size of Myanmar and Nepal, respectively—disappeared from the earth annually (FAO, 2015). Deforestation and forest degradation account for about 10-18% of total global anthropogenic greenhouse gas (GHG) emissions. Without reducing emissions from deforestation and forest degradation, conservation and enhancement of forest carbon stocks and sustainable management of forests (REDD+), the 1.5–2°C climate change target, as proposed by the Paris Agreement (United Nations, 2015), cannot be realized. The effective implementation of REDD+ could transform the forestry sector from a climate change problem to a climate change solution. Therefore, billions of dollars have been channelled into developing countries for REDD+. However, weak governance and high levels of illegality pose major challenges in these countries. Using a normative framework of principles, criteria and indicators (PC&I), this study assesses governance quality and develop “verifiers” for eleven indicators for community based forest management systems (CBFMSs) at local, sub-national and national levels in four countries—Nepal, Bhutan, India (Mizoram) and Myanmar.

There is huge variation in perceptions/scores of governance quality among the countries. However, higher total scores may not mean that they are better than others as this may reflect the level of understanding and duration of CBFMS in these areas. Even within the same country, different levels have different scores: (1) Myanmar and Bhutan have very high scores at local levels compared to other levels. This is because Myanmar is in the early stages of CBFMS (and may be the excitement factor), while Bhutan has large areas of forests and local people are enjoying the benefits of CBFMS. Nepal and India have a relatively similar score for each level. CBFMS is more mature and has long history in these countries; therefore, different levels have a common understanding about the CBFMS.

Among the indicators, in all countries “Resources” received the lowest score whereas “Durability” received the highest score. Similarly, at a criterion level, “implementation” received the highest score, suggesting that CBFMS has the ability to change behavior, solve problems and ensure its sustainability/durability.

In each country, various levels have different priorities of importance for ‘indicators’. Whilst developing verifiers for each indicator, if resources are not enough to cover all indicators, they can select those indicators which are most important at that level. However, for consistency reasons, if they want to cover the whole country with the same set of indicators, they can select the highest-ranked four or five indicators.

Due to limitation of resources, this study could not include all relevant stakeholders and the standards development process is limited to the “verifiers” level. Further work is needed in three areas: (1) in each country, there are several stakeholders in the CBFMSs at multiple levels; therefore, more research across a larger number of stakeholders and sample sizes is required to determine if these

results are indicative of broader perceptions; (2) to develop “means of verification” for each verifier so that there is a complete set of “standards”; and (3) the outcomes of the consultation processes revealed a high level of interest amongst stakeholders for applying a governance framework to REDD+; as all countries are active in REDD+, replicating the method to REDD+ could be useful in setting benchmarks.

## **Acknowledgement**

We gratefully acknowledge the ICIMOD and GIZ for their generous financial support. We sincerely thank the many stakeholder representatives who participated in the various project activities. We would also like to recognize the University of Southern Queensland (USQ) for its logistic and in-kind support.

## **Reference**

Food and Agriculture Organisations (2015) Global forest resources assessment 2015, access from <http://www.fao.org/3/a-i4808e.pdf>

United Nations (2015) Paris Agreement, accessed on 23 May 2016 from [http://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf)

## *7. Building Timber Value Chains for REDD+: the timber value in Myanmar and its compatibility with REDD+*

Hudu Baniko, Bhaskar Singh Karky

### **Abstract**

Efficient and sustainable forest products value chains are important for sustainable forest management, rural livelihoods and poverty alleviation. However, in most tropical developing countries, these value chains are not well-developed and governed effectively to ensure equitable distribution of income and benefits from the trade of timber; thus providing less incentive for sustainable forest management. Inefficiencies and inequitable distribution of benefits in timber value chains can contribute to forest degradation. Timber value chains that are well-developed and sustainable are thus important for the objectives of market-based climate governance mechanisms such as the REDD+, and as such, REDD+ initiatives can provide pathways and direct interventions for developing equitable and sustainable timber value chains. This, however, this requires a clear understanding of the functioning and distribution of benefits in the value chain. Thus, this study assesses the teak timber value chain in Myanmar with the aim of identifying bottlenecks that require interventions for REDD+ compatibility.

Using focus group discussions and individual interviews with MTE and FD officials in timber extraction sites, as well as, timber traders in two urban markets, the study finds that the teak timber value chain has both positives and weaknesses that are important for REDD+ compatibility. The strengths of the value chain which are found mostly in the timber production and extraction stages include: the use of scientific forest management (MSS) for timber production and reduced impact logging (RIL) method in timber extraction. In

terms of policy on timber trade, the decentralization of the auction system and the log export ban are seen as positive measures.

However, there are several weaknesses and threats that need to be addressed for value chain sustainability and REDD+ compatibility. The weaknesses include: illegal timber trade; export orientation and inadequate supply of timber for domestic market; little in-country value addition; lack of globally recognized certification scheme; barriers in institutional environment and value chain governance; state monopoly over timber trade; lack of diversity in timber supply sources; and the inability of local people to benefit from timber trade. The threats to the timber value chain and REDD+ compatibility include: insurgency and political/ethnic conflicts; illegal logging; increasing trend of timber prices; and natural forest loss and low investment in community forest and smallholder teak plantations.

There are some opportunities that can be leveraged for policy options and interventions for a sustainable timber value in the country including: the democratization of the country and efforts to reform forest policy; the VPA negotiation process; increasing interest of private sector; and high potential of community forest enterprises across multiple products. As a matter of concern, the following recommendations are necessary for a sustainable and REDD+ compatible timber value chain:

- Promoting community forest enterprises, smallholder plantations and private commercial teak plantations to ensure diversity in timber production and supply
- Tackling illegal timber logging and trade through better law enforcement and market-driven timber pricing/trade policies
- Promoting forest-based SMEs participation in the value chain by increasing allocation of timber for domestic trade and simplifying the auction processes and requirements for SMEs participation in tenders

- Deregulating timber trade by corporatizing MTE. Giving the MTE autonomous status and corporatizing it to run as a business enterprise will increase its efficiency and effectiveness in delivering the necessary profits.
- Promoting in-country value addition by encouraging further processing which will help create jobs and increase the contribution of the forest sector to the economy
- Improving and quickening progress and efforts in timber certification in the country.
- Review of forest policy and regulations to give commercial forest rights (including teak) to private individuals, smallholders and local communities
- Finding lasting solution to insurgency and ethnic/political conflicts through dialogue and other mediation process is important for sustainable forest management and timber supply in the country

## *8. Gap Analysis in Line with the National REDD+ Readiness Process in Shan State*

Thaung Naing Oo, Su Mon San, Aye Chan Maung, Nway Mon Mon Aung, Win Win Nwe

### **1. Background**

Subnational level REDD+ implementation is an important stage which link between project level and national level REDD+ implementation. Up until now, Myanmar has limited experiences, knowledge and studies for REDD+ at Sub-national level. Hence, the Gap Analysis studied the feasibility and needs of REDD+ implementation in Shan State to kick start the subnational level REDD+ processes. The research was conducted with financial support of ICIMOD Himalayan REDD+ Project, Myanmar.

### **2. Objectives**

The specific objectives of the study are:

- To comprehensively review the forest related legislation and institutional arrangements
- To compile information on activities being undertaken by government agencies, NGOs and civil society in Shan State
- To analyse and identify gaps and provide recommendations as how to fill in those gaps across the process of REDD+ readiness in Shan State, (based on information compiled for the above two objectives)
- To estimate the time and financial resources required to fill each identified gap

### **3. Methodology**

A core group or research team was firstly formed from REDD+ Core Unit of Forest Department and Project Management Unit (PMU) of the Himalayan REDD+ Project. **Secondary data collection, desk study, field observations and interviews** with key stakeholders were carried out in order to achieve the set objectives. **Series of Consultative Meetings** were held to provide input, comments and advices to the findings of the Core Group. The gap analysis

includes key elements of existing policies, laws, plans and institutional arrangements of REDD+ readiness process. The following relevant existing policies, law and regulations to REDD+ implementations were analyzed to find gaps:

- Forest policy
- Environmental Conservation policy
- Climate change policy
- Land use policy
- Agricultural policy
- National energy policy
- Forest Law
- Forest Rules
- Environmental Conservation Law
- Environmental Conservation Rules
- Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law
- Vacant, fallow and virgin land Management Act
- Farm land law and farm land rules

In additions, gaps from the following strategies and action plans for implementation of REDD+ were analyzed. Those include:

- REDD+ Strategies (Draft)
- NBSAP (2016)
- (Intended) Nationally Determined Contributions (NDC)
- 10-years MRRP
- 30 year Forestr Management Plan
- National Strategy and Action Plan
- NSAP for Mangrove (2016)
- National Climate Change Strategy & Action Plans (2016-2030)

#### **4. Key findings**

From Law and Policies Aspect,

- Concept of REDD+ is not specifically embedded yet.
- Lack of Strong legal framework for REDD+ activities
- Lack of clear rules and regulations for related departments in implementing REDD+ activities
- Sectoral policy for emission reduction and REDD+ is missing.
- Weak coordination among line ministries
- Lack of Funding mechanisms
- Legal support for benefit sharing mechanism is needed.
- Land tenure and rights in unclassified forests is insecure.

In Strategies and Action Plans,

- Insecure financial investment requirement
- No strategy/ action plan for subnational level
- Developed plans need to be integrated (with REDD+)
- Limited resources and capacities
- Weak coordination among line ministries
- Lack of Sectoral strategy for REDD+

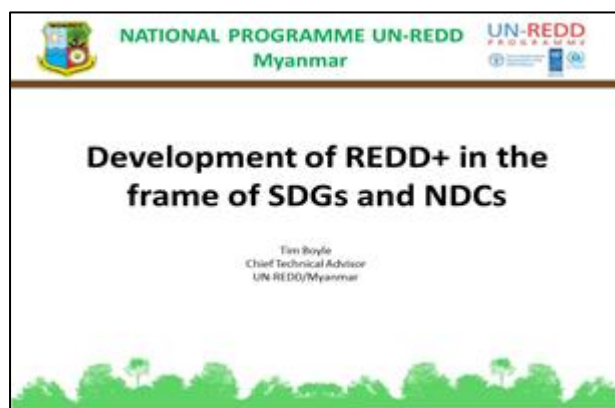
For Institutional Arrangements,

- No REDD+ institutional arrangement for sub national level
- Existing organized units at national level are not interacting or coordinating with REDD+ unit or each other or with subnational stakeholders.
- Coordination among different vertical and horizontal level is needed.

#### **5. Further steps**

Findings will be revised and validated through a Consultation/ Validation workshop with key stakeholders. Key priority gaps will be ranked, and time and financial/funding requirement for possible solutions to fulfill prioritized gap will be estimated.

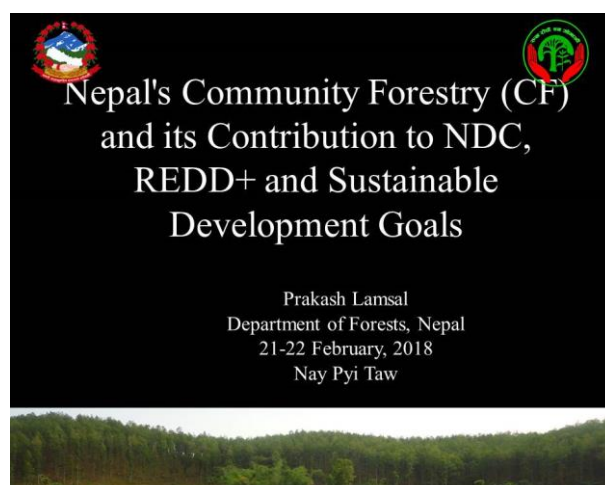
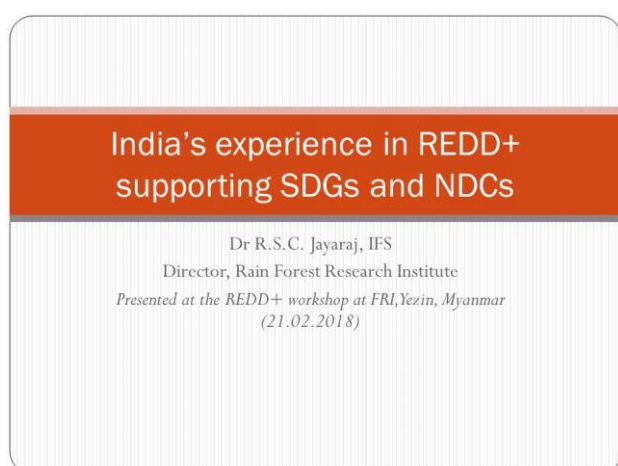
## Annex 5- Records of presentations



### Nepal's REDD+, and SDGs and NDC



HK Laudari  
Forest Officer



**ICIMOD**

## Biodiversity Monitoring Protocol for REDD+

**Nabin Bhattarai**  
Regional REDD Initiative  
[Nabin\\_Bhattarai@icimod.org](mailto:Nabin_Bhattarai@icimod.org)

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International Centre for Integrated Mountain Development  
Kathmandu, Nepal

FOR MOUNTAINS AND PEOPLE

Ministry of Natural Resources and Environmental Conservation  
Forest Department  
Forest Research Institute

## Assessment and Monitoring Flora and Fauna in Pindaya, Shan State


Mu Mu Aung ,PhD

Forest Research Institute  
Forest Department


February 21, 2018

Current Status of NFMS  
and  
Initial FREL of Myanmar

Myat Su Mon, Khine Zaw Wynn, and Nay Lin Tun  
Forest Department, Myanmar

**ICIMOD**  **giz** Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

### Drivers of Deforestation and Forest Degradation in Shan State, Myanmar (22<sup>nd</sup> February, 2018)



**"REDD+ Himalayas: Developing and using experience in implementing REDD+ in the Himalayas"**

22<sup>nd</sup> February, 2018,  
Forest Research Institute, Yezin, Nay Pyi Taw. Aung Aung Myint, NC.  
Email: [agagmyint@gmail.com](mailto:agagmyint@gmail.com)


### An assessment of governance quality and development of "verifiers" for key governance indicators for community based forest management regimes in Hindu Kush Himalayan Region

A/Prof Tek Maraseni  
University of Southern Queensland, Australia  
[Tek.Maraseni@usq.edu.au](mailto:Tek.Maraseni@usq.edu.au)  
Dr Bhaskar Karky  
International Centre for Integrated Mountain Development  
[Bhaskar.Karky@icimod.org](mailto:Bhaskar.Karky@icimod.org)  
Mr Nabin Bhattarai  
International Centre for Integrated Mountain Development  
[Nabin.Bhattarai@icimod.org](mailto:Nabin.Bhattarai@icimod.org)

**ICIMOD**

## Building Timber Value Chains for REDD+:

*The timber value chain in Myanmar & its compatibility with REDD+*



**HU DU BANIKOI & Bhaskar Singh Karky**  
International Centre for Integrated Mountain Development  
Kathmandu, Nepal

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