A TRAINING OF TRAINERS MANUAL FOR

REDD+

For national and sub-national level facilitators

RECOFTC
THE CENTER FOR
PEOPLE AND FORESTS

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A few words

Climate change is one of the most debated topics around the world at present. Many countries have experienced its effects in different forms. According to scientists, Nepal is likely to be affected more severely than other countries due to its socio-economic structure and unique geographical characteristics. Therefore, there is an urgent need to prepare to mitigate the impacts of climate change and build capacity to adapt to the changing climate. Forestry is identified as one of the crucial sectors, which has potential to play a very positive role in this regard. Reducing Emissions from Deforestation and Forest Degradation (REDD) is therefore being proposed as one of the most cost effective tools, which not only will help in bringing down the carbon emission rates, but also help conserve forests, biodiversity and secure livelihoods of forest dependent communities. According to this, countries and communities that protect their forests by stopping deforestation and forest degradation will be rewarded through the payment mechanism of REDD+.

As the concept of REDD+ is new, it is essential for all concerned stakeholders to understand it and contribute to the evolving process of this mechanism, particularly poor and marginal communities living in and around forests. In order to achieve optimum participation of all concerned stakeholders, information on REDD+ must be disseminated in an accessible, flexible and dynamic format that meets specific, practical needs. The REDD+ debate has generated a considerable amount of information in a short space of time, some of it contradictory, most of it complex in nature, and all of it subject to continuous revisions and correction in the light of technical, institutional and political changes.

This training manual for national and sub-national level facilitators is a timely step forward in this direction. It aims to create a well-trained human resource base in the country, which can help raising awareness and build capacity among forestry sector grassroots stakeholders. Since the concept and idea of REDD+ is new and still evolving, it is expected that this manual will undergo further revisions over time.

I am pleased to see such a collective effort by key organizations working for REDD+ in Nepal in preparing this training manual. I would like to congratulate and thank all those who have contributed in this process. In particular, the able guidance of Shambhu Dangal, Bisnu Hari Paudyal and Harisaran Luintel was very much appreciated. The contribution from all other members involved is equally valued and appreciated. I would also like to thank Keshab Khanal, Ramasheswor Mandal, Dil Raj Khanal, Eakbahadur Rana, Dil Bahadur Khatri, Ngamindra Dahal, Bryan Busli, Jailab Kumar Rai, Kalpana Giri and Shivsankar Panday for their contribution. Thanks are also due to Krisnamurari Bhandari, Paras Nepal and Arjun Gyawali for Nepali language editing and typesetting. Finally, I would like to express my sincere thanks to the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC) Bangkok, Thailand, and Norwegian Agency for Development Cooperation (Norad) for providing financial assistance.

Yub Raj Bhushal
Secretary
Ministry of Forest and Soil Conservation, Nepal

A few words from RECOFTC

Realizing the importance of forests to the global issue of climate change mitigation, forest conservation and management is being promoted through REDD+. Various international agencies, as well as developed and developing countries are working to support REDD+ and its related structures. This is happening in Nepal, where the development of locally appropriate REDD+ structures are needed. For the successful implementation of REDD+, the active participation of all stakeholders is essential. Therefore, demand for REDD+ related awareness and capacity building programs is increasing from different levels.
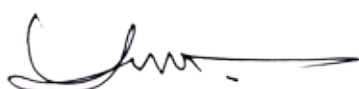
Considering the growing demand, RECOFTC, known as The Center for People and Forests, Bangkok, Thailand, with financial support from Norwegian Agency for Development Cooperation (Norad) initiated grassroots capacity building for REDD+ in the Asia-Pacific region, covering four countries – Nepal, Indonesia, Lao PDR and Vietnam. This training manual for community level facilitators is one of the key contributions of this ongoing program, targeted at building the trained human resource base, who in turn can help raise awareness and build the capacity of forestry sector grassroots stakeholders.

I am very happy to note that the process of preparing this manual involved the collective efforts of six different organizations in the country. I would like to congratulate and thank the National REDD-Forestry and Climate Change Cell of the Ministry of Forest and Soil Conservation, Government of Nepal, for coordinating such an important and timely effort. I would also like to acknowledge the significant contribution made by all the participating organizations during the preparation process of this manual. The collective experience and wisdom of all the organizations has certainly added value and helped making this manual a useful REDD+ development tool.

I would also like to congratulate the project implementation team both at the regional and national level for taking this big step forward and bringing out such an important resource on time, helping contribute to the ongoing process of ongoing REDD+ in the country.

I am sure this manual will undergo further revisions and improvement as REDD+ evolves further and throws up new challenges. However, I am confident that this experience of pooling resources will be an important lesson for other countries for this project and will help them take a similar initiative to meet the growing demand of training and capacity building material for REDD+.

Thank you for this valuable effort and with best wishes,

Dr. Yam Malla
Executive Director
RECOFTC - The Center for People and Forests, Bangkok

Foreword

The capacity enhancement of a nation, civil society, local community and private sector to fulfill obligations set by international laws is one of the fundamental requisites of a sovereign state. In order to achieve the mission and objectives set by the United Nations Framework Convention on Climate Change (UNFCCC) 1992 protocols, it is clear that attention needsto be paid to developing countries in order to enhance their capacity to tackle the growing threat of climate change. REDD+ has recently been proposed as the most cost effective mechanism to mitigate the likely negative impacts of climate change. Efforts towards this direction have accelerated over the past 3-4 years, mainly in developing countries, which are facing severe pressure on their forestlands leading to increased greenhouse gas emissions.

REDD+ is a new mechanism, which has generated huge amount of information in a relatively short time, most of it is complex in nature. Therefore, it is important that a capacity building program for concerned stakeholders is designed to provide updated information on the evolving mechanism of REDD+. This training manual for community level facilitators is an attempt in this direction.

Having a strong history of community forestry, the capacity enhancement of forestry sector stakeholders is deep rooted in Nepal. However, in the context of capacity enhancement for climate change related issues, including REDD+, is rather a recent initiative. The growing threat of climate change in Nepal, capacity enhancement becomes fundamental in building resilience among stakeholders in the forestry and land use management sectors in the country. In this context, the capacity enhancement of grassroots communities, who are among the most vulnerable, needs to be given priority.

This facilitator training manual, therefore, aims to address this concern by creating a trained human resource base in the country, mainly for grassroots level capacity building. This should ensure that they are able to contribute to the evolving implementation process of REDD+ in Nepal and gain from the likely benefits of the proposed mechanism.

This training manual has been developed by a consortium of seven member organizations, coordinated by the National REDD Cell of the Ministry of Forest and Soil Conservation, Government of Nepal. This collaborative effort has contributed updated information on REDD+ by providing reference material, case study examples in the national context, and making REDD+ more relevant to the grassroots level. We sincerely hope that this manual will be a useful instrument in building the capacity of all concerned stakeholders for REDD+ and thus be able to contribute to the ongoing process in the country. We would also like to highlight that since REDD+ is a mechanism that is still unfolding and changing, this training manual will need to be updated and revised in a timely way. Therefore, this training manual can not be treated as completed and perfect in all respects. We expect and welcome suggestions and feedback from the users of this manual and all other concerned stakeholders in order to improve it further.

In conclusion, preparation of this manual has been a learning experience for all of us. We would like to sincerely thank all the contributing organizations for giving their useful inputs in various forms and adding value to this training manual. We hope that this collaborative effort will go a long way and ultimately will contribute to the REDD+ program in the country. Thanks are also due to the Grassroots Capacity Building Project Coordinator, Dr. Chandra S. Silori, for providing us this opportunity and also sharing his useful insights and editorial support during the course of preparing this manual.

Shambhu Dangal, Bishnu Hari Paudyal and Harisharan Luintel

Contents

Training schedule

Proposed duration: 5 (five) days

Time	Module	Session/activities
Day 1		
8.30 - 10.00	**Introductory session**	Inauguration, getting to know each other, session plan, baseline data collection, expectations etc
10.00 – 10.15		Morning tea/coffee break
10.15 – 12.00	**Forest and climate change**	Climate change and impacts
12.00 – 13.00		Lunch break
13.00 – 14.00		Evolution of climate change debate and policy at global level
14.00 – 14.10		Game/energizer
14.10 – 15.30		Forests and (payments for) environmental services
15.30 – 15.45		Afternoon tea/coffee break
15.45 – 17.15		The role of forests in climate change mitigation and adaptation
17.15 - 17.30		Evaluation of the day
Day 2		
8.30 – 9.00		Review of the previous day
9.00 – 10.15	**Evolution of REDD+ policy**	Framework of REDD+
10.15 – 10.30		Morning tea/coffee break
10.30 – 12.30		Introduction to forest carbon trade
12.30 – 13.30		Lunch break
13.30 – 15.30	**Requirements for REDD+**	Ecological and technical aspects of REDD+
15.30 – 15.45		Afternoon tea/coffee break
15.45 – 17.00		Socio-economic safeguards
17.00 - 17.30		Evaluation of the day

Time	Module	Session/activities
Day 3		
8.30 – 9.00		Review of the previous day
9.00 – 10.30		Policy and institutions
10.30 – 10.45		Morning tea/coffee break/energizer
10.45 – 12.15	**Nepal's forestry context**	Forest cover change in Nepal
12.15 – 13.15		Lunch break
13.15 – 14.45		Prospects and challenges for avoiding deforestation and forest degradation in Nepal
14.45 – 15.00		Afternoon tea/coffee break/energizer
15.00 – 16.30		Opportunity costs of REDD+
16.30 - 17.00		Evaluation of the day
Day 4		
8.30 – 9.00		Review of the previous day
9.00 – 11.00		Stakeholders analysis in REDD+
11.00 – 12.15	**Forest tenure, access and benefits sharing**	Existing forest management modalities and tenure rights
12.15 – 13.15		Lunch
13.15 – 14.30		Social differentiation & differential access to forests and benefit sharing
14.30 – 14.45		Afternoon tea/coffee break/energizer
14.45 – 15.45		Challenges for equitable benefit sharing at national, sub-national and local level
15.45 – 15.50		Energizer/tea
15.50 - 17.00	**REDD+ implementation process in Nepal**	National REDD+ process initiatives
17.00 - 17.30		Evaluation of the day/home work for thematic presentation
Day 5		
8.30 – 9.00		Review of the previous day
9.00 – 10.30		Necessary technical/ecological aspects of REDD+ in Nepal
10.30 – 10.45		Morning tea/coffee break
10.45 – 12.00		Policies and institutions for REDD+ in Nepal
12.00 – 13.00		Lunch
13.00 – 14.30	**Concluding sessions**	Review of issues related to REDD+ and discussion
14.30 – 14.45		Tea break
14.45 – 15.45		Thematic presentation of the key messages of the training
15.45 - 17.00		Training evaluation, action plan development and wrap-up

Background

Climate change is one of the most important and complex challenges now facing humanity. The Intergovernmental Panel on Climate Change (IPCC) in its fourth Assessment Report has unequivocally affirmed the warming of our climate system and linked it directly to human activity (IPCC 2007). Industrial activities, burning of fossil fuels, and cutting down of forests are the key contributors to climate change. Due to these activities, the concentration of greenhouse gases (GHG), consisting of carbon dioxide (76%), methane (13%), chlorofluorocarbon (5%) and nitrous oxide (6%) increases in the atmosphere, absorbing infrared radiation, adding to the atmospheric temperature and controlling the way natural energy flows through the climate system. Observations show that global temperatures have risen by about 0.6°C over the 20th century. There is new and stronger evidence that most of the observed warming over the last 50 years is attributable to human activities.

Among various options being suggested to reduce the impact of greenhouse gas emissions or climate change effects, reducing deforestation and forest degradation is being suggested as one of the most economical methods. Forests, as we know, act both as a sink and source of CO_2 emissions. Tropical forests cover about 15% of the world's land surface and contain about 25% of the carbon in the terrestrial biosphere. But they are being rapidly lost due to degradation and deforestation and thus are considered the second leading cause of global warming, contributing nearly one fifth of the total annual emission of greenhouse gases[1]. In dry years, forest and peat fires in the Amazon and Southeast Asia raise this total to as much as one-third of global emissions[2]. It is further estimated that if tropical deforestation continues at its current rate, approximately 430 billion tons of carbon currently stored in tropical forests will be released into the atmosphere[3]. This will result in the loss of an enormous part of the world's biodiversity, as well as the loss of environmental services and associated livelihoods for millions of indigenous people and forest dependent communities.

To address these problems, among other initiatives, efforts are underway to reduce emissions from deforestation and forest degradation (REDD). The basic idea behind REDD is simple: countries (and communities) that are willing and able to reduce emissions from deforestation and degradation should be financially compensated for doing so. In this context, the REDD mechanism is also being proposed as a tool with the potential to deliver much more than simple reductions in in greenhouse gas emissions. It could simultaneously address climate change and rural poverty, while conserving biodiversity and sustaining environmental services. With this additional advantage of the proposed mechanism, it is now known as REDD+.

However, while the scheme holds promise, the implementation mechanism of REDD+ has yet to be streamlined, as many fundamental issues remain unresolved. While many technical aspects related to the assessment of forest degradation and

[1] http://www.countercurrents.org/nazareth201009.htm

[2] Page S E, Sigert F, Riley J O, Boehm H-DV, Jaya, A, Limin S (2002). The amount of carbon released during peat and forest fires in Indonesia during 1997. Nature 420:61-65

[3] http://www.whrc.org/Policy/BaliReports/assets/GettingREDDRight.pdf

deforestation are still being debated, a fundamental prerequisite for the success of REDD+ is the need for increased understanding, improved awareness and capacity building of all forestry sector stakeholders about the proposed mechanism, particularly that of the poor living in and around forests. Those with the most direct interest in the overall welfare of forest resources are people whose livelihoods are the most closely linked to those resources. These include forest managers, local governments, forestry officials, local NGOs and civil society organizations concerned with forest management at the grassroots level, and above all forest dependent households, and those most vulnerable such as indigenous peoples, landless, women and children. These local actors are referred to in this manual as '*grassroots forest stakeholders*'. Therefore, to make REDD+ into a comprehensive and functional tool, it needs to embrace an inclusive bottom-up approach to design and implementation. Fundamental to this approach is achieving optimum participation of grassroots forest stakeholders by ensuring dissemination and comprehension of information on REDD+ though an accessible, flexible and dynamic format that meets specific and practical needs.

In Nepal, efforts are already underway at various levels, from national to community level, to introduce the concept and generate feedback. Having a strong foundation and a culture of community forestry, any intervention related to forest conservation in the country obviously needs a bottom up and inclusive approach. There is a strong need to provide updated information on REDD+, raise awareness, and build the capacity of the concerned stakeholders for appropriate development of the mechanism and its effective implementation. However, since the concept of REDD+ is still evolving, there is a serious lack of adequate resource materials and even competent human resources to build the capacity of stakeholders, informing them about how the mechanism is likely to evolve and it will impact them.

This facilitators training manual has been prepared as an attempt to address the growing needs of capacity building for REDD+ in Nepal. The major objectives of this manual are to create a human resource base, which can facilitate the training and capacity building of the forestry sector grassroots stakeholders, preparing them to contribute in the evolving process of REDD+ and ultimately make them able to get benefits from the mechanism. It is important to clarify here that this is not the first manual of its kind for REDD+. There are a number of other manuals and similar resource materials available, but in the context of Nepal, this is the first comprehensive manual for building the capacity of training facilitators at the national and sub-national level. Therefore, while preparing this manual, the earlier available material such as a manual prepared by RECOFTC for its earlier project funded by SDC for grassroots awareness raising for REDD+, and other similar material was sourced from various organizations in the country and also from the internet. Moreover, we followed an approach of learning by doing while preparing this manual. The manual preparation team participated and contributed actively in the national level training of trainers, district level training programs and community level awareness raising and sensitization organized by RECOFTC in partnership with FECOFUN in the country, which were an important source of information and feedback for redrafting and modifying session plans, and content of this manual. Incidentally, some of the team members in producing this manual were also engaged in developing a REDD+ Readiness Plan Proposal (RPP) for Nepal, an added experience that was useful for developing this manual.

Aim and objective of the training manual

Aim

To develop a human resource base in Nepal that is able to facilitate and help improve understanding of national and sub-national level forestry sector stakeholders on climate change and REDD+ concept mechanism.

Objective

- Share most updated information about REDD+ and climate change to sub-national and community level stakeholders in the forestry sector.

- Equip facilitators with the method, tools and contents to facilitate REDD+ trainings and capacity building programs.

- Create, facilitate and serve as a medium to bring local community's perspective and views to national policy arena.

Who are the users of this training manual?

This training manual has been prepared for national and district level facilitators who are willing to learn and share the knowledge about climate change and REDD+ to different stakeholders in order to build capacity and raise their awareness. This training manual is meant for those who have some prior experience of facilitating training programs and are familiar with facilitation skills. This manual in no way is developed as a complete guide for facilitators, but rather to further improve and add to the experience of facilitators, particularly to facilitate various training sessions for REDD+ and climate change related training in Nepal.

Content and structure of manual

This facilitators training manual is designed to improve fundamental understanding of the target audience, mainly the grassroots stakeholders, in language on the links between forests and climate change and related aspects such as drivers of deforestation, management practices, benefit sharing, current policy debates at international and national level and proposed implementation frameworks for REDD+. In order to facilitate this, the manual has been divided into seven different modules.

These modules have been designed keeping the boundaries and nature of the subject in mind by simplifying the common understanding of climate change, followed by a greater focus on the key subjects. In other words, through this manual it is aimed that conduct of the training follows a principle of gradual learning from general to specific topics, with obvious logical linkages. In order to do so, each module has been further divided into various sessions to simplify the message.

- **Module 1** focuses on fundamental information on climate change contextualizing with existing forest management structure and inter-linkages.

- **Module 2** links the fundamental understanding with that of how the REDD+ structure, concept and mechanism is evolving with specific reference to Nepal.

- **Module 3** describes the requirements for the developing and implementing of REDD+ mechanism.

- **Module 4** has further focused on the requirements in terms of looking into the current forest management structure in the country and what challenges exist in order to make REDD+ workable in the country.

- **Module 5** moves a step forward by focusing on implementation mechanism of REDD+ in the country and its management strategies within existing forestry management systems, looking into forest resources rights, including tenure, ownership and benefit sharing and socio-economic differentiations.

- **Module 6** takes a futuristic approach by focusing on how various issues discussed in module five need to be considered in order to maximize the benefits from the proposed REDD+ mechanism, looking into stakeholder structures, institutional structures and capabilities and existing policy frameworks.

- **Module 7** focuses on summarizing training programs by synthesizing the discussion from all the above modules, and feedback from training participants and resource persons in order to further incorporate the same to improve the training manual.

The structure of modules and their linkages has been designed in order to keep a logical sequencing and also improve the participant's level of understanding in the local context. However, if a facilitator feels so inclined, the sequencing of various modules can be modified according to the participant's level of understanding, available training materials and time.

How to use this training manual

Each of the training modules is further divided into different sections in order to facilitate the use of the manual. Users of this manual will, of course, need to decide on the specific module and section and available time in hand. Accordingly, the facilitators will have to then prepare for the topics/sections to be covered, by looking into objectives of specific sessions, time allocated for the same, suggested methods and approach, proposed session activities, and keep related information material ready. It is suggested that facilitators keep all the related information ready with them, including case study examples, preferably those which participants find easy to relate to within their own context. The facilitator may also think of using some additional methods such as games and simulation techniques involving participants to explain certain sections. However, for effective use of such tools, within limited time schedule, facilitators should plan other activities accordingly and prepare himself/herself beforehand.

How to keep updated on the subject

The REDD+ mechanism is still evolving; therefore, subjects may have to be updated over time. A number of issues remain uncertain such as how the whole mechanism

will finally develop, what will be its implementation modalities, and how the benefits will be shared. Therefore, the subjects presented in this manual are based on today's situation with respect to REDD+. Facilitators should keep updating information on various modules and sessions over time. Keeping an eye on the latest developments related to REDD+ in the international arena through newspapers, television news and other scientific and technical publications through various sources is essential. Some of the potential websites that can provide useful information on the latest developments related to REDD+ are suggested below.

- www.mofsc-redd.gov.np
- www.redd-net.org
- www.forestcarbonpartnership.org
- www.worldagroforestry.org
- www.recoftc.org
- www.un-redd.org

INTRODUCTORY SESSION

Introductory session

INTRODUCTION

There are various factors that may affect the effective delivery and impact of a training program. Therefore, creating a conducive teaching & learning environment is fundamental for delivering an effective training program. Some of the key has been factors that need to be considered include training inauguration, participants' and facilitators' introduction, and training infrastructure and management. In many cases, training inauguration sets the ball rolling, which can be done either formally or informally. A friendly environment needs to be created among the participants and between participants and facilitators. Sometimes, involving participants in logistic management of the training also increases effectiveness.

This introductory session is designed to develop a conducive teaching and learning environment by formally starting the training program, introducing each other, and assessing and understanding the "expectations" of the participants. It is also useful to share the responsibilities of training management and let the participants know about all the arrangements.

OBJECTIVES

At the end of this session:

- Training program started formally.
- Participants and facilitators know each other.
- Participants complete pre-test form developed to assess their knowledge, skill and concept prior to training as baseline data for future monitoring and evaluation.
- List of expectations from participants has been compared with training objectives.
- Formation of training management teams for effective delivery.

PREPARATION

Ensure the following materials are ready for the session:
- Materials for participants, including writing pad, pen, training schedule with session plans and name of facilitators etc.
- Place banner on a visible corner of the training hall.
- Sufficient number of training pre-test forms and handouts containing training objectives and training schedules.
- Any other resource material, related publications, including in local language.

If training needs to be inaugurated formally, identify a person, with an invitation provided well in advance and confirm his/her presence for inauguration. The inaugurations, which may involve a high profile personality, may require a plan 'B' in case the invitee is not able to attend at the last moment because of some urgent and unavoidable engagement.

SESSION ACTIVITIES

- Welcome to all participants and other invitees on behalf of the organizer.
- If situation calls for formal inauguration, request identified chief guest to inaugurate training (flashing-out banner or lighting a candle).
- A round of introductions by suggesting that the participants introduce themselves. Facilitators may think of some innovative and interesting ideas to suggest, which help in creating a friendly atmosphere right from the beginning of the training program.
- Ask all participants and invitees to write down their introduction (name, address, experiences) and their understanding of climate change in one sentence. Ask each of them to explain (or read) what they have written.
- Distribute two meta-cards to each participant and ask them to write two main expectations from the training.
- Collect meta-cards, group them (diamond ranking) and paste them on the green board. Briefly summarize their expectation.
- Present the training objectives. Link their expectation with the training objectives. Clarify (out of scope or included somewhere) if any expected topic is not covered.
- Finalize the time schedule of discussion/training.
- Distribute pre-test forms and allow them to fill out (20 minutes). Facilitate the process, answering participant questions and providing clarification where necessary.
- Ask participants to nominate members for sub-committee for various purposes (coordinator, reporter and evaluator for each day, entertainment committee, logistic support committee etc).
- List out norms and values of training.
- Distribute participants' profile format and ask them to return by the evening of the day.
- Conclude the training by allowing them to raise questions related to introductory session and respond to them accordingly.

CONCLUSION

In this session, participants understand the background and objective of the training, training schedule and training management. The session also helped participants to understand each other. This will help to enhance openness and participation during the training. The established sub-committees and training procedure will help to conduct all the sessions in a simple and effective way.

1 Participants profile

SECTION 1: Personal information

1.1 Personal information		
1.1.1	Title	Mr / Mrs / Ms / Dr (Please circle what is appropriate)
1.1.2	First name	
1.1.3	Last name	
1.1.4	Gender	Male / Female (Please circle what is appropriate)
1.1.5	Age in years	
1.1.6	Highest education level (circle, whichever applicable)	1 = High School; 2 = Technical/trade school; 3 = Diploma; 4 = Bachelors or equivalent; 5 = Masters or equivalent; 6 = PhD or equivalent
1.1.7	Telephone	
1.1.8	Email	
1.2 Official		
1.2.1	Position	
1.2.2	Organization	
1.2.3	**Mailing address**	
	Street/number	
	City/province/state/postal code	
	Country	
1.2.4	Telephone	
1.2.5	Fax	
1.2.6	Email	
1.2.7	Manager's/supervisor's name (if any)	
1.2.8	Telephone	
1.2.9	Fax	
1.2.10	Email	
1.3 Remarks (If any)		

SECTION 2: Organizational affiliation and job responsibilities

2.1 What is the type of your organization? *(PLEASE CIRCLE THE APPROPRIATE NUMBER)*

1	Government
2	NGO
3	University
4	Network/federation
5	Private
6	INGO
7	Forestry project
8	Any other *(please specify)*

2.2 What are the main activities in which your organization is involved?
(PLEASE CIRCLE THE APPROPRIATE NUMBER & YOU MAY SELECT MORE THAN ONE CHOICE)

1	Research studies in forestry
2	Policy and advocacy in forestry
3	Management of forest
4	Promoting forestry - based livelihoods
5	Community development
6	Capacity building
7	Any other *(please specify)*

2.3 What are your main job responsibilities?
(PLEASE CIRCLE THE APPROPRIATE NUMBER & YOU MAY SELECT MORE THAN ONE CHOICE)

1	Overall forest management & administration
2	Training and capacity building
3	Research and academic
4	Forestry extension
5	Project coordination
6	Technical support in forestry
7	Any other (please specify)

2.4 Have you gone through the background note of the Training Program attached with the invitation letter? *(PLEASE CIRCLE THE APPROPRIATE NUMBER & IF YES, ANSWER QUESTION NUMBERS 2.5 &2.6*	Yes = 1	No = 2

2.5 How do you expect that this training will help you in your work?
(PLEASE CIRCLE THE APPROPRIATE NUMBER. YOU MAY SELECT MORE THAN ONE CHOICE)

1	Better equipped to promote sustainable forest management with updated knowledge
2	Better understanding of climate change issues in local and national context
3	Informed decision making to minimize the impacts of climate change in forestry sector
4	Informed decision making to address the impacts of climate change on livelihoods of forest dependent communities/indigenous communities
5	Enhanced ability to organize training and capacity building programs
6	Improved management of on-going projects
7	Developing new projects with the improved knowledge

8	Better informed to promote the rights of forest dependent communities/indigenous communities
9	Any other (please specify)

2.6 Can you give an estimate of the time frame for implementation of the above selected tasks?
(PLEASE CIRCLE THE APPROPRIATE NUMBER & SELECT ONE CHOICE)

1	Next 3 months
2	3-6 Months
3	6-12 Months
4	More than 12 months
5	No idea

SECTION 3: Basic understanding on REDD+ and Climate Change

3.1 Have you heard of the REDD+ (Reducing Emissions from Deforestation and forest Degradation) mechanism/principle before enrolling for this training ? *(PLEASE CIRCLE THE APPROPRIATE NUMBER & IF YES, ANSWER QUESTION NUMBERS 3.2)*	Yes = 1	No = 2
3.2 Have you followed any training/discussions/debates on climate change and REDD+ related issues in the past year?	Yes = 1	No = 2

If yes, list the name of training and similar events related to forestry management and/or climate change. Pease give the name of the event or training and approximate number of participants. Limit your answer to five events/training.

Serial no.	Name of the event/training etc.	Approximate no. of participants
3.2.1		
3.2.2		
3.2.3		
3.2.4		
3.2.5		

3.3 Any other feedback/comments you would like to give?

2 Questionnaire for reporting basic understanding of participants on the subject matter prior to training

Part 1. Objective questions (put ✓ for the correct answer)

1. Basic understanding on climate change

Basic understanding on climate change	Level of knowledge (Tick which ever is appropriate)			
	Know and can explain	Understand well, cannot explain	Only heard but cannot explain	Not heard
Effect of greenhouse gases on earth is increasing				
Name of the greenhouse gases				
The role of forests in emission and absorption of greenhouse gases				
Concept of REDD+				
Concept of carbon trade and carbon stock in forest can also be marketed				

2. Do you believe we can get benefits from REDD+ in our context?
    a. Yes, I believe so
    b. Difficult and challenging
    c. No benefits for community level
    d. Don't know/can't say

3. Forest governance is important for getting benefits from REDD+. Who is more responsible for forest governance?
    a. Government officials
    b. Political parties
    c. Community themselves
    d. All of the above

4. Who owns community forestland?
    a. Government
    b. Individual
    c. Community
    d. Don't know

5. Who owns forest products coming from community forests?
    a. Government
    b. Individual
    c. Community
    d. Don't know

6. Our society is divided in different socio-economic and political strata that affect the access over and management of the resources.
    a. They know and can explain
    b. Understand well, cannot explain
    c. Only heard but cannot explain
    d. Not heard

7. How does this complex social structure and differential access to the resources affect benefit-sharing systems?
    a. Provides different opportunities to different people
    b. Creates the situation of domination
    c. Pushes the least benefited further backward
    d. All of the above

8. How do you think REDD+ benefits should be distributed?
    a. Directly to the communities
    b. Through government mechanisms
    c. Through civil society organizations
    d. Don't know

9. Which institutional aspects should be considered for REDD+ implementation?
    a. Existing community forestry user groups (CFUGs)
    b. Network on village development committee (VDC) level
    c. District level community forest network
    d. I do not know

FOREST AND CLIMATE CHANGE

Module

1

Introduction

In this module we will learn about the basics of climate change, including its causes and impacts, and the role of forests in mitigating the impacts of and adapting to climate change.

Objective

To build a clear understanding among the participants on the basics of climate change science, causes of climate change, its impacts and the role of forest in climate change mitigation and adaptation.

Sessions

This module has the following major sessions:

Session 1: Climate change and its impacts

Session 2: Evolution of global debate on climate change

Session 3: Forest and payment of ecosystem services

Session 4: The role of forests on climate change mitigation and adaptation

1 Climate change and its impacts

Time:

1 hour
and 30 minutes

Methods:

Short documentary
screening, preferably
showing local instances,
brain storming,
presentations, group
work and discussions.

Materials:

1. Brown sheets, meta
   cards, pin board,
   flip charts, flip chart
   stands, masking
   tape, white board
   and marker pens.
2. REDD+
   documentary,
   multimedia, sound
   system, projector
   and a laptop
   computer.

Readings:

1. Reading 1:
   Climate change and
   its impacts.
2. Effects, challenges,
   and alternatives of
   climate change in
   Nepal, Namindra
   Dahal and
   Charanjivi Bhattarai
   (Editor), National
   Trust For Nature
   Conservation, 2009.

INTRODUCTION

The natural environmental cycle is disturbed by increased population pressure and pollution. Scientific evidence has demonstrated that due to these reasons the earth's temperature has increased causing climate change. These days, the concern of the global community is more focused on the effect such a change has on all living beings. Hence, it is imperative to understand the basic elements of climate change science.

OBJECTIVES

At the end of this session, participants will be able to:

- List out the causes of temperature increases in the atmosphere.
- Prepare a list and name the sources of greenhouse gases.
- Explain locally - experienced signs and impacts of climate change.
- Prepare a list of impacts in the social, economic and physical/biological spheres due to climate change at the local and global level.

PREPARATION

- Run the documentary once, before it is shown to the participants.
- Prepare short PowerPoint presentation on climate change science and impacts, including contextual examples from in-country situation and linking them to global debates.
- Keep all the related information on climate change ready, especially those being discussed at global level.
- Keep all other training and reading material readily available.

SESSION ACTIVITIES

- Introduce session by explaining session objectives, method and required time.
- Ask participants to tell the difference between weather and climate. Encourage all the participants to respond to the question.
- List down answers given by the participants.
- Screen the documentary - Climate Change and REDD+.
- Ask participants what they have understood from the documentary. List down the responses on a white board or flip chart.
- Present the basic science, causes, and impacts of climate change using power point presentation.
- Request all participants to write down on a meta-card one indicator of climate change experienced locally.
- Clarify the global impacts of climate change and encourage participants to share their experience in the local context.
- Encourage participants to raise questions for clarification and respond to them before concluding the session.

EVALUATION

Evaluate the session asking the following questions:

- Name of greenhouse gases.
- Two major causes of climate change.
- Global impacts of climate change.

CONCLUSION

Climate change is one of the most debated issues in the development, social, economic, and political sectors. The temporary and regular change in climate is called weather and the mean of accumulated data of weather for a long period is called climate. The major indicators of climate change are a continued increase in temperature and the change in time, duration and pattern of precipitation. Due to climate change, many impacts are seen not only at the global level but also at the local level. Example of the local level impacts include an increase in size of lakes in the high mountains due to rapid snow melting; a change in mountain river flow; landslide calamities; a decrease in rainfall days; an increase in the length of the dry season; an increase of various diseases; and a decrease in agriculture production. These changes pose additional threats to the livelihoods of all people and for bio-diversity conservation. The main reason for climate change is an increase in the amount of greenhouse gases in the atmosphere. Carbon dioxide is one of the major gases among them. The main sources of carbon dioxide in the atmosphere are deforestation and forest degradation and burning of fossils fuels.

FORWARD LINKAGE

Close the session by briefly mentioning that to reduce climate change and its impacts, global action is taking place. This will be discussed in the next session.

2

Evolution of global debate on climate change

Time:

1 hour
and 30 minutes

Methods:

Brain storming,
presentation of timeline
and major achievements
and discussions.

Materials:

1. White board, marker
   pens, brown sheets,
   masking tape.
2. Multimedia and a lap
   top computer.

Reading:

1. Reading 2:
   Evolution of global
   debate on climate
   change.

INTRODUCTION

In the previous session, we discussed basic information on climate change - the causes and impacts at the local and global level. The participants need to understand how climate change became a global issue, its evolutions, international debates and outcomes. So, in this session, there will be a discussion on the historical background of the discourse of climate change, major treaties and the context of adaptation and mitigation.

OBJECTIVES

At the end of this session, participants will be able to:

- Explain the evolution of the climate change debate at the international level.
- List the major achievements of international conferences, conventions and protocols related to climate change.
- Discuss the role and responsibility of developing and developed countries on mitigation and adaptation of climate change.

PREPARATION

- Prepare presentation containing timeline of climate change global debates and major achievements.
- Ensure necessary training material and copies of reading material are available for the session.

SESSION ACTIVITIES

- Introduce the session explaining objective of the session.

- Ask participants to recall the discussions in the previous session - climate change science, causes and impacts. Relating the discussion, ask participants what they know regarding the international debate/conference on climate change.
- Based on the plenary discussion, list out the major international convention dates and venues on the white board (Earth Summit, Kyoto Protocol, Montreal, Bali Action Plan, Copenhagen conference).
- Present the prepared presentation materials - timeline of climate change global debates and major achievements.
- Facilitate discussion on the concept of mitigation and adaptation to address the climate change issues. Clarify for any confusion.
- Linking with various conventions, discuss the roles and responsibilities of national action to combat climate change.

EVALUATION

Evaluate the session asking the following questions:

- When was interest first shown regarding climate change at the global level?
- Describe achievements of any two major conventions on climate change.
- What are the roles of developing and developed nations to reduce the global impact of climate change?

CONCLUSION

The present discourse on climate change was started in the early 1990's. Since then, it became a concern to all. As a result, various negotiations and conventions were made. In 1997, the Kyoto Protocol on climate change was endorsed, which requested that the major developed countries reduce carbon emissions to a certain level by 2012. Some countries, including the USA, didn't sign the protocol. A recent conference of parties (COP), which was held in Copenhagen, Denmark in 2009, could not come to a binding agreement on climate change. The anticipated achievements were not met - for example, agreeing to policy, rules and programs that could be implemented globally. We expect that future conferences will address those issues.

FORWARD LINKAGE

Forests and ecosystems play an important role in climate change. Close the session informing that forests and a payment mechanism for ecosystem services will be discussed in the next session.

3

Forests and payment for ecosystem services

Time:

1 hour
and 30 minutes

Methods:

Presentation, case study reading, brainstorming, small group work and discussions.

Materials:

1. Flip charts, brown paper, marker pens, white board, masking tape, meta cards.
2. Multimedia and a lap top computer.

Reading:

1. Reading 3: Forests and payments of ecosystem services.

INTRODUCTION

One of the main achievements of the Bali conference was the proposition that reduced deforestation and forest degradation was a cost-effective means to reduce greenhouse gas emissions, mainly from the land-use sector. In the subsequent discussions and debates at various forums, it was also realized that the role of forests should be looked into beyond reducing greenhouse gas emissions, since they play many other important roles such as providing various environmental and social services, including watershed functions, soil conservation, biodiversity values, aesthetic values and above all livelihood support to poor and marginal forest dependent communities, who are the most vulnerable to climate change impacts. Therefore, it is imperative to learn about the ecosystem services offered by forests and how a payment mechanism for these services is designed to ensure conservation and sustainable use of forest resources.

OBJECTIVES

This session is designed to enhance understanding of participants on ecosystem services of forests and its payment mechanisms. At the end of this session participants will be able to:

- Explain the role of forests for livelihood support and biodiversity conservation.
- Prepare a list of ecosystem/environmental services that forests provide.
- Give some examples of Payment for Ecosystem Services (PES).

PREPARATION

- Prepare sufficient copies of case studies.
- Develop an idea for group work (group structures, representation in different forms, gender balance, homogenous/heterogeneous).

- Prepare a well - articulated but simple presentation explaining the concept of PES.
- Keep ready all reference and reading materials on payments for environmental services for distribution among participants.

SESSION ACTIVITIES

- Introduce session by explaining objectives, methods and time of the session.
- Distribute two case studies to the participants and allow them 15 minutes for reading.
- Ask question to participants - what have you understood from the case study? Write down answers on white board/flip charts. In the end, summarize the essence of the case studies.
- Divide the participants into 3-4 small groups, according to the number of the participants. Ask them to list out ecosystem services provided by forests on a flip chart.
- Ask each group to present their lists and allow short discussion on what kind of services can really be measured and claimed for payments.
- Linking to the group discussion, share the presentation of PES with the participants, highlighting Forest Carbon trade as one of the PES mechanisms.
- Before concluding, encourage participants to raise questions for clarification and respond accordingly.

EVALUATION

Evaluate the session asking the following questions:

- What are ecosystem services?
- How can payment be made for ecosystem services?

CONCLUSION

Many useful goods and services are available for human life from the ecosystems of forests. The payment made by the users for these services is called a Payment for Ecosystem Services (PES). Though this concept is effective in an open market system, the complex economic, legal and social structure in Nepal makes it challenging to implement. However, we can learn from various examples that if a legal structure exists to pay directly to ecosystem service providers, especially to the local communities and organizations involved, there will be positive impacts on both the livelihood of communities and biodiversity conservation, helping to ensure sustainable management of forests and the environment.

FORWARD LINKAGE

Close the session explaining that in the next session we will discuss the role of forests in climate change mitigation and adaptation.

4 The role of forest in climate change adaptation and mitigation

Time:
1 hour
and 30 minutes

Methods:
Case study, fish ball exercise, presentation and plenary discussion.

Materials:
1. Marker, white board, flip charts, brown paper, masking tape, flip chart stands, meta cards.
2. Multimedia projector and a computer.

Readings:
1. Reading 4: The role of forests on climate change mitigation and adaptation.
2. Chart: Carbon cycle.

INTRODUCTION

Continuing from the previous session, this session will focus on how forest ecosystem services play a role in mitigation and adaptation of climate change impacts. In addition, we will also discuss the concept of the carbon cycle and emissions of carbon from deforestation and forest degradation.

OBJECTIVES

At the end of this session participants will be able to:

- Explain the impact of climate change on forest resources with a local example.
- Explain the role of forests on the climate change adaptation process.
- List out the sources of carbon dioxide in the atmosphere.
- Discuss the climate change mitigation role of forests.

PREPARATION

- Prepare PowerPoint presentation: Carbon cycle; prepare yourself to explain the cycle.
- Prepare list of forests services on climate change adaptation and mitigation.
- Prepare all reading materials.

SESSION ACTIVITIES

- Explain the session objectives, session activities and time.
- Facilitate discussion in plenary to list out local examples and cases on the impacts of climate change in forestry sector.
- Ask participants for their understanding of the carbon cycle. Write down the answers on the board.

- Explain the carbon cycle chart, giving additional focus on how carbon dioxide in the atmosphere is converted into wood and how wood is transformed into carbon dioxide.
- While discussing the carbon cycle, encourage participants to identify the role of forests (mitigation of emission and accumulation of carbon dioxide of the environment) in reducing atmospheric carbon dioxide.
- Select eight relatively active and knowledgeable participants to role play for a discussion group. Ask the rest of the participants to become observers. Conduct fish ball exercise. The topic for discussion is the role of forests in adaptation. Allow discussion for 20 minutes. Add on the role of forests in adaptation with examples.
- Summarize the role of forests in climate change adaptation and mitigation, allow participants to ask questions for clarification, respond and close the session.

EVALUATION

Evaluate the session asking the following questions:

- How does climate change impact forest resources?
- How does forest degradation and deforestation increase carbon emissions?
- How does a forest itself adapt to climate change and how do forests help adaptation within communities?

CONCLUSION

Forests act as both a sink and a source of carbon dioxide, and thus can contribute to an increase or decrease to the impact of climate change. Destruction and burning of forests will lead to increased emissions in the atmosphere, while reduced deforestation and forest degradation will add value by absorbing carbon dioxide, as well as providing a range of other benefits. In view of this, forests are extremely important not only in mitigating the impacts of climate change, but also supporting adaptation skills of vulnerable communities by providing them a range of services, livelihood support, cash income generation, and food security, especially during hard times.

FORWARD LINKAGE

Linking to the mitigation and adaptation roles being played by the forests, the next module will focus on the concept and structure of REDD+.

READING MATERIALS

1 Climate change and its impact

WHAT IS CLIMATE CHANGE?

Climate indicates the average weather condition of a particular place. Specifically, it denotes the average temperature and precipitation of a particular place derived from the analysis of data for tens to hundreds of years. According to the World Weather Organization, the average weather condition of a minimum of 30 years is called climate. Hence, the climate indicators generally remain stable. Climate change thus means the change in climate indicators, which should otherwise have remained stable. The measurements of temperature for about 150 years have demonstrated that the earth's surface temperature is rising. However, the rise in temperature is not equal everywhere in the world. Many people are "confused about the difference between" climate and weather. It is necessary to understand the difference between weather and climate to understand climate change. Weather denotes the short term situation of temperature, wind, and precipitation. These elements change continuously. For example, due to solar temperature from morning to evening, the atmospheric pressure, cloud, and wind speed change continuously. This is a regular natural process. Similarly, weather changes according to seasons is a natural phenomenon. Therefore, weather change should be understood differently from climate change.

GREENHOUSE GAS EFFECT

Atmosphere consists of various gases. It consists of 78% Nitrogen, 21% Oxygen, and 1% other gases. Solar radiation and solar energy come to the earth from the sun through the atmosphere. Thirty percent of solar energy radiated from the sun is lost in the atmosphere and 70%
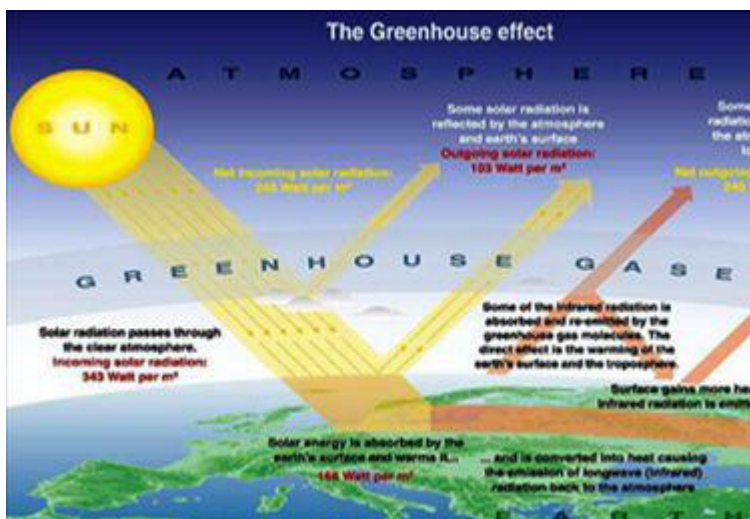
Figure 1: The greenhouse effect[1]

1) Okanagan University College in Canada, Department of Geography, University of Oxford, School of Geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge University Press, 1996.

reaches the earth surface. Out of the 70%, some is absorbed by the earth's surface, a small portion by the ocean, and some is reflected back to the atmosphere. This gas cannot go beyond the atmosphere. Gases such a these are known as greenhouse gases (GHGs). The GHGs are a natural phenomenon and essential for life on earth. In the absence of the GHGs, the earth surface temperature would remain minus 18 degree Celsius and under that situation the earth would not be suitable for human and other plants and animals to survive.

The increase in global temperatures is mainly due to the increase of the greenhouse effect. Greenhouse gases generally include Carbon-dioxide (CO2), Nitrous Oxide (NO2), Ozone (O3), Methane (CH4), Water Vapor, and Halocarbon (HC). Among these gases, Carbon-dioxide (CO2), Nitrous Oxide (NO2), Methane (CH4), Halocarbon (Hydrofluoro Carbon- HFCs), Perfluorocarbon (PFCs), and Sulpher Hexafloride are the main human induced GHGs responsible for climate change and are listed in the Kyoto Protocol. The more greenhouse gases there are in the atmosphere, the less solar radiation is reflected back from the atmosphere. The greenhouse gases are increasing in the atmosphere because of various human activities.

> **Box 1. Greenhouse gases (GHG)**
>
> Carbon Dioxide (CO2),
>
> Methane (CH4),
> Nitrous oxide (NO2),
> Ozone (O3),
> Halocarboons
> (HC) – Mainly
> Hydrofluorocarobon
> (HFC) and
> Perfluorocarbon (PFCcs)
> Water Vapour
> Sulpher Hexa Fluoride
> (SF6)

Emissions of greenhouse gases are increasing due to the burning of fossil fuels, industrialization, expansion of transport facilities, high production and use of automobiles, excessive use of energy, modernization of agriculture (paddy, irrigation, use of pesticides and chemical fertilizers), land use change, and increasing use of and attraction to luxurious commodities. It is estimated that deforestation and forest burning contributes more than 17% to the total GHG emissions, and is third largest emitter after energy and industrial sector.
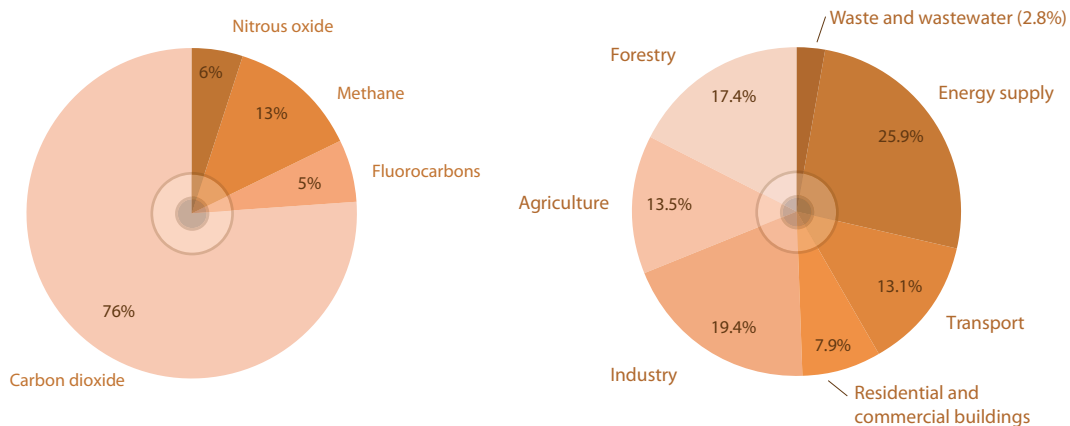
Increased amounts of GHGs in the atmosphere and a blockage of a large amount of reflected heat from the earth surface to the atmosphere has caused global warming for the last few decades. For estimation purposes, all GHGs will be converted to carbon dioxide. During the initial stage of the industrial revolution during late the 1800s, the amount of CO_2 in the atmosphere was only 280 part per million (ppm). This amount was increased to 379 ppm in 2005. In the past 650,000 years,

the content of CO_2 in the atmosphere fluctuated from 180 to 300 ppm. During these years, the rate of increment was higher compared to the previous average. The data of the last 100 years clearly indicates that the earth's surface temperature is rising but the rate is not uniform throughout the world.

INDICATORS OF CLIMATE CHANGE

In general, a change in temperature; and the amount, intensity, type and magnitude of rainfall, as well as rises in sea levels are considered key indicators of climate change. Increased incidences of natural disasters such as floods and droughts are also linked to climate change. It is reported that precipitation has started in the polar region and in high altitude areas where snow fall was common in the past. High intensity and heavy rainfall incidences are increasing. Long periods of drought are also common. Table 1 below shows the temperature rise in last 100 years in Nepal.

Table 1: Regional wise increase in temperature (degree Celsius) in Nepal during last 100 years.

Region	Winter (Dec-Feb)	Pre-monsoon (Mar-May)	Monsoon (Jun-Sep)	Post monsoon (Oct-Nov)	Annual (Jan- Dec)
Trans-Himalayas	0.12	0.01	0.11	0.1	0.09
Himalayas	0.09	0.05	0.06	0.08	0.06
Middle Hills	0.06	0.05	0.06	0.09	0.08
Siwalik	0.02	0.01	0.02	0.08	0.04
Terai	0.01	0	0.01	0.07	0.04
Nepal	0.06	0.03	0.051	0.08	0.06

Record of 1977-1994

Source: Updated after Shrestha et al.; 1999

As shown in the table above, the statistics from 1977 to 1994 clearly indicate that the average temperature increase in Nepal is 0.06^{o}C. Among the ecological regions, there is an average increase of 0.08^{o}C and 0.04^{o}C in Himalayan and Terai regions respectively. The modeling indicates that the rate of temperature rise is very high. This modeling indicates that the temperature increase rate of Nepal by 2100 will be 40°C in winter and 30°C in summer. The temperature rise in the Himalayan region will possibly be higher. As a consequence, there is a probability of change in precipitation cycle, long drought, and higher precipitation.

Rhododendron bloom in December

One of the important tree species of Rolpa district in the high Himalayan region, Rhododendron, have started showing irregular behavior during recent years. Rhododendron generally blooms in February and March. However, for the past few years, its flowering has been reported as early as December. Local villagers from Ward No. 2 of Gam VDC of Rolpa district link these abnormal changes in the flowering season to the effects of climate change.

Due to climate change, the period of cold days and nights are decreasing and extreme hot days are increasing. The incidence of heat waves is increasing in the summer season and cold waves are increasing in the winter season. The following indicators are being observed in Nepal:

a. Days and nights are warmer compared to the past few decades.
b. Number of cold days and nights are decreasing.
c. The days with more than 100 millimeter precipitation are increasing.
d. There is a change in precipitation time and duration. Numbers of precipitation days are decreasing.
e. Glacier and snow are melting in faster rates from the important glacier lakes and snow covered areas of high altitudes. The risk of sudden outburst of glacier lakes is increasing. Study reports indicate that glaciers are shrinking by 30 to 60 meters and are becoming thinner by about 12 meters per year. In the same way, it is clearly seen that the new glacier lakes are developing and the area of existing glacier lakes are increasing.

IMPACT OF CLIMATE CHANGE IN NEPAL

As summarized in the following figure and text, climate change is likely to impact all sectors essential for human life.

WATER RESOURCES

Climate change could have a severe impact on water resources in Nepal. Due to increased temperature, the snow of the Himalayan region is melting rapidly. The risk of glacier lake outburst is increasing. Due to the increased days of heavy rainfall, problems such as flood, landslide, sedimentation, and gravel deposition in agricultural land are increasing. In addition, water flow of both river and underground water resources are decreasing. Due to increased temperature, the flow of water in the initial period may increase due to rapid melting of glacier. But, after a few years the quantity of snow decreases, resulting into reduced flow of waters in rivers. Therefore, there will be a negative impact on hydro-electricity, irrigation and crop productivity. It is estimated that a rise of 30°C in temperature will lead to 11% increase in water flow for a short period, but the availability of water will decreases in the long run, especially during winter. A study indicates that there will be an increase of 57% in the production of hydro-electricity by 2030 but this will decrease by 28% towards the end of the century with reduced flow of waters in the rivers.

AGRICULTURE

Another significantly impacted sector is agriculture. Due to the increase in temperature, there will be a favorable ecosystem in the hills for rice cultivation but due to the adverse effect on irrigation, production will not be increased. Furthermore, due to floods, cutting and inundation, there will be a negative impact on the productivity of agricultural crops. Maize production, however, will not be affected significantly. In the Terai, especially during winter, due to fog and cloud, the productivity of winter crops like potato and onion is likely to be negatively affected.
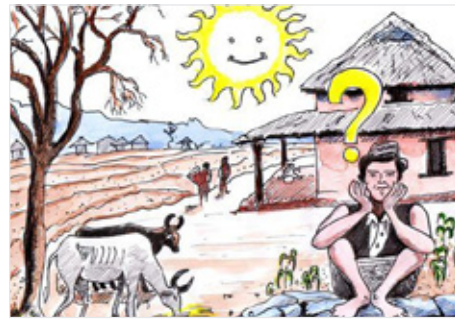
BIODIVERSITY

Due to climate change, biodiversity will be adversely affected. This will be due to an increase in temperature, upward shifting of snow line, and a decrease in water sources. There are 15 types of climates that exists in Nepal. If the amount of CO_2 in the atmosphere doubles, the number of these climatic types will decrease to 12 and in same ratio the habitat of different vegetation types will disappear. In search of a favorable ecosystem, some of the species may shift upwards and the composition

Figure 1: Climate change impacts

Disturbance in ecosystem
- Loss in biodiversity
- Impact in the habitat and capacity of wildlife
- Possibility of reduction in productivity due to change in flowering and fruiting time
- Extension and/or reduction of some species and invasion of invasive species
- Risk of conflict in society for resources

Decreased water resource
- Early dry out spring generated in rainy season or no generation of spring
- Drying out of rivers originated from glaciers or decrease snow storage
- Reduction in water discharge or rivers

Change in regular weather condition at regional and local level
- Early or late start of monsoon
- Weak or now winter rainfall

Increase non-expected incidences of weather
- Unusual winter or summer drought, wind, high intensity snow all/rain fall, drought, flood, landslides
- Glacier lake outburst
- Increase property loss due to drought, flood and landslides
- Outburst or epidemic diseases

Increase temperature in the atmosphere

Increase greenhouse gas emission due to excess use of vegetations, coal and petroleum (Carbon dioxide, Methane, Nitrous Oxide, Ozone, Halocarbon)

of biodiversity of Nepal may change more rapidly than expected. Due to this, the species which are not able to shift to the higher altitude like underground insects and heavy and big fruiting species will be under major threat. The volume of water in wetlands will also be seriously affected. Due to increased temperature, flood, landslide, soil erosion, and low water sources may cause adverse effects on the extent and quality of the wetland, which ultimately will result in degradation of wetland biodiversity. Many wetlands are major water sources and the decrease in water quantity in them may result in a reduction of water availability in water flow systems in downstream areas.

HUMAN HEALTH

There are direct and indirect effects of climate change in human health. Due to polluted water, Nepal and its adjoining countries are facing problems of various diseases like Malaria, Typhoid, Japanese encephalitis, and *Kaalajor*. People presenting with these diseases are increasing every year. Research indicates that malaria is spreading even in at high altitude. In addition, there is a possibility of an increase in cholera.

EFFORTS MADE IN NEPAL TO MINIMIZE IMPACTS OF CLIMATE CHANGE

There are some climate change mitigation and adaptation programs implemented in Nepal. For example, work is being done in the clean energy development sector. Installation of energy saving equipments in industries (like motor, pump boiler, heating equipments) is also increasing. Adoption of energy saving in production and processing is also in practice. Efforts are being made to control dust and smoke in brick factories, as well as the use of energy saving technology. Garbage collection, disposal and coverage of garbage by soil are also in practice. In the transportation sector, a ban has been imposed on three wheeler diesel tempos in Kathmandu, Pokhara and Lumbini areas.

To meet the demand in the public transport sector, the government has encouraged the use of electric three wheeler tempos and liquid petroleum gas-operated vehicles. There is a policy to issue permits to run vehicles only if they pass the Local Transport Standard 2057 (2000). Though on a small scale, production of bio fuel has also been initiated. Extensive use of improved cooking stoves is in practice. There is a rapid increase in community based bio briquette production and biogas is used for cooking. Forests are being managed under various regimes, including community forests, collaborative forests, government managed forests, and religious forests. Programs like integrated crop management, agro forestry, construction and use of runoff harvest dam, low water irrigation technology (like sprinkle irrigation) are being practiced. Some efforts are also being made to minimize the danger of rapid snow melt and glacier lake outburst, such as the conservation of the Chlo Rolpa Glacier Lake. In recent years, there has been an increase in dissemination of climate change information, and more awareness programs through meetings, workshops and interactions. Awareness rising through the media is also going on. Nepal is now in the process of preparing National Climate Change Policy.

WAY FORWARD FOR MITIGATION AND ADAPTATION OF CLIMATE CHANGE

In order to fight against climate change problems, Nepal should not delay on using international opportunities for reducing carbon emissions and exploring means to minimize impacts of climate change at the local level. Research and studies should be carried out on the complexities of climate change through effective collaboration and coordination of the Government, Non Government and private sectors. There is a need to develop strategy to respond to climate change through debates with a range of stakeholders from community level to the national level.

For this, the following are the major tasks:

a. **Forest management and carbon trade**

   As forests help maintain temperature and store more than 60% of ground carbon in trees and plants, forest management and plantations are considered effective means for carbon sequestration. Carbon emissions from forests will be reduced significantly if the present deforestation and forest degradation rate is controlled. For this, it will be a wise idea to promote participatory forest management practice. Necessary preparation should be initiated immediately as Nepal is qualified for carbon trade and there is an international market opportunity for this.

b. **Renewable energy development and promotion**

   There is an urgent need to minimize use of mineral oil by promoting hydro electricity and renewable energy (especially rapid expansion of bio-gas and improved cook stoves). Efficient use of energy should be promoted through identification of local and traditional technologies and promotion of the most appropriate technologies.

c. **Develop adaptive capacity**

   To minimize Nepal's risk and vulnerability to climate change, Nepal should develop a pre-information system as well as adaptation options for adverse situations. For this, the management of resettlement policies, the arrangement of emergency relief equipments, the development of a pre-information system for natural disasters, and the use of appropriate technologies for agriculture, energy production and forest management are essential. Necessary actions should be carried out for raising public awareness and poverty reduction as they increase adaptive capacity.

d. **Constitutional, policy and institutional arrangements**

   Constitutional arrangements have to ensure the rights of Nepali people to be safe from the adverse impact of climate change. Proper consideration should be given to including this as a fundamental right in the new constitution, which is under preparation. In addition, there is a need for institutional structures and mechanisms to implement the policies, legislation and regulations related

to climate change in Nepal. There is also a need for policy and institutional arrangements for promotion, extension and mainstreaming of innovative activities carried out by different communities and institutions. The institutions developed for these should have the capacity for international carbon trade regulation, monitoring and evaluation.

e. Research and development

Scientific research and development are essential for developing policy and planning for climate change adaptation and mitigation. Involvement of the public, experts, policy makers, professional institutions and individuals is essential in research and development activities. Based on the research findings, standards for carbon emissions for industries need to be developed and implemented.

f. Protect Nepal's benefit in the international process

In relation to climate change, different processes exist under the Kyoto Protocol, and other market based opportunities. Nepal should involve itself in those processes and advocate for its benefit and explore new opportunities. The available financial resources from the international community and the global market can be used for carrying out many activities so that Nepal can adapt and mitigate climate change.

g. Clarify the roles of stakeholders

Efforts should be made by the stakeholders of different levels to address the problem of climate change. For effective management of coordination, collaboration and joint works of national and local government, non government organizations and the private sector, clarification of their roles and responsibilities and their capacity development is essential.

h. Sectoral mainstreaming

In order to reduce the impact of climate change and the scaling up of adaptation activities at the national and local level, there is an urgent need to include tackling climate change in the sectoral plans of Nepal (like Master Plans/Plans related to forests, water resource, transport, agriculture, industries). Coordination and collaboration of different stakeholders for implementing such plans is also equally important.

2 International policy and legislation development process and basic issues related to climate change

BACKGROUND

The impacts of climate change are clearly being seen globally. Scientists believe that the negative impact of climate change will be even more severe in the future if greenhouse gases emissions are not reduced.

Realizing the need to address this global problem and based on the evidence of scientific research, the development of international policies was initiated during 1990s. As a consequence, the United Nations Framework Convention on Climate Change (UNFCCC) was initiated in 1992 and various protocols and agreements related to this convention have now come into force. A brief summary of the approach carried out globally is summarized in the table below:

Table 1: Summary of international climate change policy development

Events	Important arrangements and achievements	Basic issues
Signing of United Nations Framework Convention on Climate Change, (UNFCCC) at the Earth Summit, Rio de Janeiro, Brazil. Came into force: 1994 Member countries: 192	Basic principles of the convention: ▪ Maintain the greenhouse gas level in the atmosphere for a specific time period as per the commitment. ▪ Adoption of common but differentiated responsibilities as per the capacity of the nation. ▪ Support to developing nations by developed countries for inequitable and unusual load of climate change. ▪ Commitments of annexed-I and II countries for GHG reduction	Need to develop various protocols and agreements and decide by the convention of parties to implement as this is only a framework convention. Still there are disputes on necessary agreements. These disputes are discussed in next chapter.

Events	Important arrangements and achievements	Basic issues
The Kyoto Protocol 1997 Enforcement: 2005 End: 2012 Member countries: 184	▪ Commitment for reduction of GHG at least 5% by 37 annex-1 developed countries and European Union by 2008-2012 compared to base year of 1990. ▪ Three options can be adopted for GHG reduction: ▪ Through domestic emission trade and imposing carbon tax. ▪ Through joint investments with counties heading for Market Based Economy. ▪ Providing compensation to developing countries through clean development mechanism as carbon trade. Examples listed below. ▪ Replacement of traditional energy sources. ▪ Establishment of afforestation and reforestation projects.	This convention is mainly related with GHG reduction. However, this convention has also not covered all the aspects of global GHG emission reduction techniques. The Kyoto protocol does not explain about the GHG reduction mechanisms from forests except plantations. This is the reason for REDD+. There is still a dispute on whether to continue this protocol beyond 2012 with some amendment or develop a new protocol.
Adaptation Fund Established: 2007 Operation: Through World Bank Countries eligible for fund: Least developed countries	▪ Import principle of the convention: there is a need for internal cooperation among countries for adaptation. ▪ Main objective of adaptation fund: exchange of fund and support for adaptations. ▪ Nairobi action plan (2006): Risk evaluation and provide support for adaptations for least developed countries and island countries. ▪ National Adaptation Plan of Action: All developing countries need to prioritized the are for adaptation and develop implementation plan. ▪ Preparation and implementation of Community Based Adaptation Plan.	The World Bank is the fund operator for this adaptation program. Global Environment Facility (GEF), UNDP etc are the channels for fund flow to the developing countries. It is very difficult to receive fund by the developing countries through these channels. Therefore, during the negotiation process, developing countries are demanding separate agency and simple procedure for the operation of such fund.

Events	Important arrangements and achievements	Basic issues
Bali Action Plan (2007-2009)	Bali Action Plan is an additional arrangement for negotiation for the effective implementation of United Nation Framework Convention on Climate Change (UNFCCC). The following themes were planned for discussion. ▪ Arrangement of Long term Collaborative Action for implementation of convention. ▪ Clear time line and resource identification for climate change mitigation. ▪ Necessary resource identification for adaptation program. ▪ Clear arrangement for development and handover of technology. ▪ Capacity building strategy development in developing countries. ▪ Financial aspect - Develop new agreements on compensation, donation, support, market/trade etc.	According to Bali Action Plan, at the end of 2009, 15th Conference of Parties (CoP) of UNFCCC in Copenhagen should have a legally binding agreement in all these subjects but there was no consensus made in the conference between the rich and poor nations on these subjects. These subjects are still under discussion.
Copenhagen accord 2009. Proposed and signatory countries: Developed countries and Brazil, China, India and South Africa from the developing countries. Date to implement: Not mentioned	It was expected that in the 15th conference of the UNFCCC at Copenhagen all climate change related issues would be discussed and legally binding agreement would be made. However, only a simple understanding among developed countries was made. Major elements of the understanding are: ▪ Rich countries to some extent agreed to support on climate change (100 Billion US$ /year up to 2020). ▪ Agreed to minimize global warming.	Copenhagen accord came as a disputed document. None of the developing countries except Brazil, China, India and South Africa are ready to agree it. There is a demand for instead of this accord, there is a need for new accord with fair and legally binding agreement.

There is a need of active involvement of all developed and developing countries in addressing the problem of climate change globally. But to solve the problem, developed countries that are more responsible for climate change and the developing and least developed countries will have differential roles. Hence, in this debate, various countries have made alliance/group in their own interests and needs.

In this connection, 48 Least Developed Countries (LDCs) have made an alliance which is currently chaired by Nepal. The roles of this alliance include engaging in dialogue on various agreements and protocols related to CC and put proposal in favor of alliance in various meetings and conventions. Recently this alliance has raised the issue to limit temperature rise by 1.5 degree and urged to continue the prioritized development work of the LCDs in various meetings. This clarifies that participation of LDCs including Nepal is necessary while developing policies globally.

ISSUES IN GLOBAL NEGOTIATIONS ON CLIMATE CHANGE

There is still no clear agreement on tackling climate change, despite it being more than 15 years since the signing of the UNFCCC. Many issues rose during the discussion for agreement. The following are the major issues where agreement could not be achieved:

- At what degree Celsius the global average temperature is maintained by 2050? (1 degree, 1.5 degree or 2 degree).
- By 2050, at what percent the emission reduction be made compared to 1990 (50, 85 or 95).
- By 2050, what per cent of emission reduction be made by the rich countries (75-85 or 80-95 or more than 95?).
- What per cent of gross domestic product (GDP) of the developed nation or the what minimum amount be allocated for emission reduction (Copenhagen proposal: annual 100 billion US$).
- Whether the existing framework and institutions for mobilizing the climate change fund is appropriate or need to develop a new one?
- Patent rights of climate change related technologies.
- Whether to make emission reduction national target compulsory or voluntary?
- Whether or not to allocate certain time and percent for REDD+? Until when and at what per cent?
- Which mechanism to use for emission reduction? Market oriented or fund based mechanism?

Legally binding agreement can only be possible after the consensus between the rich and developing countries on the issues mentioned above.

3 Forests and payments for ecosystem services

INTRODUCTION

Payments for Ecosystem Services (PES) are becoming popular in the forestry and ecosystem sectors across the globe. This concept was initiated in the beginning of the 1990s from New York and then extended to Costa Rica. Theoretically, PES means payments to the producers of ecosystem services (especially for forest and ecosystem management) in the form of cash or other means by the users of such services. This will help regularize the traditional free access to ecosystem services (like carbon storage, watershed management, and biodiversity conservation), while also motivating the service providers for sustainable land and ecosystem management. PES is now popular in different ecosystem services like watershed conservation, improvement of water sources, biodiversity conservation, and conservation of natural beauty and carbon storage. This material is produced for familiarizing the reader with the concept of payments for ecosystem services. This material first deals with the concept of ecosystem services and payment systems and then presents some international and national examples.

ECOSYSTEM SERVICES

Different products and services useful to humans are available from forests and ecosystems. For example, watersheds and their ecosystems regularly provide various forest products and services like fuel wood, fodder/forage, timber, and medicinal herbs to local communities. In addition, ecosystems also provide various indirect services. Firstly, forests of a watershed help conserve soil and improve the quality of water sources. The people living downstream of the watershed also get benefits from these services. Similarly, the conservation and management of forest resources help in conserving and enhancing biodiversity. The possibility of ecotourism is also high in such cases as the forest and ecosystem maintain natural beauty. Forests play an important role in minimizing the impact of climate change by sequestering atmospheric carbon dioxide during photosynthesis, which is stored in the form of forest biomass. Extensive studies and research are being conducted in this field realizing the important of such services to human life. The Millennium Ecosystem Assessment (MEA), 2005, indicates that the forest
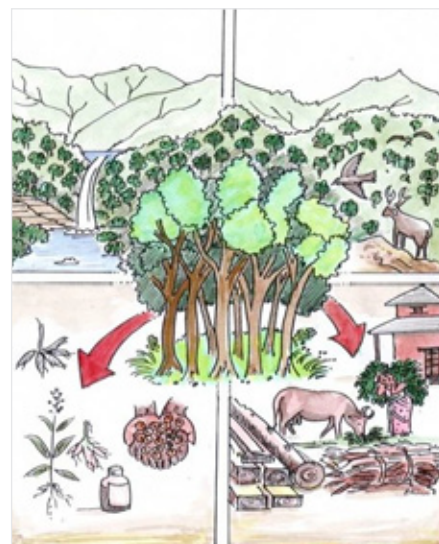
and ecosystems provide many products and services (see box 1). Despite such benefits, present forest management systems focus on increasing productivity and the availability of forest products. The other services available from forests are yet to be accounted for. Therefore, these services are being used free of cost. Due to this free access, these products have been extensively used which is causing forest and ecosystem degradation. Similarly, there has been no motivation to the forest and ecosystem conserving communities for sustainably managing such resources. Therefore, forest conversion for other use is increasing. In such a situation, efforts made by many countries in protecting forests have failed. From this, the concept of payment for ecosystem services to the producer has been developed and is used in different parts of the world.

> **Box 1. Services from forest and ecosystem useful for human beings**
>
> 1. Utility goods: different types of forest products, like timber, fuelwood, forage, fodder, wild fruits and medicinal herbs etc.
> 2. Life supporting services: climate balance, availability of clear air and water, soil erosion and flood control, pollution control, protection from natural disasters, etc.
> 3. Religious, cultural and tourism: Praying/worship, natural beauty, ecotourism etc.
> 4. Support is production: soil improvement and increase productivity.
>
> (MEA 2005:27)

According to a study made by Wunder (2005), the following ecosystem services are managed under Payments for Ecosystem Services.
1. Carbon sequestration and stock.
2. Watershed services.
3. Biodiversity services.
4. Aesthetic.

PAYMENTS FOR ECOSYSTEM SERVICES (PES)

In the open market, give and take between the user of ecosystem services and the producers of such services through forest and ecosystem management is used to define Payments for Ecosystem Services. Wunder (2005) defines PES as a type of voluntary mechanism where the service users pay regularly to the ecosystem service providers. (see Figure 1 and Box 2).

> **Box 2. Payments for Ecosystem Services is a voluntary process, where**
> - Clearly identified **ecosystem services**, by at least one **buyer**, to at least one **seller**,
> - Pays in **condition** of continuous availibility of such services.

In this concept, the producer of ecosystem services will always be motivated for the sustainable management of forests and ecosystems because of the regular benefits received. Such benefits should be at least greater than the possible benefits from other land use practices. Similarly, the service receiver should be ensured that regular services will be provided.

Figure 1: Payments for Ecosystem Services

Theoretically, the payment of services made by the users is only for the additionality. Attention must be paid to sustainability, as well as avoiding leakage of the services. Regular and continuous payment is ensured if these aspects are assured. For this, clear understanding and trust between the service producers and users is essential. If necessary, third party assistance can be taken. The third party should be an independent body which should be able to certify, facilitate and monitor the provision of the services without bias.

In the beginning, PES was an open market concept but later on it was modified and considered as a compensation and reward mechanism for forest conservation (Swallow et al. 2009). Therefore, this concept not only focuses on efficiency but also acts as a means of conservation and development of natural resources. For this, attention should be given to livelihood improvement of forest management groups and the promotion of fair and equitable distribution of resources.

Issues related to payments for ecosystem services

Parties to PES consider this system is more efficient than other ecosystem management systems, as this system runs on the concept of an open market. However, in the countries like Nepal where there is a complex socio-economic situation, PES is affected by various policy and institutional issues. Due to which, this system is not limited to direct give and take between service providers and service receivers. Hence, policy and institutional complexities should be given due considerations. To the least developed countries having socio-economic complexities like Nepal, the following issues may arise in the context of Payments for Ecosystem Services:

1. Working among small and fragmented forest management groups involves high costs and is not efficient. The analysis of existing practices indicates that there are very few examples where the poor and marginalized groups get direct benefit from a market system. In certain conditions, this may create negative impacts on livelihoods of the forest dependent communities.

2. There is still an uncertainty whether the present forest management policy and PES match. The experience of Kulekhani indicates that it is difficult to include even community forests under PES, which have proven to be a successful example of forest conservation and management in Nepal under existing policies. In this situation, there is a need to study and amend policies to incorporate PES.

3. There are not enough studies and research carried out on what should be the institutional set up for PES. Nepal also has limited knowledge, skill and capacity on PES.

International and national experiences on payment for ecosystem services

There are few examples of highly success payments for ecosystem services in the world. PES experiences from national, private and local government levels are discussed here. These examples are taken from a study report of Forest Action Nepal, SNV and the Government of Nepal published in Nepali "Nepal ma Batabaraniya sewa byabasthapanka sambhabana ra chunautiharu: purbi Rapti Jaladhar Chhetra ko Ek Anubhab". Some examples are also taken from M.Sc. thesis report of Dil Bahadur Khatri (experience of Kulekhani Watershed)

1. **Vitel Mineral Water Company of France**

   In the private sector, a mineral water company, Perial Vitel of France, pays incentives to upstream farmers and people involved in forest conservation for providing clear water. The mineral water company has established an institution named "Agrivear" for supporting farmers to modify cropping system. This company had already invested USD$420-500 million from 1993 to 2000. Farmers are motivated to adopt agricultural practices, like dairy farming, minimum use of poisons and insecticides, reduction in the number of livestock, and the production of compost from their dung and urine, which have less impact on ecosystem.

2. **Bhoj Watershed Conservation in India**

   There are two man-made lakes in Bhopal, which are only the source of drinking water for about 1.8 million people living in Bhopal. The lakes were facing various problems such as the mixing of sewerage, use of chemical fertilizers, inappropriate agricultural practices, decreased water quality, reduced storage capacity due to sedimentation, and adverse effects on water purifying machines. To minimize these problems, Winrock International India (WII) in collaboration with the International Institute for Environment and Development (IIED) developed an Incentive Based Mechanism (IBM) and supported upstream people to change from a chemical fertilizer based agricultural system to bio-based system. In this process, the decision-making capacity of the local people was improved, while at the same time their incomes increased and water quality was also improved. The sedimentation load in the lakes reduced. As a result of this, it has been possible to supply water continuously to the city. Bhopal municipality promotes forest protection and provides prizes to people living upstream to ensure continuous availability of water and the reduction of sedimentation load on the lakes from the watershed.

3. **Electricity royalty sharing in Kulekahni Watershed: an example of payment of ecosystem services**

   Indra Sarobar is the main source of water for the Kulekhani hydroelectric project, which was established during 2030s (1970ies). This artificial lake was formed by constructing a dam in the Kulekhani River. The watershed of the lake extended

to eight village development committees of Makawanpur District. Massive deforestation occurred in this watershed during the construction of the lake and power house. Plantation and soil conservation activities were initiated in this watershed with the support of various donors and the government through an integrated watershed management program. Soil erosion, flood, and landslide incidences were reduced due to the improvement in forest conditions in the watershed. This has increased the life of Indrasarobar. In addition, the amount of water in the lake is also increasing.

सन् १९८४ को विरुवा वन

सन् २००४ को विरुवा सामुदायिक वन

(Source: Upadhyaya 2005)

Figure 2: Landscape change of Kulekhani Watershed due to plantation and forest management

Another example of PES follows when decentralization was initiated in Nepal after the re-establishment of democracy in Nepal. Under the Local Self Governance Act 2056 (1999), there is a provision of allocation of 50% revenue generated from hydro electric projects to the local level. Out of this, 38% should go to the development region, where the hydro electric power station is located and 12% should go to the hydro electricity generating district. With this provision, Makwanpur district is receiving annually about Rs 25 million from FY 2058/59 (2011/2012). The District Development Committee is using this revenue for development activities of the whole district.

Local communities had started lobbying the DDC from 2061 (2004) demanding that the revenue generated from hydroelectricity should go to the local communities. With the support of Winrock International, they continued this campaign for about three years. Finally, an agreement was made in 2064 (2007) for giving a prize and compensation to the people living in upstream of Indrasarobar for their contribution to forest and watershed management. It was decided that the payment would be made from DDC out of the revenue they receive. For this, a separate directive for hydro-electricity revenue sharing and utilization was also developed. After this arrangement, the eight VDCs of Kulekhani watershed are annually receiving more than Rs 5 million for conservation and development. The received amount by the DDC is allocated as shown in Figure 3.

Makwanpur DDC has made an arrangement to deposit money in the Environment Conservation Special Fund from where payments are made to upstream communities. The fund is operated through a committee representing members from government agencies related to environment and local communities. The plan is prepared and prioritized jointly by eight VDCs annually and is submitted to the Environment
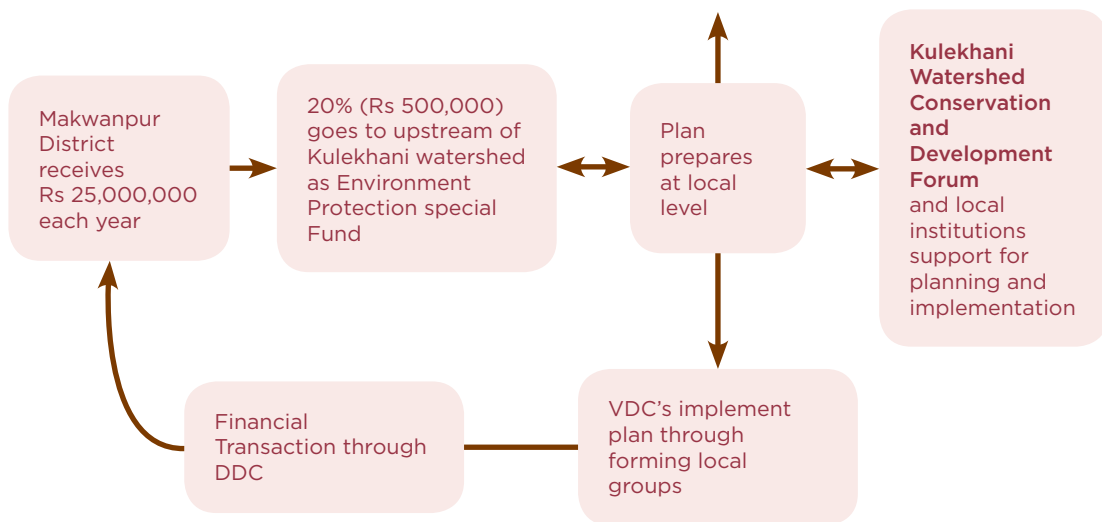
Figure 3: Payment systems of ecosystem services in Kulekhani Watershed

Conservation Special Fund for approval. The approved plan is implemented through the respective VDCs. In this mechanism, the payments are made directly by the DDC. The payment system adopted in Kulekhani watershed does not completely match the definition of Wunder as described above. Instead, it is practiced as a prize and compensation from the part of the revenue generated from hydroelectricity to the local communities for the loss of resources during construction of Kulekhani Lake and the contribution made by local communities in watershed conservation and management. The award or compensation amount is supposed to be used for carrying out conservation and development activities in the watershed.

This differs with the market based approach of PES. This approach can be taken as an effective tool of decentralization for conservation and community development. However, due to the lack of policy and legislation and the lack of elected political institutions at the local level, participation of local communities and especially community forest user groups are not active under this system. Through this practice, the institutions involved in forest and watershed conservation are not motivated well and at the same time extensive use of dozers for the construction of rural roads has a negative impact in ecosystems. The following recommendations are offered based on the study of payments for ecosystem services of Kulekhani:

1. Direct payments of ecosystem services to be made to the local institutions involved directly in forest and ecosystem conservation. This will motivate them for forest and ecosystem protection and sustainable development. In this payment system, direct payments need to be made instead of paying for the implementation of conservation plan. Based on the amount received, communities can develop and implement their own plan.

2. Payment for ecosystem services policy and legislation need to be developed.

REDD+: A TYPE OF PAYMENT FOR ECOSYSTEM SERVICES

Forests provide different types of ecosystem services. One of the main ecosystem services of forests is sequestration and storage of atmospheric carbon dioxide.

In addition, carbon dioxide emissions from forests can be reduced by controlling deforestation and forest degradation. Both activities help reduce the earth's temperature. There is a mechanism to channel payment for this type of activity from developed countries to developing countries. This mechanism is called REDD+. This is also considered a PES mechanism.

As mentioned in payment of ecosystem services, the reduction of emissions is considered as an ecosystem service under REDD+. In such situations, the developing countries that protect forests are service providers and those countries that have responsibilities to reduce GHG emissions are service users. The developed countries pay developing countries based on the emission reduction through reducing deforestation and forest degradation as well as increasing carbon stock in forests. Hence, REDD+ is a form of ecosystem services.

DISCUSSION AND CONCLUSION

It is still unclear if there is enough matching being done between policy development and the Payments for Ecosystem Services system. If we take the example of Kulekhani, under existing policy, the user groups, who are successful in conservation and management of community forests, are not getting proper benefits from Payments for Ecosystem Services. In this situation, policy and appropriate institutional arrangements should be developed by an in depth study and analysis of existing policies and institutional frameworks for REDD+, including implementation in Nepal considering how the local communities and specially the forest dependent and disadvantaged groups could benefit from it.

REFERENCES

Bushley B.R. and Pokharel B. (2009) '*From Watershed to REDD: Multilevel governance of PES schemes in Nepal*'.

Hemanta Ojha, Rajan Kotru, Laxmi Dutta Bhatta and Dil Raj Khanal (2066): *Nepal ma batabaraniya sewa byabasthapanka sambhabana ra chunautiharu: Purbi Rapti Chhetrako Ek Anubhab (in Nepali)*

Khatri, D.B. (2009) '*Compromising the Environment in Payments for Environmental Services: An institutional analysis of mechanisms for sharing hydroelectricity revenue in Kulekhani watershed, Nepal*'. MA thesis. The Hague: Institute of Social Studies.

Patterson, T.M. and D.L. Coelho (2009) '*Ecosystem Services: Foundations, Opportunities, and Challenges for the Forest Products Sector*'. Forest Ecology and Management 257(8): 1637-1646.

Swallow, B.M., M. Kallesoe, M. van Noordwijk, C. Bracer, S. Scherr, K.V. Raju, S. Poats, A. Duraiappah, B. Ochieng, H. Mallee and R. Rumley (2007) '*Compensation and Rewards for Environmental Services in the Developing World: Framing Pan-tropical Analysis and Comparison*'. ICRAF Working Paper no. 32, Nairobi: World Agroforestry Centre (ICRAF).

Upadhyaya, S.K. (2005) '*Payments for Environmental Services: Sharing Hydropower Benefits with Upland Communities*'. RUPES Kulekhani Working Paper no. 1, Kathmandu: Winrock International.

Wunder, S. (2005) '*Payments for Environmental Services: Some Nuts and Bolts*'. CIFOR Occasional Paper no. 42, Jakarta: Centre for International Forestry Research (CIFOR).

4 The role of forests in climate change mitigation and adaptation

INTRODUCTION

Forests have both positive and negative roles in climate change. Forests play an important role in climate change mitigation as a sink, but if not managed properly, they work as a source of carbon dioxide. In addition, forests play important roles in the way humans and other living beings adapt to climate change. However, if not managed properly, forests can also exacerbate climate change. This reading material tries to highlight the roles of forest in climate change mitigation and adaptation.

IMPACT OF CLIMATE CHANGE ON FORESTS

Climate change has both positive and negative impacts on forests. The negative impact generally includes reduced growth rate, increased disease and pests, and a reduction in the survival capacity of plants. The introduction of new species in cold places due to an increase in temperature is a positive impact. In a study carried out in the United States, the growth rate of pine species may be reduced by up to 31% because of climate change. The reduction in growth has a negative impact on the volume of wood. The study also shows a high mortality rate of tree species due to climate change. The chances of mortality for the weak and younger seedlings will be high. The capacity to tolerate climate change is higher in insects than the plants being attacked. This means, as climate change worsens, insects and other microbes attack. There is a high chance that these insects and microbes will spread to another area. The chances of forest fires will also be very high due to the limited moisture content in the atmosphere and ground surface.

The changing climate also affects forest health. Weak plants and single-crop plantations have limited capacity to resist disease and insect attack, generating a need to promote mixed forests to improve forest health. Other means of adaptations are to maintain forest density, remove surface materials from forests that promote forest fire, and minimize competition. The capacity of a forest to resist disease and forest fire increases if the forest density is normal.

The above discussions highlight the negative impacts of climate change on forests and how adaptation capacity can be developed. Now, let us discuss the positive impacts of forests on climate change.

THE ROLE OF FORESTS IN ADAPTATION

Forests are an important component of an ecosystem. Forests play an important role in sustaining the daily life of human beings and other creatures on the planet.

In addition to helping mitigate climate change, forests provide different services to forest - dependent communities. The role of forests in adaptation are summarized below.

- There are several examples to show forests providing various foods during a time of famine. In the absence of normal food, people eat wild products like yams, different types of leaves, weeds, and fruits. This practice is not so extensive in Nepal but studies show that villagers in South East Asian countries collect and eat more than 130 types of food from forests.

- Increased productivity of different types of forest products (for example, wood, fuelwood), including other non-timber forest products, is possible from a better managed forest. Income generated from the sale of surplus forest products in the market can be utilized for livelihood improvement of the communities. This income can be used for climate change adaptation.

- The services provided by forests, including soil conservation and biodiversity conservation, may fight climate change. The positive change in water quality and quantity due to forest conservation may provide positive impacts on human health, agriculture, and industries.

- Similarly, in an emergency, forests provide shelter and food/forage to domestic animals and wildlife.

THE ROLE OF FORESTS IN MITIGATING THE IMPACTS OF CLIMATE CHANGE

Prior to discussing the roles of forests In climate change mitigation, it is important to understand the carbon dioxide cycle, which is the main source of GHG. A total of 750 Petagrams of carbon dioxide exist in the atmosphere. The sources of the carbon dioxide in the atmosphere are deforestation and forest degradation, land use change, respiration inside the soil, respiration of plants, carbon emission from the ocean, burning of oil and fossil fuels, and volcanic eruptions (see Figure 1).

Figure 1 illustrates the process, sources, and quantity of carbon dioxide released into the atmosphere and sequestration from the atmosphere. Deforestation and forest degradation contribute a significant portion of GHG emissions. Plants use carbon dioxide from the atmosphere, water, and solar energy in the photosynthesis process (food preparation process). O_2 releases in the atmosphere and glucose is formed

Figure 1: The carbon cycle
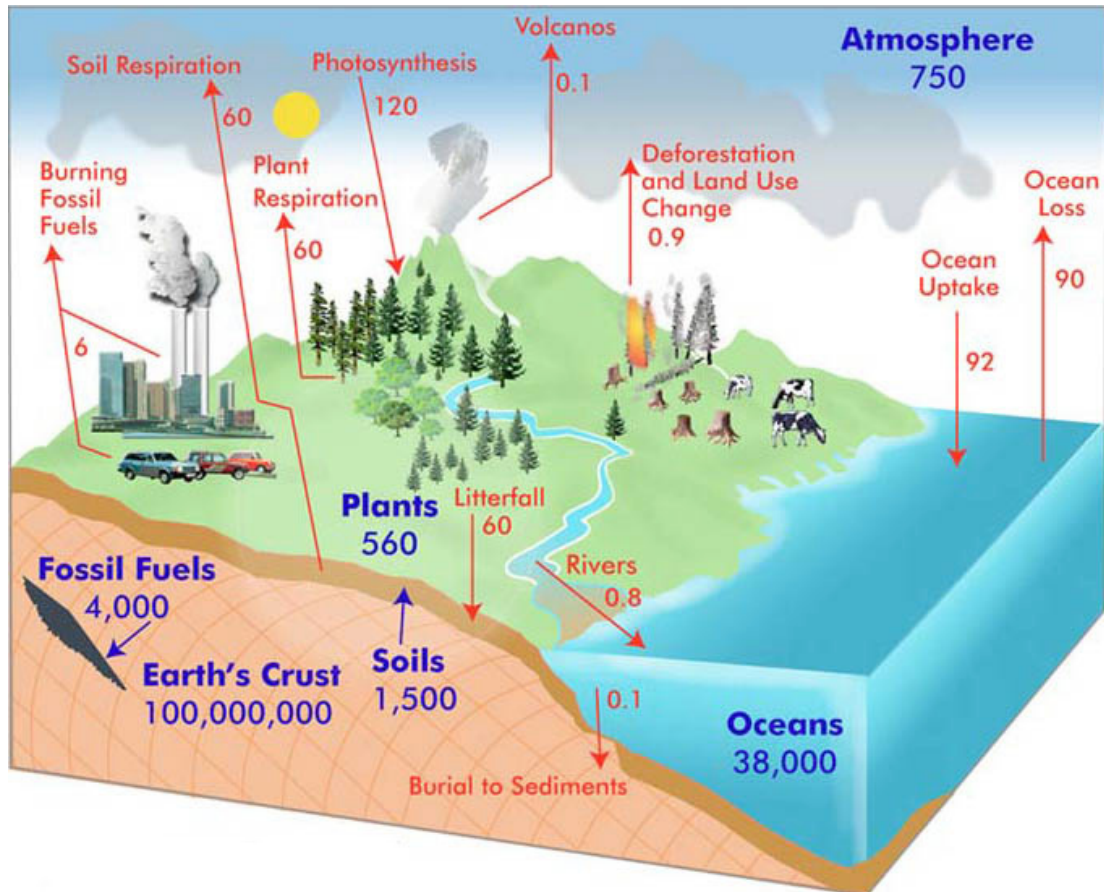
Legend
Units: Petagrams (Pg) = 10 ^ 15 gC
· Pools: Pg
· Fluxes: Pg/year

Source: University of New Hampshire, GLOBE Carbon Cycle (2007): *The Carbon Cycle*

during the process. The main constituent of glucose is carbon, which ultimately converts into wood. This means carbon is the major constituent of wood. If carbon dioxide is converted into a solid form it does no harm. There are two ways to capture the atmospheric carbon dioxide: (1) through the process of photosynthesis of the plants on the earth's surface; and (2) through the process of photosynthesis of plants in the ocean.

Though many scientists are conducting research on how to reduce atmospheric GHG, there are no proven sources other than the forest and water bodies. No efforts have been made in the ocean as it is a very extensive area. However, some efforts are being made for controlling the destruction of plants and other living things in the ocean. Evidence shows that forests are important for carbon sequestration. Hence, investment in this sector is increasing.

In summary, forests play dual roles in relation to the emission of GHG, which is the main source of climate change:

1. Destruction of forests emits GHGs. Deforestation and forest degradation not only reduce the number of trees absorbing carbon dioxide from the atmosphere, but carbon dioxide is also released during burning or decomposition of plant matter.

2. In contrast, carbon dioxide emissions can be reduced by conserving forests from deforestation and degradation. The higher a forest's conservation/expansion, the higher the amount of carbon dioxide sequestration. sequestration, reducing the quantity of carbon dioxide in the atmosphere.

Forest: Cheap means for climate change mitigation

It is widely held that forest management is one of the major causes of and solution for the worldwide problem of climate change. But the Kyoto Protocol (1997) under the UNFCCC did not recognize the role of natural forest in climate change mitigation. However, the 13th Convention of Parties (CoP) of the UNFCCC organized in Bali, Indonesia in 2007 agreed on the concept of Reducing Emissions from Deforestation and Forest Degradation in developing countries, initiating the process of REDD+.

EVOLUTION OF REDD+ FRAMEWORK

Module

2

Introduction

Reducing Emissions from Deforestation and Forest Degradation (REDD+) has been a major policy in climate change mitigation for the last few years. REDD is considered a key strategy to engage developing nations in global efforts to reduce greenhouse gas emissions. This module focuses on the concept and evolution of REDD+, specific REDD+ implementation modalities and the concept of carbon trading within REDD+.

Objective

The overall objective of this module is to enhance conceptual clarity among participants on REDD, REDD+ and carbon trading.

Sessions

This module has the following major sessions:

Session 5: Framework of REDD+

Session 6: Carbon trade

5 Framework of REDD+

INTRODUCTION

The previous module was focused on climate change science, the impacts of climate change, the role of forests in climate change mitigation and adaptation, and the ecosystem services provided by forests. The concept of REDD+ has emerged to reduce greenhouse gas (carbon dioxide) emissions by protecting forests. As Nepal is one of the countries that could benefit from REDD+, it is important for us to be familiar with the basic concept and evolving status of REDD+. This session highlights the emergence of REDD+ and its development towards REDD+ as an additional incentive to forest managers to maintain the forest as a major carbon sink.

OBJECTIVES

At the end of this session, participants will be able to:

- Explain the concept and evolution of REDD+ and REDD+.
- Discuss different perspectives of the developed and developing countries on REDD+.
- Discuss investment and frameworks for REDD+ in the context of Nepal.

PREPARATION

- Prepare presentation slides on the evolution of REDD+ concept and framework.
- Keep ready pictorial flip charts and other relevant materials explaining REDD+, possibly with the contextual examples from Nepal and preferably in Nepali language.
- Be updated and informed on the latest developments in REDD+.
- Make sure that the required instruments, tools and materials are readily available.

SESSION ACTIVITIES

- Introduce session by explaining its objectives, methods of facilitation, and time required.
- Encourage the participants to recollect the discussion and important lessons from the earlier session and list them down on the white board, and clarify if necessary.
- Present and explain the materials to highlight the REDD+ concept and its evolution, including major policy decisions since the Earth Summit 1992.
- Present the lists of major greenhouse-gas-emitting countries (Annex I countries) and discuss their role in climate change adaptation and mitigation (in plenary).
- Facilitate plenary discussion on the global politics, and the costs and benefits of REDD+ and climate change among developed, developing and least developed countries.
- Ask participants to raise questions for clarification on the topic discussed in the session.

EVALUATION

Facilitators may ask the following questions to the participants to evaluate the session:

- What do you understand by REDD?
- How has REDD emerged as a major discourse and policy option in the forestry sector in general and specifically in Nepal?
- What is the difference between REDD and REDD+?
- What are key challenges for implementing REDD+ in Nepal?

CONCLUSION

The REDD+ concept has emerged to address carbon dioxide emissions resulting from the destruction and degradation of forests. Papua New Guinea and Costa Rica proposed the REDD mechanism for the first time at the 11th UNFCCC Conference of Parties (COP-11) meeting in Montreal, Canada in 2005. COP-13, held in Bali, Indonesia in 2007 approved the REDD mechanism as a cheaper way of reducing greenhouse gases in the atmosphere. Now, the mechanism is not limited to reducing emissions from the forestry sector. It is also considered as a means of enhancing carbon stocks and making livelihood improvements (i.e. REDD+). The concept has not yet been put into practice, though there are many project - based initiatives underway and many countries have developed preparedness plans for REDD+ implementation. The Copenhagen Accord, signed at COP-15 in Denmark in 2009, agreed to move ahead with the development of REDD+. However, many important issues, such as the development of a practical and realistic implementation framework for REDD+, are still not clear.

FORWARD LINKAGE

The REDD+ mechanism is moving ahead rapidly, but has not yet been implemented. The next session will discuss the concept of carbon trading, linking directly to the concept of REDD+ as a form of carbon trading.

INTRODUCTION

Carbon dioxide is the greenhouse gas that makes the most significant contribution to climate change. Therefore, sequestering and storing carbon in different parts of the earth is vital to mitigating climate change. Forests serve as both an important source and a major sink of carbon dioxide. Activities like deforestation and forest degradation emit carbon dioxide into the atmosphere. Hence, if deforestation and forest degradation is reduced, the amount of carbon dioxide emissions will also be reduced. Forests work as a carbon sink if they are conserved and managed in a sustainable way. Therefore, in the context of REDD+, it is important to understand the carbon trade concept and its relation to forest conservation and management. This session aims to describe the concept of the forest carbon trade, the types of stakeholders involved, and a possible transaction mechanism for the implementation of REDD+.

OBJECTIVES

At the end of this session, participants will be able to:

▪ Explain the meaning and concept of carbon trade.
▪ Discuss the value chain in carbon trade and list out the stakeholders.
▪ Explain how the carbon trade functions in the market.
▪ List various models of carbon trading in the international markets and their key features.

PREPARATION

▪ Prepare presentation materials and ensure it works in the multimedia system.
▪ Prepare some examples/issues and gaps in carbon trade at the local, national, and international level from the reference materials.

SESSION ACTIVITIES

- Explain the objectives, time, contents, and methods of the session.

- Have participants brainstorm on the concept of carbon trade and record all the responses on a white board. Since the key focus is also on improving facilitation skills, someone from the participants can be engaged in writing down the responses on the white board.

- Sum up the responses and clarify the general concept of carbon trade.

- Present the prepared PowerPoint slides, highlighting the concept of carbon trade and the types of markets and stakeholders involved. It is also useful to explain the kind of uncertainty that prevails at this stage in order to avoid false expectations among the participants about the existing market scenarios.

- Facilitate plenary discussion on how we can receive optimum benefits from the forest carbon trade, and what we need to do in order to optimize such benefits. It is equally important to discuss that it is most likely that forest dependent communities will have to forego some of the benefits or reuce their dependence on forests in order to protect and increase the biomass. Discuss the cost-benefit analysis communities and project proponents will need to consider around REDD+.

- Ask participants to recall the role of forests as a carbon pool. Emphasize that if forests are a carbon pool, communities who manage forests will be the primary stakeholders in forest carbon trading.

- Through plenary discussion, list the factors that need to be considered in carbon trade (such as benefits to the local communities, genuine representation, negotiating power, selection of right intermediaries).

- Request participants to ask questions for clarification.

EVALUATION

Evaluate the session, asking the participants:

- What does carbon trade mean?
- What is the role of the market in carbon trade?
- What are the different types of carbon markets?
- What are the factors that need to be considered in forest carbon trade?

CONCLUSION

Forest carbon trade is a type of payment for environmental services. Like other types of trade, carbon trade involves a seller, a buyer, and intermediaries. Two types of forest carbon trading exist: the voluntary market and the regulatory market. Companies from developed nations started to make investments in the voluntary forest carbon market especially in plantation projects to offset their carbon dioxide emissions. Later, developed countries started to engage in regulatory forests carbon markets created under the Clean Development Mechanism (CDM). REDD+ is also envisioned as a regulatory forest carbon trading mechanism. In Nepal's context, we have to pay special attention to the implications of such carbon trade mechanisms for the customary rights and benefits of local communities and indigenous peoples.

FORWARD LINKAGE

After gaining an understanding of the concept of carbon trading and the REDD+ mechanism, participants will need to learn about the mechanism in more detail. Conclude the session by explaining that the next module will focus on the requirements of REDD+ and specific aspects of its implementation.

READING MATERIALS

5 | Framework of REDD+

INTRODUCTION: REDD AND REDD+

Scientific evidence suggests that greenhouse gases, particularly carbon dioxide (CO_2), have played a significant role in increasing the average global temperature during the past few decades. Forests can both reduce and increase CO_2 concentrations in the atmosphere. They act as carbon sinks, absorbing CO_2 from the atmosphere. Alternatively, when forests are cut and burned, they release substantial amounts of CO_2. Therefore, the preservation and regeneration of forests is regarded as an essential means of mitigating climate change.

What is REDD+?

R = Reducing
E = Emissions from
D = Deforestation and
D = Degradation

+

Conservation of natural forest, sustainable forest management, and enhancement of carbon stocks

The CO_2 absorption capacity of forests depends on their management. Good management of the forest helps to increase its capacity to absorb carbon and builds the capacity of the forest-dependent communities to provide this crucial environmental service. Considering this fact, a mechanism has been proposed at the global level called Reducing Emissions from Deforestation and Forest Degradation (REDD). Under this mechanism, countries with high emissions (i.e. developed countries) would provide financial payments to developing countries for protecting and regenerating their forests, thereby reducing deforestation and forest degradation and enhancing carbon absorption. Thus, the objective of REDD is to decrease emissions from forests by providing economic incentives to their stewards.

It is expected that such financial incentives will foster sustainable forest management and enhance the livelihoods of forest-dependent communities. To ensure the continuity of such incentives, it is necessary to continually reduce emissions from deforestation and enhance carbon stocks.

The concept of REDD has now shifted towards REDD+. The scope of REDD was previously limited to only deforestation and forest degradation, while REDD+ also includes sustainable forest management and increases in forestlands.

EVOLUTION OF REDD+ AND ITS CHALLENGES

REDD+ is considered as one of the cheapest, easiest, and most reliable economic mechanisms to reduce the amount of greenhouse gases in the atmosphere. However, there are ongoing debates at the national and international levels concerning the appropriate implementation of the mechanism.

It is first necessary to understand various fundamental questions about the REDD+ policy process, such as:

- How has the concept of REDD and REDD+ evolved and how does it continue to expand?
- How could REDD+ contribute to the livelihoods, biodiversity conservation, and the equitable and sustainable development of society?
- What considerations and steps should be taken during the implementation process to ensure these outcomes?

After the world realized the urgent need for further action to mitigate greenhouse gas emissions, countries agreed to initiate some mitigation actions through the Kyoto Protocol in 1997. The concept of emissions reductions through land use, land use change and forestry (LULUCF) was born. This included emissions reductions from the forestry sector through different activities. However, a decision on which activities should be considered and how the emissions from land use could be measured effectively remained unclear. Then, the Clean Development Mechanism (CDM) was proposed and provisions made for its implementation. The CDM only provides support for afforestation and reforestation projects. Deforestation and forest degradation were not taken into account due to technical issues surrounding their measurement and accounting for leakage of carbon emissions.

The CDM did not meet expectations in the forestry sector. Less developed countries like Nepal received very few CDM forestry projects, whereas developing countries such as India and China benefitted most. As a result, the European Commission gave more importance to the participation of developing countries in emissions related activities. The concept of 'RED' (reducing emissions from deforestation) was proposed by Costa Rica and Papua New Guinea during the Eleventh Conference of Parties (COP-11) meetings in Montreal, Canada. The concept was well received, considering the significant contribution of developing countries in greenhouse gas emissions, particularly emissions from deforestation and forest degradation.

A report authored by British economist Nicholas Stern in 2006 recommended forest conservation as a more cost-effective means of mitigating climate change. The report highlighted that deforestation and forest degradation contributes more than the entire global transportation sector in GHG emissions annually.

The thirteenth Conference of Parties (COP-13) meetings held in Bali, Indonesia in 2007 held intensive discussions on Stern's recommendation and conceived of a new mechanism for reducing emission from deforestation, as well as forest degradation. Under this mechanism, the big emitters should pay developing countries that reduce deforestation and forest degradation. This concept became known as Reducing Emissions from Deforestation and Forest Degradation (REDD).

A 2008 meeting of the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the UNFCCC highlighted the need for mitigation efforts through the concept of REDD. The meeting focused on identifying the necessary institutional infrastructure for REDD implementation. The concept was close to the current concept of 'REDD+'. Under this mechanism, developed countries would provide financial incentives to developing countries for reducing deforestation and forest degradation, conservation of national forests, and enhancing forest carbon stock through sustainable management of forests. But the concept of REDD+ could

not move ahead as expected due to the technical problem of measuring carbon emissions from forests.

The COP-15 meetings formally endorsed REDD+ in December 2009. The following activities are included in the current REDD+ concept:

- Reducing carbon emissions by stopping deforestation.
- Reducing carbon emissions by stopping forest degradation.
- Forest conservation.
- Sustainable management of forests.
- Enhancing forest carbon stocks.

The concept of REDD+ is being developed further, through a series of ongoing discussions about rewarding the countries and communities who have been conserving forests for a long time. Nepalese people would receive economic incentives from REDD+ for their contribution to forest conservation. The following figure indicates the payment mechanism for REDD+ and its conditions. According to this mechanism, developing countries should verify the amount of reductions in carbon dioxide emissions from their forests. For this, they must curb deforestation and increase the forest management capacities of various agencies and institutions.

EVOLUTION OF REDD+

Concept of REDD

Conditional compensation for reducing emission from forest protection

Obligation to reduce greenhouse gasses

Transparency, additionality, leakage, permanence

Least Developed Countries

Developed and Industrialized Countries
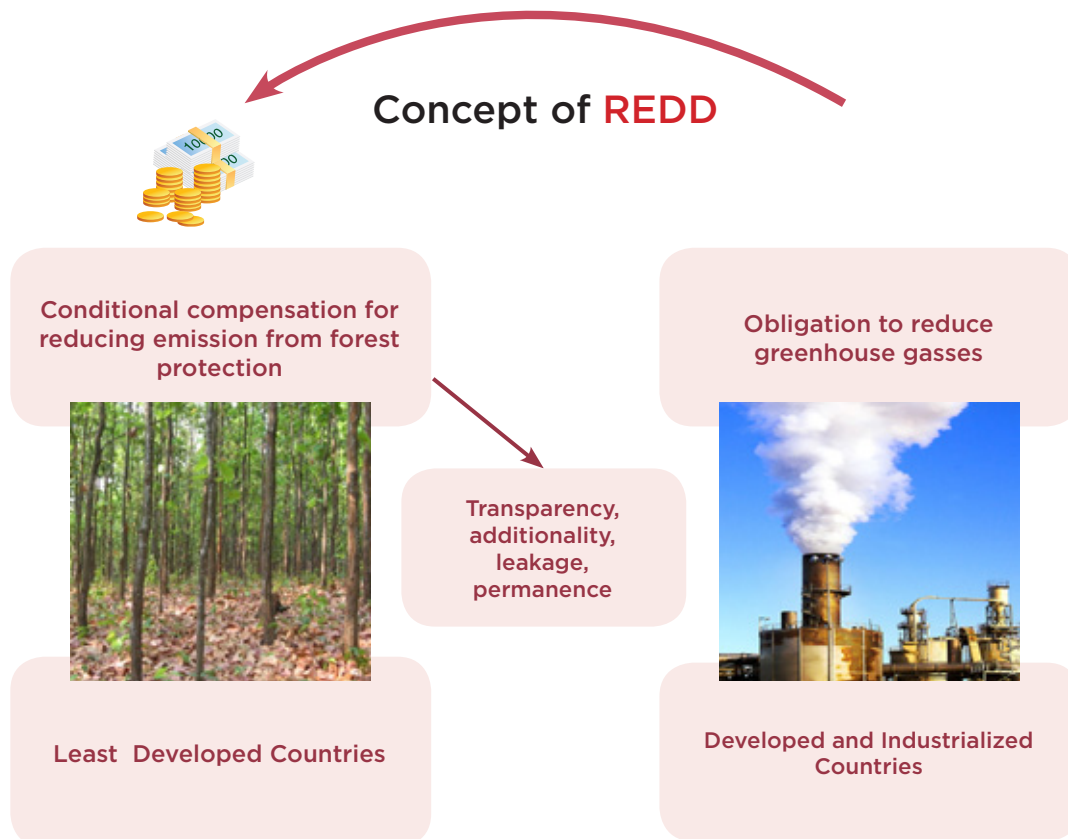
Source: Naya Sharma Poudel, 2009

The concept of REDD is similar to the idea of payment for environmental services as explained earlier.

Year	Achievements
2005	• Papua New Guinea and Costa Rica submitted a proposal at the United Nations Framework Convention (UNFCCC) COP-11 meeting to consider a mechanism to mitigate climate change and mainstream the developing countries in climate change mitigation endeavor through reducing emissions from deforestation (RED).
2006	• UNFCCC's scientific and technical counseling committee presented a technical study and its recommendation regarding the Stern report. It was supported by 8 countries. • It is agreed to initiate a discussion on the necessary rules and methods for REDD to present at the COP-13 meeting in Bali in 2007. Party countries decided to bring their concerns ahead.
2007	• Discussion in COP 13 in Bali, Indonesia moved the agenda ahead and reached a consensus regarding REDD. The concept of REDD is realized by the big emitters and incentives for developing countries to control the deforestation and forest degradation provisioned. • World Bank launches the Forest Carbon Partnership Facility to support REDD preparation and capacity building in developing countries. Similarly, the UN also commenced a REDD capacity building program known as UN-REDD.
2008	• Countries like Norway, England and Germany announce financial commitments to developing countries to assist them in addressing deforestation and forest degradation. • Establishment of various forest carbon funds in developing countries. For example African Congo Basin Forest Fund, Brazilian Forest Fund. • Various forestry related international organizations commenced discussions regarding the potential structure of REDD. • In this process, the Subsidiary Body for Scientific Technological Advice (SBSTA) of UNFCCC emphasized addressing the role of REDD in mitigation efforts. It also highlighted carbon enhancement from the forestry sector. • The REDD preparation phase begins in selected developing countries. • Agencies under the UNFCCC organized a number of sessions regarding REDD development. REDD discussions speeded up after 14th meeting of COP in Poland.
2009	• Temporary and permanent subsidiary bodies of UNFCCC discussed the REDD+ structure in different sub-groups and contact groups. This made the negotiation process easier. Throughout the year three sessions were organized in different locations. • COP-15 in Copenhagen, Denmark made an agreement in various aspects of climate change, particularly for additional legal provisions. However, developed countries could not agree on legally binding emissions reduction commitments or assistance for developing countries under the REDD+ mechanism. • COP-15 addressed many draft issues in REDD+, but it could not decide on specific technical issues, such as the appropriate methods of carbon measurement, reporting, verification, and the amount of financing to be provided under the mechanism.
2010	• It is expected that the necessary provisions for REDD+ and climate change will be finalized at the COP-16 meeting in Cancun, Mexico in December.

WHY DO BOTH DEVELOPED AND DEVELOPING COUNTRIES HAVE AN INTEREST IN REDD+?

Industries are the main income source of most developed countries. These countries are also consuming massive amounts of carbon-based (fossil fuel) energy to make their life easier and comfortable. Reductions in fossil-fuel consumption by developed countries has become a major issue in various forums and dialogues. However, it is not politically feasible to reduce emissions rapidly as this would imply a decrease in the availability of energy, forcing countries to change their behavior in a short amount of time. However, many developed countries have proposed emission reduction targets by the year 2050. Furthermore, they have proposed to pay if their emission limit exceeds the given quota. The developing and underdeveloped countries implementing REDD+ could receive these payments. Thus, this market-based mechanism would provide benefits to both parties.

Why was REDD proposed?

- The Kyoto Protocol accepted forests as a carbon sink medium but they are also a source of some carbon emissions.

- A significant percentage of the carbon emissions are from forests.

- Reducing deforestation is an effective way of reducing carbon emissions.

Although developing countries have to conserve and manage forests for their own livelihood, through the REDD+ mechanism they could receive additional incentives for forest conservation. Developed countries can reduce their own carbon emissions slowly and in a planned way, so that they should not bear the heavy economic costs of rapidly reducing carbon fuel consumption. In the future, they will pay less if they reduce their own emissions. Despite the potential win-win situation, there are a few prevalent issues in this regard:

- Some developed countries want to maintain their own level of development while restricting the industrial development of developing nations.

- Should developed countries be allowed to offset their own high levels of GHG emissions by transferring responsibility for emissions reductions to developing countries?

- Would there be a proper and accurate valuation of forest conservation and contribution of the developing countries?

- How can the contributions of developing countries to reductions in emissions from forests be accurately quantified and appropriately valued?

- Can developed countries truly fulfill their own commitments to climate change mitigation?

INVESTMENT IN REDD+

1. Investments for controlling deforestation

Deforestation is not happening due to ignorance or foolishness, but because vested interests, organizations, and individuals (i.e., stakeholders) are receiving economic benefits from forests. Therefore, to control deforestation, we have to convince all stakeholders that standing trees have greater direct and indirect economic benefits compared to felled trees.

Until now, two basic types of approaches have been practiced to control deforestation in the tropics: a regulatory approach based on policies, legal provisions and enforcement; and incentive-based approaches relying on financial payments for sustainable forest management and conservation. The regulatory approach has been considered of great importance for a long time. However, economic incentives have received increasing attention and use in recent years. Nonetheless, financial resources have always been insufficient for controlling deforestation in both national and international incentive-based schemes.

2. REDD+ investment situation

There are two basic ways that investments in REDD+ could be made in the future: fund-based investments and market-based investments. Debates about the appropriate way to invest continue. A mixed approach could be a solution for countries like Nepal.

According to the study on global forest investments by Eliasch (2008), 17 to 33 billion dollars of investment is required for the purpose of reducing 50 percent carbon emissions from deforestation by 2030. It is expected that about 70 billion dollars can be invested from the World Carbon market for controlling deforestation. In this context, an additional 110 to 190 billion dollars would be needed.

The remaining investment should be fulfilled by Annex-1 (developed) countries of the UNFCCC (Kyoto Protocol). For example, the Government of Norway has allocated 2.5 billion dollars for the next five years.

REDD+ INVESTMENT MECHANISMS

As mentioned above, there are two basic types of funding for REDD+: fund-based and market-based. These are discussed in further detail below.

1. Fund-based mechanism

The governments of specific countries invest in this mechanism. For instance, funding for this could come from auctions from the Emission Trading Scheme of the European Union. Sources of investment could also include bilateral development assistance funds from various countries, such as the Norwegian Fund.

The developing countries monitor deforestation and forest degradation at a national level using certain standards and baselines. Funding is provided according to the amount of deforestation reduced. Money received from this mechanism could be expended by the receiving countries according to their own plan.

2. Market-based mechanism

Industries from the countries indicated in Annex-1 of the UNFCCC's Kyoto Protocol could invest under this mechanism, offsetting their obligations to reduce carbon emissions (similar to the CDM). Project managers and proprietors would monitor and evaluate the investment according to standardized guidelines and methods. Every project would include investments on the basis of carbon credits received, according to the local and regional condition. Independent evaluators verify periodically at project level.

The most appropriate mechanism for REDD+ investments is still under debate. There is no straightforward recommendation. Both mechanisms have advantages and disadvantages. A comparison has been made among these two mechanisms in the following table.

Features of various market mechanisms

Effectiveness	Efficiency	Equity	Urgency
Fund-based			
Advantages - formulation of better policies in tropical countries because of the cooperation and assistance.	Advantages - Less international expenditure.	Advantages - Easier investment process from rich to poor countries.	Disadvantages - Delayed implementation process because of inter government investments.
Disadvantages - most of the government policies are ineffective.	Disadvantages - High national level expenditure.	Disadvantages - Only good for the countries with medium level per capita income.	Disadvantages - Delay in government program implementation.
Disadvantages - National level carbon leakage is visible but carbon leakage in international level is invisible.	Advantages - Assists to develop policy at government level.	Disadvantages - Fear of unequal benefits distribution (incentive) at national level.	
Disadvantages - Not attractive for private investors.	Disadvantages- High chances of policy failure and implementation mechanism.		
	Advantages - Less monitoring expenditure.		

Effectiveness	Efficiency	Equity	Urgency
Market-based			
Disadvantages - Less useful to develop good policy for rainforest countries.	Disadvantages - requires huge international investment even for the small projects.	Advantages - More investment can be delivered to the communities and forest - dependent people through market.	Advantages - Faster implementation of project activities.
Advantages - more effectiveness can be achieved in project centered activities.	Advantages - Less personal and administration expenditure.	Advantages - It is not favorable for medium level per capita income countries.	Advantages - Quick impact is seen in preventing deforestation and degradation.
Disadvantages - Unable to detect national level carbon leakage.	Disadvantages - Less assistance to develop government policy.	Advantages - Less fear of unequal benefits distribution among local communities.	
Advantages - Effective to control international leakage.	Advantages - Less fear of policy failure and implementation mechanism.	Disadvantages - danger of inequitable benefits distribution if proper mechanism is in place for verification and measurement.	
Advantages - Attractive to private investors.	Disadvantages- high monitoring expenditure.		

REDD AND REDD+ IN THE CONTEXT OF NEPAL

REDD+ can be understood as a type of carbon trading. The preliminary definition included only the reduction in carbon emissions from avoided deforestation. As per the FAO's definition, a forest is that area which has more than 10 percent crown-cover density, trees more than 5 meters high and 0.5 hectares occupied by the same species. Based on this definition, the average deforestation rate in Nepal is 0.7 percent per year. Major drivers of deforestation include encroachment, illegal timber harvesting, fire and grazing.

Nepal is facing a challenge to control deforestation and forest degradation. To benefit from REDD+, Nepal should address these difficulties and clarify various issues, such as carbon ownership, distribution of incentives/benefits, the system for monitoring, reporting and verification of carbon emissions, and specific legal provisions.

It will be good to adopt the provisions of REDD+ for Nepal if it both meets the current needs of and provides financial benefits to local communities, indigenous peoples, Dalits and women; and promotes more sustainable management and conservation of forests and biodiversity resources. The proposal submitted to the World Bank by the Government of Nepal has mentioned that a decision on adopting REDD+ or not will be made before 2012.

THE FUTURE OF REDD+

The future success of REDD+ depends on various aspects, most particularly its effectiveness at reducing emissions and enhancing forest carbon stocks, its efficiency (cost per effectiveness), and the distribution of costs, benefits and risks. These are complex issues. National level investments and the distribution of costs will play an important role in the success of REDD+. The reference scenario for deforestation and forest degradation is a technical aspect of REDD+, on the basis of which future reductions in deforestation and forest degradation will be estimated, thus determining the benefits from REDD+. As the reference scenario determines the amount of benefits, the selection of the base year will be politically contested. If such issues are addressed, there is a high chance for REDD+ to succeed in Nepal. The following are some key questions regarding implementation of REDD+ in Nepal, which will be discussed in more detail in the coming sessions.

- What are the major issues for controlling deforestation and forest degradation and what are the options for addressing these issues?

- What are the costs and benefits of REDD+ for different stakeholders?

- How can the needs of nations and local communities (i.e. for forest products) be compared to the potential financial benefits from REDD+?

- How can an appropriate reference scenario or baseline for measuring carbon enhancements (and thus making REDD+ payments) be identified and ensured?

- How can the sustainability of the mechanism be ensured, and who takes responsibility for this?

- How should the carbon emissions from forests be monitored, verified and reported?

- How can forest degradation be measured?

- How can other socioeconomic and ecological co-benefits from REDD+ be secured, and how can negative impacts be avoided?

6 Forest carbon trading: Rights over the resources

INTRODUCTION

The exchange of money for carbon sequestration and storage in forest biomass is known as 'forest carbon trading.' Other types of carbon trading and offsetting also exist. For instance, governments, corporations and individuals can invest in alternative energy technologies that reduce the amount of carbon dioxide in the atmosphere, such as hydropower, solar energy, wind power, geothermal energy, and methane and biogas plants. Such investments occur within developed countries, among developed countries and emerging economies, and from developed to developing countries. These market-based, carbon-offsetting approaches—coupled with ongoing emission reduction efforts by developed countries and corporations— aim to provide an efficient means of decreasing total carbon dioxide emissions, and thereby reducing climate change. In Nepal, investments in biogas technology for rural household use are already being made with funding from the World Bank. Other possible areas for carbon offsetting investments include electric vehicles, (micro-) hydropower, solar and wind energy systems, methane capture from landfills, and low-emission brick kilns.

Forest carbon markets are economic mechanisms in which the producers or *sellers* of carbon (e.g. forest managers and communities) receive compensation from international *buyers* (e.g. governments and corporations) for their forest conservation efforts. In return, the *buyers* obtain written certification of the carbon enhancements known as *carbon credits*. Existing and emerging carbon markets are based on past market-based schemes that have helped reduce industrial pollution levels within developed countries. Forest carbon markets involve compensation for carbon conserved and produced in forests. A detailed description of how forest carbon markets work is provided below.

There are divergent views on carbon trading. Some people see it as an efficient and effective tool for tackling one of the most significant causes of global climate change, while others see it as a form of 'carbon colonialism' that threatens to transfer ownership, access, and control of forests to governments and corporations and away from local and indigenous communities. In addition, some criticize carbon trading as a means for developed countries to transfer their moral responsibility to reduce their own carbon emissions to developing countries, thereby limiting the chances for real commitments and progress on fighting global climate change. Despite these criticisms, many developing countries perceive forest carbon trading as an opportunity to secure valuable financial resources for local communities and the forestry sector, while contributing to forest conservation and climate change mitigation and adaptation. It is important for multiple stakeholders—especially those with the most to gain or lose from carbon markets—to understand and engage in these ethical debates as climate policies evolve.

EVOLUTION OF FOREST CARBON TRADING

Forest carbon trading first emerged in developed countries as a means for corporations to achieve social responsibility aims—and thereby attract environmentally conscious customers—by purchasing carbon offsets from companies investing in reforestation projects. This arrangement is called the 'voluntary carbon market', since the corporations are under no legal obligation to purchase the carbon offsets, but rather do so voluntarily. The international community has recognized this as a viable means of reducing carbon dioxide emissions and included afforestation and reforestation projects in the Kyoto Protocol's Clean Development Mechanism (CDM). Through the CDM, Annex-1 Countries (those countries with legal obligations to reduce their greenhouse gas emissions under the Kyoto Protocol) have invested in afforestation and reforestation projects overseas. However, most of these investments have been in temperate areas and have had little impact on reducing the high rates of deforestation in tropical regions.

In this context, the concept of REDD+ emerged REDD+ is envisioned as a global carbon-offsetting scheme through which developed countries can invest in relevant emission reduction activity in developing countries through a centralized funding mechanism. However, important details of how to measure and record forest carbon, and how to ensure the equity and continuity of carbon payments, remain to be worked out.

While it is uncertain whether REDD+ will be introduced as a global mechanism as currently envisioned (i.e. based on firm commitments from developed countries for emissions reductions), it is likely that existing voluntary forest carbon markets will continue to develop and/or that new financial mechanisms aimed at reducing deforestation in tropical regions will emerge.

HOW DO FOREST CARBON MARKETS WORK?

Forest carbon markets depend on a variety of roles performed by key actors at various levels, including sellers, buyers, project developers, monitoring and reporting institutions, standard - setting bodies, verifiers/certifiers, fund managers and distributors, and governance or oversight bodies. Existing voluntary markets are based on a variety of independent standards, such as the Community Carbon and Biodiversity Standards (CCBS), Voluntary Carbon Standards (VCS), and Plan Vivo. These standards incorporate detailed criteria and indicators for measuring carbon enhancements, socioeconomic impacts, and/or biodiversity conservation. Though they share many features, each standard is distinct, developed by a separate international entity, and upheld through an independent verification process. In contrast to the voluntary markets, forest carbon offsets under the CDM are based on strict, unified international standards set by the UNFCCC, requiring rigorous monitoring, reporting, and verification procedures. As a result, the transaction costs associated with regulatory markets are typically higher than those of voluntary markets. Voluntary markets also typically involve direct transactions between an international investor and a project institution, and thus crediting (certification) happens at the project level. A basic comparison of voluntary and regulatory carbon markets is presented in Table 1.

Table 1. Comparison of voluntary and regulatory carbon markets

Aspect	Voluntary market	Regulatory market (e.g. REDD+)
Buyers	Companies/investors, individuals	Countries (companies/investors?)
Motivation	Moral (e.g. corporate responsibility)	Legal commitments
Mechanism	Afforestation & reforestation, avoided deforestation	Afforestation & reforestation (CDM), REDD+
Products	Carbon, livelihoods, biodiversity	Carbon (co-benefits?)
Standards	Various, flexible	Uniform, strict (UNFCCC)
Verification costs	Moderate (paid by buyer)	High (who pays?)
Market relationship	Forest managers sell carbon directly to foreign investors	Government or other national institution manages and distributes funds
Crediting level (baseline)	Project	National or nested

There are three basic functions involved in a forest carbon market: carbon accounting; carbon payments; and governance or oversight of the system. Different actors provide each of these functions at different levels. Forest carbon markets are performance-based mechanisms, whereby sellers are compensated based on the amount of additional carbon they can produce or preserve in forest ecosystems. Thus *carbon accounting*—involving the measurement, reporting, cataloguing and verification of carbon stocks, and potentially other indicators (of livelihoods, biodiversity and governance), from the local level (*sellers*) to the international level (*buyers*)—is critical to knowing how much carbon sellers should be compensated.

Standards for measuring carbon and other indicators are set by an independent international body. Once the additional carbon stocks are verified, the buyer receives this information and disburses *carbon payments* at a given price for each ton of carbon produced. These payments are distributed from the buyers through one or more intermediary institution(s) at different sub-national levels, based on administrative jurisdiction and/or project area, until they reach the sellers or forest managers. The overall governance of the system also occurs at multiple levels and monitors the transparency, accuracy, and equitability of both the carbon accounting and carbon payments processes at each step in the process. Note that governance is not only top-down, but also bottom-up, such that sellers and lower-level institutions also have representation, input and monitoring functions in broader governance bodies. Different institutions from government, civil society, and/or the private sector could be involved in various functions at each level.

REQUIREMENTS FOR REDD+

Introduction

Various interactions and discussions are going on to move ahead with the REDD+ mechanism. There are a few requirements (technical aspect, social and economic aspects, and policy and institutional aspect) for the implementation of REDD+ which will be discussed in this module. In addition, the available social, economical, and political structures to meet those conditions are also discussed in the module.

Objective

The main objective of the module is to enhance the understanding of participants on the requirements for REDD+ and our social and economic structure.

Sessions

This module has following major sessions:

Session 7: Basic and technical requirements for REDD+

Session 8: Socio-economic safeguards in REDD+

Session 9: Policy and institutional requirements for REDD+

7 Basic and technical requirements for REDD+

INTRODUCTION

The implementation of REDD+ is under discussion globally. For its implementation, permanent cessation of deforestation and forest degradation and insurance of sustainable forest management are major requirements. In addition to this, definite standards and processes have to be met on economic, social, environmental, technical, and institutional aspects. The facilitators as well as other related stakeholders have to understand these requirements. Basic and technical requirements will be discussed in this session.

OBJECTIVES

At the end of this session, participants will be able to:

- List out the basic requirements of the REDD+ process.
- List out the major challenges found in measurement and monitoring of technical aspects in the context of REDD+.
- Discuss the possible risks of forest carbon (stock) permanence and its management.

PREPARATION

- Prepare a presentation explaining basic and technical requirements for REDD+.
- Prepare for group work including group formation.
- Make 4 copies of case study for distribution.

SESSION ACTIVITIES

- Explain the objectives, contents, methodology and time of the session.
- Ask participants in plenary to tell the basic requirements for REDD+.
- Note down the answers and group them into three categories (Diamond ranking technical, socio-economic, and policy)

- Summarize the plenary discussions and present the basic requirements for REDD+ using multimedia.
- Ask participants to discuss what they understand by the technical aspects and requirements for REDD+ implementation.
- Note down the responses in white board.
- Develop a list of technical requirements incorporating the responses. Add any missing requirements.
- Request participants to explain the meaning of the points.
- Present PowerPoint slides on the definition and clarify the meaning of each point.
- Divide participants into four groups with 5-6 members in a group. Make heterogeneous groups wherever possible.
- Distribute the REDD+ case study of Indonesia (where the technical prerequisite of the REDD+ program had been managed) to each group.
- Ask all the groups to read the case study and discuss the below listed questions. Ask each group to prepare answers based on the case. After the group work request them to present in plenary.
  - List the major technical requirements found in the REDD+ program and the attempts made by the program to meet the requirements.
  - In the context of Nepal, how are these requirements relevant? How could it be managed? Organize discussion on the key points.
- Briefly summarize the subject discussed in the session and ask participants questions for clarification. Respond to the questions.

EVALUATION

Evaluate the session asking the following questions:

- State any three requirements necessary for the REDD+ process.
- What are the conditions that affect forest carbon storage?

CONCLUSION

There are various requirements proposed for REDD+ implementation. Countries should satisfy those basic requirements to get payment under the REDD+ mechanism. They are divided into technical, economic, social, and legal frameworks. The technical requirements help to enhance carbon stock. Additionality, leakage, permanence, verification, and baseline determination are major technical requirements. These requirements are mainly related to the sustainable management of the resource, hence it requires technical knowledge and skill related to carbon monitoring. It will be challenging for a nation like Nepal to ensure permanence and avoid leakage due to geographical difficulties and the existence of various forest management regimes and ownership.

FORWARD LINKAGE

The overall requirements and the technical aspects of the REDD+ mechanism have been discussed in this session. Conclude the session informing that the social and economical aspects of these requirements are discussed in next session.

8 Socio-economic safeguards in REDD+

Time:

1 hour
and 30 minutes

Methods:

Brainstorming, plenary
discussion, small group
work.

Materials:

1. Brown paper, meta-
cards, markers.
2. Multimedia and
computer.

Readings:

1. Reading 8:
Socio-economic
safeguards in
REDD+.

INTRODUCTION

The basic requirements, the technical aspects, and REDD+'s practicability were discussed in the previous session. As for the technical aspects, the facilitator should have an understanding of the socio-economic impacts of REDD+ and its safeguards. Therefore, in this session, the impact of the REDD+ mechanism on the poor and disadvantaged groups, the risk associated with REDD+, and the benefit sharing aspects of REDD+ will be discussed.

OBJECTIVES

At the end of this session, participants will be able to:

- Discuss the scenario with and without REDD+ in present situation.
- List the possible positive and negative impacts of REDD+ on socio-economic aspects.
- Discuss and present the potential impacts of REDD+ on livelihood and poverty alleviation in Nepal.

PREPARATION

- Prepare a presentation on methods of impact assessment and minimizing impacts.
- Make sure all the required materials for small group exercise are ready.
- Develop idea for group division for small group work.

SESSION ACTIVITIES

- Explain the objective, subject matter, methodology, and time of the session.
- Facilitate short discussion on the impact on existing forests conservation, management practices, and community rights with and without REDD+.

- Divide participants into two groups. Ask one group to list out impacts if existing forest management practice is continued or in a no REDD+ situation and another group to list out impact in forest and socio-economic conditions if REDD+ is implemented.
- Ask each group to present their findings of group work.
- Add if any important points are missing in the group work and summarize the discussion.
- Facilitate a short discussion in plenary on how the impacts are assessed and methods to minimize those impacts.
- Distribute meta-cards to participants and ask them to write 2-3 key impacts of REDD+ on livelihoods and poverty alleviation.
- Arrange all responses in 3-5 different groups (Diamond Ranking).
- Then ask participants to list methods for minimizing impacts. Allocate 15 minutes for the group exercise. Ask them to write on a flip chart or brown paper.
- Display the responses recorded on the charts and ask participants to review them through gallery walk.
- Summarize the discussion and ask participants to raise questions for clarification.

EVALUATION

The understanding of the participants can be evaluated by asking the following questions:

- How does REDD+ address the socio-economic issue in our context?
- What are the social impacts of the REDD+ implementation?

CONCLUSION

It is very important to discuss the various requirements and socio-economic impacts from REDD+ program implementation. The analysis of forest management conditions prior to the implementation of REDD+ is necessary for an assessment of positive and negative impacts. The implementation of REDD+ should continuously fulfill the forest products demand of communities. If the benefit received from REDD+ is not equitably distributed and communities are restricted from the facilities and services, REDD+ will fail to deliver positive impacts. Such social and economic impacts of REDD+ have to be measured using different methods. Though REDD+ implementation is challenging, these conditions should ensure the economic and social security of forest dependent communities, Dalit, women, and indigenous communities.

FORWARD LINKAGE

Conclude the session by quickly reviewing the socio-economic risks of REDD+ and briefly mention that the next session will be focused on the policy and institutional requirements for REDD+ and related funding mechanism.

9 Policy and institutional structure of REDD+

Time:
1 hour
and 30 minutes

Methods:
Brain storming,
presentation and
plenary discussion.

Materials:
1. White board, marker pens
2. Multimedia and computer

Readings:
1. Reading 9: Policy and institutional arrangements for REDD+.

INTRODUCTION

An effective policy framework and institutional structure are necessary preconditions for the implementation of REDD+ and realization of related benefits. These need to be adequately supported by a clarity on roles and responsibilities of various stakeholders in order to make REDD+ a workable mechanism. This session, therefore, focuses on the required institutional structures, policies, and programs for REDD+ implementation.

OBJECTIVES

At the end of this session, participants will be able to:

- Explain the necessary institutional aspects for the REDD+ implementation.
- Facilitate a discussion on policies and programs necessary for REDD+.

PREPARATION

- Prepare a presentation on policy and institutional arrangement of REDD+.
- Study policies and programs of the REDD+ process.

SESSION ACTIVITIES
- Explain objectives, methodologies and required time for the session.
- Ask participants to identify" i.e. "Ask participants to identify the institutional structures required for REDD+ implementation the institutional structures required for REDD+ implementation.
- Note down all the answers on the board.
- Draw major points of discussion and link them to the presentation topics.
- Conduct interactive presentation on policy and institutional aspects of REDD+.

- Based on the presentation, carry out brainstorming in plenary on the policy and program necessary for successful implementation of REDD+ and write down the discussion points.
- Summarize what has been discussed in the session and encourage participants to ask questions.
- Carry out analytical presentation about existing or proposed policy and program of Nepal and collect questions and suggestions from participants and discuss them further, if necessary.

CONCLUSION

The institutional and policy aspects are important elements towards complete understanding of the requirements for REDD+. Even If the REDD+ program is technically and institutionally strong, if the implementation arrangements (e.g. carbon ownership, benefit sharing, carbon registry, transaction mechanism, necessary legal structure and capacity development etc.) are not decided carefully, its success will be questioned. Therefore, if any country goes for REDD+ implementation, such aspects need to be understood properly in the readiness phase itself. Therefore, well-defined policies and necessary institutional support is essential when deciding on investment and benefit sharing from REDD+.

FORWARD LINKAGE

Policy, rules, and institutional structures are important for the REDD+ mechanism. Conclude the session by indicating that the next session will link institutional and policy aspects with existing forest management scenarios and practices, issues around deforestation and forest degradation, stakeholders and their roles, the opportunity cost of REDD+ against alternate landuse practices, and challenges for its implementation in Nepal.

READING MATERIALS

3. Socio-political aspect

- Clarification on forest carbon ownership.
- Carry out environmental impact assessment and formulate its procedures.
- Necessary preparation to adopt the Safeguard Principles.
- Management for capacity building.

The above are the minimum requirements for REDD+ implementation and are discussed in detail in coming sessions.

REQUIREMENTS IN TECHNICAL ASPECTS

In order to enter into the REDD+ process, meeting the technical requirements is essential. A brief explanation of this requirement is discussed in this document. However, the measurement of these technical aspects is quite complex, thus special training and reading materials are required.

1. **Baseline for carbon dioxide emission**

   To determine actual emission reduction and carbon stock enhancement, the existing level of carbon dioxide emissions and the carbon stock is estimated. This is called the baseline for carbon dioxide emissions. The deforested and degraded forest area or the rate is also considered as the baseline. Every nation needs a baseline to prove future reduction in carbon dioxide emissions. The baseline may be any of the following types:

   - **Business as Usual - BAU**: The future estimate of amount of carbon dioxide emissions through deforestation and forest degradation in the existing or no REDD+ situation is called Business as Usual. Based on this, the effectiveness of the plan is measured and reviewed, and additionality will be determined.

   - **Historical baseline**: Before the implementation of REDD+, the rate of carbon dioxide emission from the deforestation and forest degradation during the past ten years or more is known as the historical baseline.

   - **Crediting baseline**: The emission reduction and rate of carbon sequestration after the implementation of REDD+ is known as the crediting baseline. The nation or program which reduces carbon dioxide emissions below this baseline after implementation of REDD+ will receive the payments. The nation or program receive payments if the forest carbon stock is above the determined crediting baseline.

2. **Additionality**

   In the context of carbon trade and REDD+, additionality means the reduction in deforestation and forest degradation rate due to REDD+, based on which payment is made. In other words, the developing country would receive payments based on additional forest conservation efforts. Under this condition, payment cannot be received if the forest is conserved through existing forest

7 The basic and technical requirements for REDD+

INTRODUCTION

Countries should fulfill certain requirements to get payments under REDD+. Those requirements are not only beneficial for the nation who making the payments but also to the receiving country. Among those requirements, some occur during the readiness phase and some during implementation of the program. Most of the requirements for REDD+ are related to institutional structures, safeguarding the rights of local community and indigenous people, and technical capacity. The countries that wish to implement REDD+ must develop institutional structures based on the political, social, and geographical situation of the country. The country that makes the payment normally should not interfere in the decision-making process in this regard. However, international treaties, agreements, and the nation's own laws have to be followed. Technical aspects should be in line with guidelines prepared by the Forest Carbon Partnerships Facilities (FCPF) and treaties under UNFCCC. These guidelines give a list of activities to be carried out but allow contries the right to decide the methodologies and standards for REDD+ implementation. However, the developed methodology has to be implemented meeting basic international standards. The countries implementing REDD+ have to meet the following requirements:

1. Institutional and legal aspect

   ▪ Prepare necessary strategy, policy, laws and plans to address deforestation and forest degradation.
   ▪ Develop institutional arrangements such as the management of fund transactions, databases, carbon registry, monitoring, and evaluation.
   ▪ Develop procedure and legal mechanism for benefit sharing.

2. Technical aspects

   ▪ Identification of baseline.
   ▪ Mechanism and policy to address leakage.
   ▪ Develop policy and mechanism to ensure permanency.
   ▪ Ensure additionality and prepare process to measure.
   ▪ Formulate and implement the standards.
   ▪ Prepare reliable and transparent mechanism for measurement.
   ▪ Reporting and verification.

management practices or if there is no significant difference even if REDD+ is implemented. For example, if the existing forest management practice has been applied for rainforest conservation and can be conserved without REDD+, those countries will not receive payments.

In the present carbon market, as REDD+ is the only mechanism to value the contribution of live or standing trees and deforestation and forest degradation is business as usual, the additionality has become a requirement. Where forest carbon emissions cannot be reduced through forest protection in the absence of additional support, the payment made for enhanced carbon stock or reduced emissions is called a REDD+ benefit. As a requirement for REDD+ implementation, there should be clear evidence that REDD+ enhances the forest carbon stock greater than the Business as Usual scenario.

3. **Leakage**

According to the UNFCCC Bali Action Plan, conserving one forest where REDD+ is implemented, while meeting the demand for forest products from other forests where REDD+ is not implemented, is called forest carbon leakage. For example, a forest developed by converting agricultural and barren land for REDD+, while the adjacent forest is destroyed by the people, is considered leakage. It is also known as emission transformation. If the income from REDD+ is used for agro-forestry, ecosystem and sustainable forest management outside the REDD+ project area then it is called reversed leakage. In addition to the forest sector, leakage has been an issue in the energy sector too. Similarly, based on the area covered, leakage can be local, regional, national and international.

Primary and secondary leakage

Analysts have divided leakage in to two categories:

a. Activities leakage (primary leakage): If the REDD+ program is implemented in one place and as a result the deforestation and forest degradation transfers to other places it is called primary leakage.
b. Leakage from market (secondary leakage): This type of leakage is the result of a change in the carbon credit price in the REDD+ market. The price of carbon bought through developing or company changes according to market forces. The financial activities of a market directly affect the leakage.

4. **Permanence**

To maintain the forest carbon stocks at existing level for the period of REDD+ implementation (normally 30 years) is considered permanency in the context of REDD+.

Human induced activities such as grazing, unmanaged forest products collections, forest fire, flood, landslides, pests and diseases, drought, sporadic rainfall are the responsible natural factors for increased carbon emissions. Similarly, the impact of climate change can also be the reason behind a decrease in forest cover, density and forest carbon. During the period of REDD+ implementation, the buyer should be assured that forest carbon stock conservation and activities

for conservation are sustained. According to Wong and Dutschke, 2003, the risk for forest carbon instability is as follows:

- **Natural risk**: Storm, drought, fire, insect, pests and diseases

- **Risk related to climate change**: various studies have concluded that climate change affects the forest carbon stock. The potential risks are not easy to predict in the absence of historical acquaintance.

- **Risk due to demand**: Increasing demand of agricultural products has a direct effect on forests. Deforestation and forest degradation increase due to it. When prices rise in local and international markets, the opportunity cost of a forest also rises, which increase the probability of forest land-use change to other purposes.

- **Political risk**: Agreements under REDD+ might be affected if political leadership or a government is changed.

Management of risks in permanence

- **Project credit buffers**: According to this concept, only a certain percentage (e.g. 50%) of the payments for carbon is made. The remaining percentage is paid at the end of the project if the condition of permanence is satisfied. This option can be adopted in a voluntary market.

- **Risk pooling**: In the condition where the programs on various aspects (for e.g. energy related) are implemented simultaneously for carbon reduction, the potential risks from one program can be amalgamated with various programs to reduce the uncertainty.

- **Insurance**: Under this concept, the possible risk of uncertainty can be reduced by paying a premium for per unit emission reduction to an insurance company. The insurance company compensate the REDD+ project manager for the loss or damage of forest carbon during the REDD+ program.

5. **Measuring, monitoring, reporting and verification**

Periodic measurement is necessary to collect information about the change in carbon dioxide emission rate after implementation of a REDD+ program. Techniques, procedures, and methodologies applied for periodic measurement have to be supervised and reviewed frequently. This is known as monitoring.

A report has to be prepared covering the process, techniques and procedures adopted for the collection and analysis of necessary data. The verification of REDD+ refers to the task to validate whether the projects are running according to the accepted proposal and carbon dioxide emission. The measuring technique and procedure are undertaken by a recognized third party.

6. Standards

In the process of REDD+ implementation, in addition to the technical and socio-economic requirements, various standards set by international bodies have to be adopted. Use of such standards not only helps to initiate best practices in project formulation and development but also helps in the following aspects.

- Addressing climate change, assisting in the identification of projects that support livelihoods of the local communities and the conservation of biodiversity.
- Enhance excellence and creativity in project formulation.
- Decrease the risk for investors and augment the opportunity for the program developer.

Among these standards, the Voluntary Carbon Standards (VCS) and the Climate, Community and Biodiversity Alliance (CCBA) standards are principally related to REDD+ implementation. VCS gives basic information about leakage, permanence and additional carbon stocks and help to make the voluntary carbon market reliable and trust worthy. Similarly, CCBA resolve 14 required criteria and 3 alternative gold level criteria and monitors the program whether it is complying or not according to these standards. From the evaluation of the third party, a certificate is provided to those projects that are achieving an optimum benefit to communities and biodiversity, while those that don't comply cannot implement the project any further. Both of these standards should be understood carefully while implementing the REDD+.

REFERENCE MATERIAL

Angelsen A. (ed.) 2008: *Moving Ahead with REDD: Issues, Options and Implication.* CIFOR: Bogor.

Stephen, P. 2009: *Introductory Course on Reducing Emissions from Deforestation and Forest Degradation (REDD)*: IDSS Pvt. Ltd.

Acharya et al, 2009: *Ready for REDD? Taking stock of Experience, Opportunities and Challenges in Nepal*. Nepal Foresters' Association.

Booklet prepared by REDD+ Pilot Project-ICIMOD, FECOFUN and ANSAB.

REDD CELL- draft version of REDD Terminologies.

8 Social and economic safeguards in REDD+

INTRODUCTION

Reducing deforestation and forest degradation is a requirement for all countries implementing REDD+. While addressing the causes of deforestation and forest degradation, positive or negative impacts might occur on the social and environmental aspects. It is equally important to reduce the adverse impact of REDD+, while promoting the positive impacts of REDD+. Therefore, social and economic security has to be addressed carefully during the implementation of REDD+. In this reading material, how to develop a scenario with and without REDD+, the positive and negative impacts of REDD+ on social and economic conditions, the method to measure impacts, the impact of REDD+ in reducing poverty and livelihoods, the challenges in REDD+ implementation and benefit sharing, and the involvement of forest-dependent people on benefit sharing will be discussed.

1. **Situation with and without REDD+**

   To assess the impacts of REDD+, the situation before implementing REDD+ should be analyzed. The forest management without REDD+ refers to the continuation of an existing management system. The negative and positive effect of forest management without REDD+ on society and environment can be understood from an Initial Environmental Examination (IEE) and an Environmental Impact Assessment (EIA). The assessment shows how the community is using the forest.

   Analysis is needed on how forests can be managed through REDD+ implementation and how forest conservation and management can be done to enhance carbon stock. While assessing, it is necessary to assess the social and environmental impact of forest management according to the REDD+ process. In this way, the analysis of impact with and without REDD+ on society and environment can be done.

2. **Impacts of REDD+**

   REDD+ can have both positive and negative social and economic impacts. To understand these impacts, a detailed study is required. While implementing REDD+, there may be a decrease in the collection of firewood and fodder as well as grazing, since without proper protection of forests, forest carbon stock cannot be increased. For this, protection of plants and grazing control will be necessary. This may increase the availability of Non-Timber Forest Products. Due to an increase in production of timber, the income of a community may increase. Similarly, other positive impacts include enhancement of aesthetic value of forests; an increase in agriculture production due to an

increase in the availability of water and compost; improved biodiversity; enhanced forest carbon stock; and increased soil productivity due to improved fertility. Similarly, there will be a decrease in the use of forest products by applying alternative energy. The indirect positive impacts include watershed conservation, which increases water storage and the retaining period; and the practice of stall feeding improves the productivity of land.

In the social sector, poverty alleviation is indirectly supported through REDD+ implementation. Furthermore, this creates an environment for sensitization of local communities to the process of REDD+ implementation.

The direct negative impacts may include a decrease in the fallow period by shifting cultivation practice. The indirect negative impacts of REDD+ include migration of people due to limited availability for grazing, fodder, and access control, while illegal collection of forest products may also increase negative impacts.

3. **Impact assessment technique**

REDD+ has stated social and environmental impacts which have to be assessed through different methods. The impact assessment techniques can be adopted as presented in the diagram below.
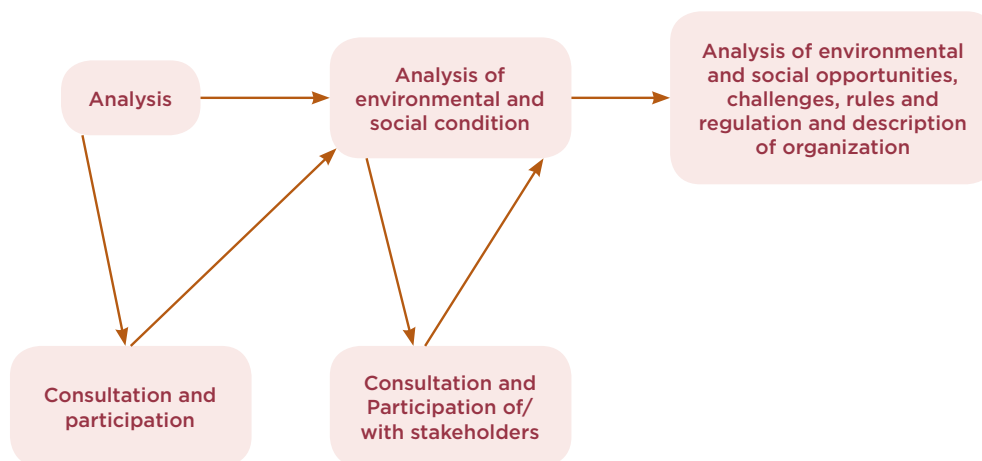
Diagram 1: Social and environmental impact assessment of REDD+ (Modified from FCPF)

4. **Contribution of REDD+ on poverty alleviation and livelihood**

As REDD+ implementation promotes forest conservation and increased forest stocks, it will also support poverty alleviation. The income received from the carbon trade can be used in activities related to poverty alleviation, such as alternative energy promotion and rural micro-enterprise related skill development. Similarly, REDD+ improves forest conditions, which

results in increased availability of forest products and improved biodiversity. Furthermore, improving access rights for local communities and indigenous peoples can support expanded NTFP collection, bolstering local livelihoods.

5. Possible challenges in REDD+ implementation and benefit sharing

The main objective of REDD+ implementation is forest conservation and enhanced forest carbon stocks, often necessitating changes in existing forest use practices. This is one of the key challenges, as changing existing use practices needs the consent from all users.

The speed and process of REDD+ implementation could be a challenge. Reliable forest stock measurement methods, verifying such a report and the issue of making REDD+ implementation cheaper, simpler and more reliable are some of the challenges facing REDD+. Similarly, there will be a challenge on what benefit sharing mechanism to use in different forest management regimes. The major issue could be the allocation of revenue from REDD+ to different levels (National to community level).

6. Participation opportunity of Forest-Dependent Group

While implementing REDD+, the existing use of forest resources by forest-dependent people should be assured. Situations should be created to secure the traditional rights of forest-dependent groups. During the implementation of REDD+, communities should be able to manage and use forest resources as they have been using them traditionally. Sustainable forest management, forest carbon stock enhancements, and forest protection depends on a reduction in deforestation and forest degradation. The forest-dependent local communities should have rights in forest management related decisions, including implementation and benefit sharing at the local level. The REDD+ program should create opportunities to implement various livelihood and poverty alleviation related programs.

7. Safeguard principles

According to draft decision of the 15th conference of United Nation Framework Convention on Climate Change (UNFCCC) in Copenhagen, the following principles applied to safeguarding rights under REDD+:

1. The REDD+ program will be interrelated and complementary with the national forest objectives and related international convention and treaties.

2. Transparency and governance will be promoted effectively in REDD+ recognizing national sovereignty and laws.

3. Recognizing the declaration of the United Nation General Assembly on indigenous rights, national circumstance and laws, and international responsibilities, the rights and traditional knowledge of indigenous people and local communities will be promoted and assisted.

4. While developing national policies, implementing programs, developing monitoring mechanisms, and determining forest baseline for REDD+, full and effective participation of indigenous people and local communities and relevant stakeholders will be promoted.

5. While implementing REDD+ and working on national forest and biodiversity conservation, assurance will be given for not converting forests into other purposes. Through REDD+, conservation of national forests and ecosystems, as well as environmental and social benefits, will be promoted and enhanced.

6. Activity to reduce risk of repetition will be promoted.

7. The emission transformation will be minimized.

Necessity of multi-ecosystem benefit assurance in REDD+ implementation

Reduction of deforestation and forest degradation needs to be assured through REDD+. In addition, how the multi-ecosystem benefits can be achieved is also equally important. If tree species that store more carbon are promoted to increase forest carbon stock, biodiversity and the ecosystem of that area will be at risk.

Therefore, it is crucial to develop activities that increase forest carbon storage and ensures other important benefits to the forest. The following forest services are important and should be ensured while implementing REDD+.

- **Biodiversity conservation**: It is important to maintain biodiversity while implementing REDD+. Instead of converting the forest into single-species forests, biodiversity should be improved by promoting natural forests. As a result, various species of birds, animals, insects, and vegetations are protected from extinction and a favorable habitat will be created.

- **Ecosystem services**: In addition to forest conservation and carbon stock enhancement, the following ecosystem services should be assured and forest management options should improve the quality of these services.
  - Provisioning services: The products obtained from ecosystems, including, for example, genetic resources, food and fiber, and fresh water.
  - Regulating services: The benefits obtained from the regulation of ecosystem processes, including, for example, the regulation of climate, water, and some human diseases.
  - Supporting services: Ecosystem services that are necessary for the production of all other ecosystem services, e.g., soil formation and retention, nutrient cycling, water cycling, and provisioning of habitat.

- **Climate change adaptation**: the improvement of forest quality minimizes the negative impacts of climate change.

In addition, REDD+ helps build sustainable livelihoods, more transparent governance and rights, and poverty alleviation.

9 Policy and institutional aspects of REDD+

INTRODUCTION

The most important aspect of REDD+ is how it is implemented. Even if the technical and institutional aspects are strong, the success of REDD+ will be questioned if the implementation arrangements (e.g. carbon ownership, benefit sharing, carbon registry, structure of transaction, necessary legal structure, and capacity building) are not discussed and decided systematically. Therefore, countries that enter into the REDD+ process should decide them in the readiness phase. For this, all relevant stakeholders (local groups and indigenous people, forest-dependent local communities, women, Dalit, local and central government, legal experts, nongovernmental organizations, and other specialists) need to provide consent, collaboration and direct participation in implementation decision making. Each country can have an implementation arrangement based on their social, economic, cultural, and geographical conditions. But those arrangements should be transparent, applicable, and acceptable to all. It should ensure equitable and socially just (more benefit to forest managers) benefit sharing mechanisms. Countries wishing to implement REDD+ should develop implementation arrangements covering the following aspects:

1. **Forest carbon ownership**

    Under REDD+, forest carbon is the primary resource. So, it is essential to decide the ownership of carbon. The ownership of land and forest products belongs to different stakeholders in different forest management regimes. For example, in the case of community forests in Nepal, land tenure remains with the government, whereas forest products ownership is handed over to communities. Hence, it is essential to think of forest carbon differently, as forest carbon is not limited to plant body but is also stored in the forest soil. Forest carbon can be considered one of the forest products but as the soil carbon remains in land, it may be included in land ownership. But, whether in the soil or plant body, forest carbon is a result of forest development and conservation. In this complex situation, it is essential to clarify or decide forest carbon ownership.

2. **Benefit sharing**

    The issues of forest carbon ownership and benefit sharing are interrelated. It is natural to argue that all benefits should go to the forest carbon owner. It should be looked at differently. The theory that those who contribute to enhancing or maintaining carbon stocks should receive a big share is practical. But it is important to determine the distinct criteria and process for benefit sharing

between different stakeholders and within the stakeholder groups (e.g. individual forest user group members) who have crucial roles in forest management and REDD+ process.

The assumption that 70-80% of benefit should be allocated to the forest management groups, who are directly related to forest, is escalating. All these factors should be considered while developing the benefit sharing mechanism under REDD+.

3. **Financial management**

Many people will see the money received from the REDD+ process as there to provoke that "Paisa Dekhepachi Mahadeve Ko Tin Netra". There is a high chance of misuse. The country should manage the payments carefully, in a clean, effective and efficient way. The example of management includes many countries that have proposed to deposit all received payments in a government account and do the transaction through government channels where as many countries have made a provision of establishing a separate fund for financial transactions. Under the trust fund model, the selection of management boards, the nomination of a manager, and the formation of decision-making processes are very important issues. There are discussions and an understanding that management boards should be comprised of representatives of stakeholders and rights' holders that are to be selected through a democratic process. Either way, it is essential to make a decision on a REDD+ payment mechanism before entering into the REDD+ process.

4. **Carbon registry**

A carbon registry is an important aspect of REDD+. Carbon registry defines an activity to all carbon related transactions. In general, the account of carbon sequestration, sources, income generated and the distribution system are included in carbon registry. There are more than six forest management regimes in Nepal. It is a challenge to keep all the records transparently and to ensure a benefit sharing system that is socially equitable. In such situations, due to lack transparency, there is high chance of misuse and corruption. Therefore, it is critical to develop a transparent, simple, efficient and effective registry mechanism. In addition, where to keep the registry, who manages it, how to reduce management costs, how to engage the representatives of stakeholders, and how many layers are maintained by the registry are crucial aspects to be decided before entering in the REDD+ process.

5. **Monitoring, reporting and verification**

REDD+ does not become complete from a single payment. It is a continuous and long lasting mechanism. Hence, there should be a good arrangement for monitoring, reporting and verification. After entering the REDD+ process, countries should make necessary arrangements for regular monitoring of carbon stock increases, including quantity and area. Different methods can be adopted to collect information. For example, to collect data on forest carbon stock, a number of sample plots in representative forests can be established and measured regularly. Analyses of collected data will give information on

rate of carbon stock increment. Information on social aspects can be collected adopting similar methods. Impacts of REDD+ on socio-economic aspects can also be assessed during the social survey. Based on the report developed using this information, the buyer provides the payments. There is a provision to have an independent third party verify all of this before the payment is made. Voices are emerging for employing an independent verifier from REDD+ implementing countries to receive maximum benefit by reducing verification costs. Various issues, such as who does monitoring, reporting and verification, methods, role of stakeholders, intervals, and record keeping, should be clarified in REDD+ readiness phase.

6. **Development of legal provisions**

All the provisions discussed above need to be backed by a legal framework. As REDD+ is new, there is a lack of necessary policy, law and rules to support REDD+. Unless different aspects of REDD+ are backed by policies and plans, REDD+ cannot be expected to succeed. Specifically, policies, programs and guidelines should be developed in the following aspects.

- Carbon ownership
- Benefit sharing
- Financial transaction management
- Monitoring, reporting and verification
- Forest carbon registry
- Amendment in existing law and rules to reduce deforestation and forest degradation, enhancement of carbon stock from forest conservation and management.

These activities have to be accomplished during the readiness phase of REDD+. While developing those policies and plans, discussion should be made with all the concerned stakeholders.

7. **Capacity building**

Capacity building of people and institutions that are directly related is essential for effective implementation of REDD+, including policies and plans.

The REDD+ concept is new. However, the learning from similar programs will be helpful. For example, learning from community forest policy and benefit sharing, implementation of various trust funds (nature conservation trust), and forest certification could be important.

Countries implementing REDD+ need to develop capacity building programs in various aspects of REDD+. For this, capacity need assessments and training need assessments are necessary. Training need assessments should be carried out in all aspects of REDD+ with the institutions responsible for various aspects. For capacity building, necessary specialists can be arranged nationally or outsourced from other countries. However, priority should be given for nationally available experts.

The above stated aspects gives a general idea of necessary activities that need to be accomplished. It is not easy to develop policies, programs and guidelines incorporating all these aspects.

At the beginning, they should be reviewed through the 'learning by doing' process, which can help create good policies and programs suitable for the country. However, they have to be reviewed based on the social, economic, and political change.

Module

4

FORESTS OF NEPAL: STATUS, MANAGEMENT STRUCTURE, PRACTICES AND STAKEHOLDERS

Introduction

For the effective implementation of REDD+, it is important to understand the local forest conservation and management contexts. Hence, this module will include the challenges and opportunities for sustainable management of forests, how to make synergy between REDD+ and alternatives to REDD+, and the role of relevant stakeholders.

Objective

The objectives of the session is to develop an understanding among the participants on forest land use change in Nepal, forest degradation situations, challenges for sustainable forest management, opportunity cost of REDD+, and the relevant stakeholders in forestry sector in general and REDD+ in particular.

Sessions

This module has following major sessions:

Session 10: Deforestation and forest degradation in Nepal

Session 11: Reducing deforestation and forest degradation in Nepal: Challenges and opportunities

Session 12: Analysis of alternative opportunities and benefits of REDD+ (Opportunity costs of REDD+)

Session 13: Analysis of REDD+ stakeholders in Nepal

Deforestation and forest degradation in Nepal

Time:

1 hour
and 30 minutes

Methods:

Plenary presentation, discussion and small group work.

Materials:

1. Brown paper, marker, masking tape.
2. Multimedia equipment and lap top computer.

Readings:

1. Reading 10: Deforestation and Forest Degradation in Nepal.

INTRODUCTION

The institutional and policy requirement for REDD+ has already been discussed in the previous sessions. It is essential to understand and discuss forest conditions in general and the challenges and opportunities for sustainable forest management. Hence, in this session, forest land use change scenario and drivers of deforestation and forest degradation will be discussed in greater detail.

OBJECTIVES

At the end of this session, participants will be able to:

- Present and discuss Nepal's land use change scenario and statistics.
- Discuss the past and present scenario of deforestation and degradation across different geographical regions (Himalaya, Mountain, and Terai).
- List the drivers of deforestation and forest degradation.

PREPARATION

- Prepare presentation slides including land use change scenario and drivers of deforestation and forest degradation in general and specific to Nepal's context.
- Plan for group division and prepare format for effective discussions.
- Invite DFO or his/her representative in group work presentation for interaction.

SESSION ACTIVITIES

- Start the session by clarifying the objectives, contents and methodology.

- Facilitate interaction among the participants using a PowerPoint presentation focusing on land use change and deforestation and forest degradation Nepal.
- After presenting the status of REDD+, ask participants to form three groups, perhaps based on geographical representation such as Himal, Mountain and the Terai, and ask each group to prepare a list of major drivers and underlying causes of deforestation and forest degradation. Help the group by providing a form to each group to work on drivers of deforestation.
- Encourage participants to analyze the root causes of deforestation and forest degradation.
- Ask each group to present their findings on drivers, underlying and root causes of deforestation and forest degradation. Make the discussion lively by adding and commentating on the presentation.
- Summarize the findings of the groups work. Ask participants to raise questions for clarification and respond accordingly.

EVALUATION

Ask the following questions for session evaluation:

- State any 3 major drivers of deforestation and forest degradation in Nepal.
- Explain the situation of deforestation and forest degradation in various geographical regions.

CONCLUSION

The aim of REDD+ is to promote sustainable forest management that contributes to reducing forest carbon emissions and developing forests as a major carbon sink. Therefore, analyzing the present forest condition and status of deforestation and forest degradation is a necessary prerequisite. Forests and shrublands make up 39% of Nepal's total land area. Data from the last 10 years show that forestland has been changed to other land use systems at a rate of 1.7% annually. The major drivers of deforestation and forest degradation include encroachment, illegal logging, forest fire, overgrazing, resettlement, and development of physical infrastructure. The underlying causes for these include weak implementation of the law, political instability, limited livelihood options, poor governance, and a lack of political will. Many of these causes are beyond the jurisdiction of Ministry of Forest and Soil Conservation (MoFSC), but those that are within the administrative boundary of the MoFSC could be solved through internal efforts and in coordination with other stakeholders.

FORWARD LINKAGE

Sustainable forest management is a mandatory precondition for REDD+ implementation. Hence, degradation and deforestation has to be reduced from all geographical regions. Conclude the session by informing that the next session will focus on challenges and opportunities for reducing degradation and deforestation in Nepal.

11 Reducing deforestation and forest degradation in Nepal: Challenges and opportunities

Time:
1 hour
and 30 minutes

Methods:
Interactive plenary presentation, discussions and small group work.

Materials:
1. Brown paper, marker, masking tape.
2. Multimedia equipment and lap top computer.

Readings:
1. Reading 11: Reducing deforestation and forest degradation in Nepal: Challenges and opportunities in Nepal.

INTRODUCTION

After understanding the land use change and the deforestation and forest degradation situation in Nepal, it is important to understand the opportunities and major challenges for sustainable forest management to make REDD+ implementation more effective through carbon enhancement, ensuring permanency, and avoiding leakage.

OBJECTIVES

At the end of this session, participants will be able to:

- List the major issues and challenges in reducing deforestation and forest degradation in Nepal.
- List the opportunities available to reduce deforestation and forest degradation.
- Prepare a list of strategic options for sustainable forest management.

PREPARATION

- Prepare a form for the group discussion.
- Invite staff from the district forest office or Ilaka forest office or from the Range Post to be present in the session.

SESSION ACTIVITIES

- Introduce session, its objective, methodology and time requirement.
- Ask all participants to write down the major challenges for reducing deforestation and forest degradation, linking them with the drivers and underlying causes discussed in the previous session.
- Ask each participant to tell at least one challenge and note it on the board. Omit the repeated points and add any missing (according to the reading materials).

- After the list of challenges has been prepared, in plenary mark on them to which region/s (High Mountain, Middle Hills and the Terai) they belong and develop a table.
- Provide time to the participants to think on the opportunities available for reducing deforestation and forest degradation.
- List down the responses of the participants on flip charts. Encourage all participants to respond and prepare an exhaustive list. if possible.
- Divide the participants into 4 groups and ask each group to discuss the strategy for at least two drivers/underlying causes, keeping the opportunities and challenge in mind. Present and clarify formats for group work.
- Ask each group to present in plenary and encourage participants for any addition or clarification. Prepare final list of strategic options for at least eight drivers or underlying causes and roughly prioritize them in plenary.

EVALUATION

Ask the following questions for session evaluation:

- List at least three challenges for sustainable forest management in our context.
- What are the three primary options to address these challenges?

CONCLUSION

Deforestation is a worldwide challenge, as evidenced by the global decrease in forest area. Addressing deforestation and forest degradation has been more challenging for countries like Nepal, which is poor, developing and has limited options for livelihood. Though these challenges are different among the Terai, Mid Hills and High Mountain, in general population pressure for land and forest products, high demand for timber from across the border, political protection to encroachers and smugglers, weak enforcement of law, corruption within government machinery, and inaccessibility to some of the remote areas are the major challenges for addressing deforestation and forest degradation. Despite these challenges, there are opportunities in the form of availability of committed officials and politicians, commitments from donors and civil society, successful history of community forestry, and ongoing state restructuring process with a greater focus on participatory policies and laws. Many challenges could be addressed by improving forest administration, whereas other challenges may require political commitment. Nepal should develop strategic options for ensuring sustainable forest management using available opportunities by minimizing challenges.

FORWARD LINKAGE

In this session, we discussed the challenges, opportunities, and possible strategies for sustainable forest management. Conclude the session mentioning that in the next session we will discussed the opportunity costs of REDD+.

12 Analysis of alternative opportunities and benefit of REDD+ (Opportunity costs of REDD+)

Time:
1 hour
and 30 minutes

Methods:
Brain storming, plenary discussion, diamond ranking.

Materials:
1. Brown paper, white board, marker pen, masking tape, meta-cards.

Readings:
1. Reading 12: Analysis of alternative opportunities and benefits of REDD+ (Opportunity costs of REDD+).

INTRODUCTION

Comparative analysis between changes in forests with and without the REDD+ program is essential before deciding on its implementation. This session gives a methodological idea to analyze the social and economic benefits of forest management with and without REDD+ and use of forestland for other land use systems.

OBJECTIVES

At the end of this session, participants will be able to:

- Analyze the costs and benefits of REDD+ as against other land use practices.
- Analyze economic gains and losses due to carbon trade as against other commercial goods and services in the forestry sector and apply the same in decision making process.
- Understand synergy between local demand, including market requirements, and requirements for REDD+.

PREPARATION

- Be prepared to carry out plenary discussion.
- Note down main points from reading materials to be used as a reference for session facilitation.

SESSION ACTIVITIES

- Introduce the session by explaining session objectives, methods and time requirements.
- Initiate discussion by recalling the causes of deforestation and forest degradation. Facilitate discussions whether the forest products received in discussion on the impact of deforestation and forest degradation on the collection of forest products and benefits from forest services.

- Ask participants to recall module I, and ask them to list out the services received from the forests. From plenary discussions, divide the services into tangible (can be converted into monetary value) and intangible (cannot be converted in monetary value).
- List the services received from forests if REDD+ is implemented. Compare the services received from the forests without and with REDD+. This may be done through a small exercise with the participants using metacards, asking them to list down the services from the forests (with and without REDD+ scenarios).
- Brainstorm if forestland is converted to other land use purposes, what could be the other alternatives to the services received from the forests?
- Continuing with the above discussion, also explore the level of understanding among the participants about the proposed alternatives, in terms of sourcing technological requirements, financial implications, and acceptance of proposed alternatives by the end users.
- Through a plenary discussion, identify key parameters needed to analyze benefits from a forest and use them for a later discussion.
- Distribute meta-cards and ask each participant to write one alternative each for use of forestland to other land use purposes. Summarize the response proposed by the participants for alternative land use of forests.
- Pick one of the most-cited alternatives and ask participants to list the services that might be received from the chosen alternative. Initiate a discussion on what will be the impacts of the proposed alternative land use change on the services received from forests.
- Through a plenary discussion, ask participants to list down the forest management modalities (protection, conservation, participatory forests) if forest land use is kept unchanged. Now ask the participants, if REDD+ is implemented, whether forests can still continue providing the same services and if the existing management strategies will still work or will need some changes.
- Discuss how the basic requirements of the forest dependent communities can still be met while REDD+ is implemented.
- Summarize the session by highlighting the importance of cost benefit analysis in deciding which management option is better for long term sustainability and livelihood security of the poor and vulnerable.
- Encourage participants to raise questions for clarification if any and respond to them accordingly.

EVALUATION

Ask the following questions for session evaluation:

- How to make synergy between local market requirements, livelihoods security of local people, and requirements for REDD+.
- List some examples of benefits and costs if forest is managed with and without REDD+ and other land use purposes.

CONCLUSION

It is necessary to be aware of the opportunities that might be missed due to the implementation of REDD+ and the process to maximize benefits and minimize losses. There is a need of a comparative analysis of advantages and disadvantages across different landuse practices. In the process, both the direct and indirect benefits and ecosystem services of the forest should be analyzed. Furthermore, decisions on whether to go for REDD+ or not should be relative economic, social, religious, and ecological benefits between forestland and other land use systems.

Linked to this, it is important to also introduce FPIC and its use in the decision making process, emphasizing the importance of determining if REDD+ is acceptable to local communities.

FORWARD LINKAGE

In this session we discussed the advantages and disadvantages between implementing REDD+ or not implementing REDD+. There are various stakeholders involved in the REDD+ process and some stakeholders may have to face more impacts from REDD+ than others. Hence, the next session will be on the stakeholders analysis in the context of REDD+ and the roles and responsibilities of the identified stakeholders.

Analysis of REDD+ stakeholders in Nepal

Time:
1 hour
and 30 minutes

Methods:
Interactive presentation, plenary discussion, small group work.

Materials:
1. Brown paper, white board, marker pen, masking tape, meta-cards.
2. Multimedia projector and a lap top computer.

Readings:
1. Reading 13: Analysis of REDD+ stakeholders in Nepal.
2. List of the stakeholders identified for REDD+ readiness in Nepal.

INTRODUCTION

The successful implementation of REDD+ and sustainable management of forests depends on the roles and responsibilities of various stakeholders. Who are these stakeholders? Let us identify them along with their roles, rights, and responsibilities. Though the word 'stakeholder' denotes all involved actors, it is important to differentiate between right holders and stakeholders. The difference is largely based on each of their roles and responsibilities and how they use the forest.

OBJECTIVES

At the end of this session, participants will be able to:

▪ List the different level institutions, individuals, organizations and groups directly and indirectly related to REDD+ in Nepal.
▪ Explain the methods to identify stakeholders and rights holders, and differentiate between them in different context and geographical settings.
▪ List the rights and the responsibilities of the key stakeholders and rights holders of REDD+.

PREPARATION

▪ Identify the appropriate method(s) of stakeholder analysis among many methods (included in the reading material) to be used in discussions and prepare a format for group work.
▪ Prepare a presentation based on synthesis of the reading materials.
▪ Prepare for group division according to the level and representation of participants.

SESSION ACTIVITIES

- Start session explaining its objectives, contents, methods and time.
- Ask what do you mean by stakeholders? Difference between stakeholders and rights holders?
- Note down the answers, including listing the characteristics of rights holders and stakeholders. Add any characteristics missing to differentiate between them.
- Brainstorm to explain the importance of differentiating between stakeholders and rights holders.
- Summarize the discussion and present (PowerPoint presentation or brown sheet) the importance and process of stakeholder analysis. Clarify the analysis process and importance of each method.
- Select one method and provide format for analysis as given in the reading material.
- Divide the participants in groups according to format.
- Ask each group to identify stakeholder/rights holders in each category.
- Once stakeholders and rights holders are identified, ask participants to list down their roles and responsibilities and relation/interest of each stakeholder category according to existing legislations. Also, list down the impacts on those roles, responsibilities, and rights if REDD+ is implemented. Note that, as listing the roles and responsibilities of all stakeholders takes time, ask one group to list from one category but ensure all categories are covered.
- Ask each group to present their findings in plenary. Encourage other group members to contribute or comment.
- Ask participants to provide suggestion for equitable and people-oriented benefit sharing under REDD+.
- Distribute the list of stakeholders in different categories as maintained in Nepal's REDD+ readiness proposal.
- Analyze and allocate (for information) the stakeholder identified according to REDD+ readiness proposal.
- Summarize the discussions and ask participants to raise questions and respond accordingly.

EVALUATION

Evaluate the session asking the following questions to the participants:

- Why is stakeholder analysis important?
- Who are the key stakeholders of the REDD+ program?
- What is the difference between the stakeholder and rights holder?

CONCLUSION

It is very important to identify direct and indirect stakeholders and analyze their interests, roles and responsibilities, and impacts on REDD+ implementation. Various methods can be used for analysis. Facilitator(s) can choose the method(s) according to requirements and local situations. Stakeholder analysis can help communities develop a clearer understanding of the process, as well as increased ownership and responsibility over the project. This will increase effectiveness and assist in delivering benefits to right holders.

FORWARD LINKAGE

In this session, we analyzed the stakeholders and their roles, responsibilities and rights, and impacts on the REDD+ program. The next session will focus on the access, ownership, and rights of community over forest resources.

READING MATERIALS

10 Deforestation and forest degradation in Nepal

INTRODUCTION

The total land area of Nepal is 14,700,000 hectares. Nepal is divided into three broad geographical regions: Himalayan, Mountain, and Terai. In Nepal, there are five land use systems including agricultural land, barren land, forestland, shrub land and grassland.
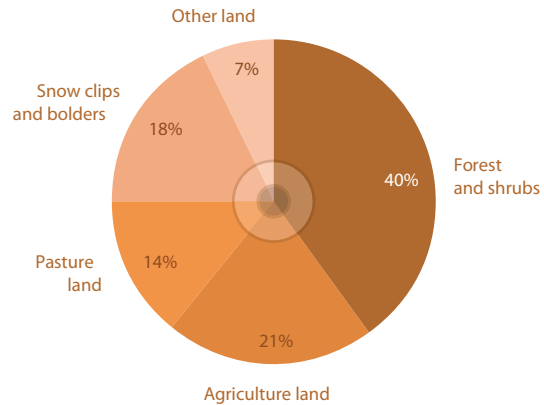
According to the central bureau of statistics (2008), the forest has been continuously converted into other land use systems. Statistics over the past 10 years show that the forestland is being converted into other land use at the rate of 1.7% per year. Forestland is specifically being converted to shrub land. This indicates that the rate of forest degradation is very high. In addition, the forests and shrub lands are gradually being converted into agricultural lands. Table 1 below gives the land use change scenario in Nepal.

Other land 7%

Snow clips and bolders 18%

Forest and shrubs 40%

Pasture land 14%

Agriculture land 21%

Table 1: Land use change, 1991-2001 (thousand hectares)

Land use	1991/1992				2001/2002				Change	Yearly change Rate
	Himalayan	Mountain	Terai	Total	Himalayan	Mountain	Terai	Total		
Agricultural	208	1,722	1,039	2,969	211	1,798	1,082	3,091	(+) 123	0.4
Barren	495	436	56	987	517	449	65	1,031	(+) 44	0.4
Forest area	233	4,436	1,159	5,828	228	2,891	1,149	4,268	(-) 1,560	2/7
Shrub area	138	512	39	689	168	1,254	138	1,560	(+) 872	12.7
Grass land	133	1,589	35	1,757	138	1,592	36	1,766	(+) 9	0.1
Other	797	1,668	25	2,490	946	2,025	31	3,002	(-) 513	2.1
Total	**2,004**	**10,363**	**2,353**	**14,718**	**2,208**	**10,009**	**2,501**	**14,718**	**0**	**0**

Source: Central bureau of statistics: Nepal environmental statistics. Due to different accounting methods, the areas of the three regions do not match precisely between the two time periods

According to a report by Gobinda Dahal (2000), the forest area of Nepal is shrinking at the rate of 2% per year. Furthermore, looking at the global statistics, the per capita forest available has declined from 3.18 hectares to 0.64 hecares in the last hundred years (Figure 2).

Figure 2: Global Deforestation Rate
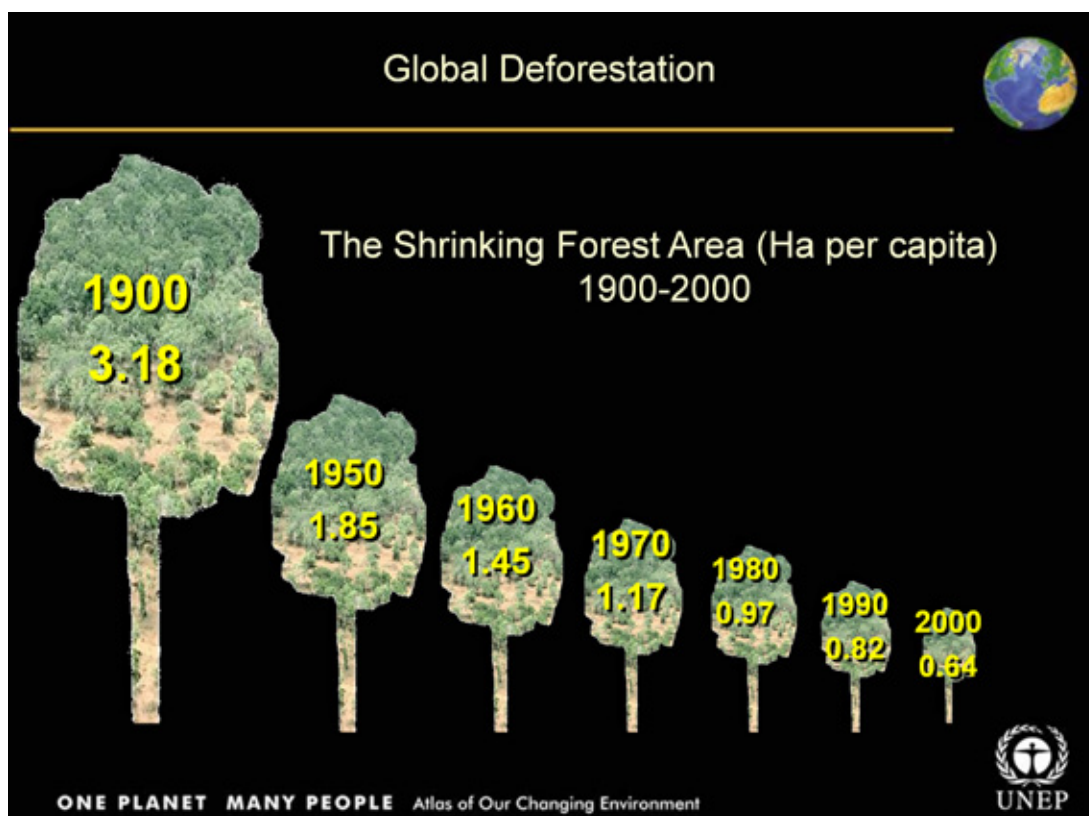
Source: UNEP (2005): *One Planet Many People - Atlas of Our Changing Environment*

According to the REDD+ readiness preparation proposal of Nepal submitted to the World Bank in April 2010, there are nine major drivers of deforestation and forest degradation. These drivers are summarized below in Table 3.

Table 3: Drivers of Deforestation and forest degradation in Nepal

Drivers	Underlying causes	Nature of causes	Affected regions*	Area of issues	In/out of forestry
1. High dependency on forests and forest products (timber, firewood, and other NTFPs)	1.1 Poverty and lack of livelihood alternatives	Direct	T, H	S, E	O
	1.2 Limited access to alternatives for fuel wood and timber	Direct	T, H, M	E	B
	1.3 Inefficient forest product use	Direct	T, H, M	T, S, E	B

Drivers	Underlying causes	Nature of causes	Affected regions*	Area of issues	In/out of forestry
2. Illegal harvest of forest products	2.1 Weak law enforcement and impunity	Direct/ Indirect	T, H	G	I
	2.2 Weak governance and governance vacuum	Indirect/ Direct	T, H, M	G	I
	2.3 Inefficient distribution mechanisms for timber and firewood	Indirect	T, M	M, G	I
	2.4 Market failure	Indirect	T, H, M	M, E	B
	2.5 Poverty and lack of livelihoods opportunities	Indirect	T, M	S, E	O
	2.6 High cross border demand for forest products	Direct	T, M	E	O
3. Unsustainable harvesting practices	3.1 Weak law enforcement and impunity	Direct	T, H, M	G, Political	B
	3.2 Inadequate resources for research and development	Direct	T, H, M	E	B
	3.3 Insecure tenure	Direct	T, M	G	I
	3.4 Insufficient technical inputs	Direct	T, H, M	T	I
4. Forest fire	4.1 Carelessness	Direct	T, H, M	S	B
	4.2 Intentional	Direct	T, H, M	S, E	B
	4.3 Weak forest fire management practice	Indirect	T, H, M	G, T	I
5. Encroachment	5.1 Expansion of agriculture	Direct	T, H	S, E	B
	5.2 Poverty and landlessness	Indirect	T, H	S, E	O
	5.3 Political motivation	Indirect	T, M	P	O
	5.4 Unclear land tenure, policy and planning	Indirect	T, H	G, P, T	B
6. Overgrazing	6.1 Governance vacuum	Indirect	T, M, H	G, P	B
	6.2 High number of low productive livestock	Direct	T, H, M	S, E, M	O
	6.3 Limited alternatives for fodder	Direct	T, H, M	E, T	B
	6.4 Poverty and lack of livelihoods opportunities	Indirect	T, H, M	E	O
7. Infrastructure development	7.1 Ad hoc policy process and weak coordination between and within sectors	Indirect	T, H	G, P	B
	7.2 Weak mechanism for planning and compensation including EIA and IEE, and approval and monitoring of development projects	Direct	T, H	G, P, T	B
	7.3 Undervaluation of forestland and forest services	Indirect	T, H	E	B
	7.4 New economic growth prospects (e.g. oil and gas, transmission lines, cement factory, airport, hydropower dam etc)	Indirect	T, H	E	O

Drivers	Underlying causes	Nature of causes	Affected regions*	Area of issues	In/out of forestry
8. Resettlement	8.1 Undervaluation of forestland and services	Indirect	T, H	E	B
	8.2 Increase demand of land for new settlements	Indirect	T	E, P	O
	8.3 Poorly enforced planning regulations	Indirect	T	G, E, T	B
	8.4 Lack of proven eradication practices	Direct	T	T	I
9. Expansion of invasive species	9.1 Frequent forest fires	Indirect	T, H, M	S, T	O
	9.2 Overgrazing	Direct	T	S, E, T	B
	9.3 Opening of canopy	Direct	T	S, G, T	B

The drivers of deforestation and forest degradation in Mountain, Hills and Terai regions are different. Their causes are complex and diverse. Many causes are outside the management jurisdiction of forests, whereas others could be resolved by establishing understanding and coordination between forest managers and other stakeholders. Some of the factors (e.g. weak implementation of laws and technical difficulties) are within forest jurisdiction and can be solved by the forestry sector. But to seriously address the problem, the root causes have to be addressed. Root causes include financial irregularity, interference of political parties, weak implementation of laws, limited opportunities for employment and income, and unclear land and resource rights.

11 Reducing deforestation and forest degradation in Nepal: Challenges and opportunities

INTRODUCTION

The drivers of deforestation and forest deforestation are different in the Terai, Hills and Mountain. With the commencement of community forestry programs in Nepal, the rate of deforestation and forest degradation started declining. At present, the rate of degradation is almost zero and the condition (density) of forest has been improved. According to a study conducted by Peter Brany and Nagendra Yadav (Livelihood forestry project LFP) in 2009, in all types of community forests, the forest growing stocks is increasing at the rate of 1.5 percent per year. There are several examples of community development and livelihood improvement activities supported by community forests. But depending on the region, community forestry programs have different success rates. For example, the community forestry program is successful in the mid hill region, but less so in the Terai region. Similarly, community forestry programs are not practiced in high mountainous region due to large forest areas, remoteness, and inaccessibility.

CHALLENGES

As the problems are different in the Terai and High mountainous regions, they should be dealt with and solved separately. In the Terai region, forests are shrinking due to conversion of forestland into other land use, as well as massive illegal logging. In High Mountain, conversion of forestland into other land use is not as prevalent, but the forest is being degraded due to massive and unscientific felling of trees. In comparison to the Terai and Middle Hills, there is a serious concern in the High Mountain as once the forest has been cleared, it takes years to restore due to slow growth rates. Forest degradation in the High Mountain will cause more natural catastrophes compared to other regions. This is due to loose soil composition and a fragile landscape in the High Mountain. In this geographic setting, there is a high chance of natural calamities like landslides, flooding, and drying out of water resources if existing vegetative cover is removed. As the causes and impacts of deforestation and forest degradation in different regions vary, the challenges to address the issues also are different. The major challenges and constraints for Terai and High Mountain regions are as below.

Table 1: Major challenges for reducing deforestation and forest degradation

Terai	High mountains
• High forest products demand due to population pressure.	• Limited access.
• High demand in the Indian market.	• Lack of motivation of the DFO staff to work in this area.
• Poor governance and law enforcement.	• Political influence in the management system.
• Open border with India, easy road access to forests and forests with high economic value.	• Non-compliance of rules and regulations.
• Lack of tenure rights to forests for local communities.	• Poor coordination among politicians and government staff and local government.
• Weak institutional capacity of DFOs, poorly motivated forest staff to protect forests, and the practice of taking undue benefits from illegal loggers.	

Among the challenges stated above, most are beyond the jurisdiction of the forestry sector and the Ministry of Forest and Soil Conservation (MoFSC). It is not easy to address those challenges, unless there is a provision for a reward and punishment system and transparent transfer process of officials. Protection of culprits from politicians is another important cause of deforestation and forest degradation, which has been the big challenge in Nepal. There is considerable evidence that proves that massive forest destruction occurs whenever political instability exists. The process of deforestation will continue until and unless all political parties assure their true commitment to not interfere in the attempt of reducing deforestation and assist in fighting against deforestation and forest degradation.

OPPORTUNITIES

In spite of challenges the following opportunities exist for managing forests:

- Although a significant number of government staff are trustworthy and capable, they are lagging behind. So, if we encourage them and create a favorable environment, they can work more efficiently and effectively.

- It is not so difficult to make DFO staff follow rules and regulations.

- Those politicians who have clear vision and interest in the forest sector can be involved and will motivate other politicians.

- Many non-governmental institutions are involved in forestry sector. They will have a crucial role in research, formulation of rules and regulations, and mobilizing various stakeholders including communities, politicians, government line agencies and private sector.

- Nepal's community forest program is successful and provides a good learning opportunity to replicate in other areas.

- Global efforts to reduce deforestation and forest degradation are ongoing. Using them will bring additional economic benefits, i.e. financial incentive. This can be used for income generation of forest-dependent people, indigenous peoples and disadvantaged people. Dahal and Baskota (2009)[1] reviewed the prospects of REDD+ benefit to Nepali Forestry Sector, which is summarized in the table below.

Table 2: Prospect of REDD+ benefit to Nepali forest sub sector

Forest category (Biomass stock area)	Status of forest in Terai	REDD+ prospect		Status of forest in mountain	REDD+ prospect	
		Interest of intl buyers	In country benefit sharing		Interest of intl buyers	In country benefit sharing
Community managed forest	Stable/ declining	Medium	Medium	Growing/ stable	Low/ Medium	High
Government managed forest	Declining significantly	High	Medium	Stable	Low/ medium	Medium
Protected areas	Stable or growing	Low	Low	Growing / stable	Low	Low
Total forest	Declining	High	Complex and contested	Stable/ growing	Low/ medium	Contested and risk of perverse

- Currently Nepal is in a restructuring process. It offers an opportunity to establish required institutional structures and policies that contribute to REDD+.

- The current policies, laws, and rules and regulations of Nepal are in favor of a participatory approach towards sustainable management of forest resources. This offers us unbound opportunities.

Despite challenges, Nepal will have to rely on existing opportunities, while exploring other efforts that contribute to reducing deforestation and degradation. This will ultimately improve the livelihood of Nepalese people.

Option to solve the problems

To reduce deforestation and forest degradation, the commitment from local to national levels is essential. The government should propose different options to reduce the population pressure as well as demand for forest products. It is not difficult to solve the problems in the High Mountain if there is a will among the civil servants and programs are implemented properly.

The above listed opportunities should be used timely and wisely. If so, there is scope for improving living standards for local communities. Several options to reduce deforestation and forest degradation are mentioned in the REDD+ readiness proposal submitted to the World Bank on 19 April, 2010. Some of the options are presented as below in groups.

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[1] National Trust for Nature Conservation and International Centre for Integrated Mountain Development, Nepal

1. **Increase strategic investment**

   - Increase investment in employment-raising activities in non forestry sector.
   - Amplify investment for the promotion of forest-related small enterprises.
   - Increase investment in entrepreneur skill development.
   - Create environment for skill-oriented training for economically active poor.
   - Develop payment for ecosystem services and create employment opportunity for poor people.

2. **Development of simple and practical technologies and enhancement of alternative options**

   - Conduct research on wood efficient technologies and promote technologies for alternatives to wood.
   - Develop and expand wood efficient technologies (e.g. press board, particle board).
   - Develop and expand firewood efficient stoves for poor and marginalized forest-dependent people.
   - Develop policy to promote private sector investment for wood efficient technologies development and expansion.
   - Explore, test, and expand environmentally sound wood alternatives.
   - Build capacity to develop and promote improved and cost effective forest products use technologies.

3. **Options for institutional structure or policy improvement**

   - Develop and implement policy to encourage private forestry and plantation.
   - Implement the sustainable forest management system in all type of forest to increase productivity.
   - Conduct awareness activities to increase understanding of people on real value of forest and products.
   - Improve forestry sector governance.
   - Effectively implement the provision of award and punishment for government officers.
   - Collaborating with media and journalists, publish news of those who conduct positive and negative activities in the forest.
   - Enhance awareness and capacity of government institutions (such as police, military, and custom officers), who are responsible to ensure law enforcement.
   - By expanding the participatory forest management system, accelerate hand over of government managed forest to communities.
   - Develop, pilot, and implement participatory evaluation at various levels.
   - Clarify land tenure and use rights over all forest types.
   - Convert all forests into consent based management systems.
   - Pilot, develop and expand participatory forest management.
   - Develop and promote the inclusive governance mechanism, including all types of stakeholders.
   - Develop attitude/feeling of all the political parties that forest protection is responsibilities of all citizens.
   - Resolve contradictory policies and laws (e.g. forest act 2051 and other acts, such as the local governance act).
   - Explore the alternative management system for conservation area.

4. **Financial and market management**

- Analyze the demand and supply of forest products regularly and manage the supply system accordingly.
- Explore, test and implement alternate source of income to fuelwood and timber sales.
- Conduct a detailed study on the forest products sale-distribution value chain.
- Explore and implement options to increase the engagement of the private sector in forest products value chain (sale-distribution).
- Review, amend and simplify the existing VAT and other tax system in forest products.

5. **Integrating scientific and social forest management**

- With the participation of poor farmers, form public lands management groups to formulate and implement land use management plans.
- Allocate land within community forest area for income generation activities.
- Develop and implement appropriate land use plan.
- Strengthen the coordination mechanism among various institutions.
- Enhance the capacity of government officers, indigenous peoples, local communities, women, and dalits on forest management.
- Increase awareness and participation of local communities in wild fire control and management.
- Prepare fire monitoring and evaluation mechanism.
- Promote sloping land management technologies.
- Increase local community access to livestock breed upgrade activities.
- Invest in agriculture to increase productivity.
- Promote stall feeding system and livestock feed security.
- In the case of allocating forestland to other purpose, approve only after agreeing on a suitable land substitute of the land provided.
- Conduct research and develop plan to control invasive plants.

12 Analysis of alternative opportunities and benefit of REDD+ (Opportunity costs of REDD+)

The destruction of forests takes place for various purposes. In the context of Nepal, forest areas are being destroyed for development activities like construction of roads, hydroelectricity, agriculture, and resettlement. The population of Nepal has doubled in the last 50 years. But, the availability of land for agriculture and settlements is decreasing and due to this, forests are being destroyed to meet the deficit. In this complex situation, Nepal needs to maintain a certain percentage of forestland to satisfy the forest products needed and to maintain ecosystem balance. But it has not been estimated how many forests are required for those purposes. Some are proposing to increase the current 39.6% of forest to 40%, while others argue that forests should first satisfy the need of an increased population. If forests are considered the best option to satisfy food requirements, then forestland should be converted into agricultural land. Similarly, in developing countries like Nepal, essential infrastructure like roads and hydro-power projects will reduce forestland.

INTRODUCTION

It is very important to understand the opportunity cost as a result of a reduction in deforestation and forest degradation. The opportunity cost means the benefit lost from pursuing an alternative option of the present activity. Therefore, the opportunity cost in terms of REDD+ means, the net benefit received from forests when using other than the REDD+ mechanism.

To enter the REDD+ process, Nepal needs to stop deforestation and forest degradation. For that, we must forget the possibility of using forests for other beneficial purposes. While implementing REDD+, we need to be clear about how those requirements from other land uses, like agriculture, are met if forests are allocated for REDD+. Furthermore, a decision should only be made after analyzing the benefit from the selected option for implementation and the next best option being left. While doing analysis, the social, environmental and economic condition as well as other indirect benefits should be considered.

ANALYSIS OF ALTERNATE OPPORTUNITIES

While analyzing the opportunity costs for land use, at least 30-40 years period should be taken. The immediate benefit of forestland from other land use should be estimated, considering the opportunities of receiving long-term benefit and services from the forest. Forests provide not only direct short term benefits, but also various services (tangible and intangible) for the long term. In the context of REDD+, it is crucial to evaluate the present benefit from the forest prior to analyzing its opportunity costs. For this, valuation of forest products and ecosystem services

is essential. Valuation of ecosystem services is not a simple task. For example, the valuation for the water conserved during rain, water storage, oxygen flow and carbon dioxide sequestration is complex. Furthermore, many of these services cannot be provided through any other means. In addition, the enhancement of carbon stock and other ecosystem services from REDD+ are to be added during analysis.

Table 1: Comparative analysis of forest benefits

Benefit if used as forest under REDD+	Benefit if used for other purposes
• Regular supply of timber, firewood, fodder and other non timber forest products. • Improve livelihood of downstream and upstream communities due proper land and water use as a result of soil and watershed conservation. • Increase in eco-tourism and biodiversity conservation and benefit as a result of these. • Sequestration of atmospheric carbon and supply of oxygen. • Meet the religious and cultural requirements.	• Increase in food security due to expansion of agriculture land. • Reduction of landlessness due to availability of land. • Increase commercial livestock due to more pasture land. • Improved economic conditions due to increase employment opportunities. • Additional earning and employment because of commercial forest development.

Since the implementation of REDD+ is dependent on the sustainable management of forests, it is mandatory to keep forests at the local level. Thus, during implementation of REDD+, it is important to analyze and compare the direct and indirect benefit of forests, both when being used as forests or when forests are used for other purposes. While analyzing, the social, economic, and environmental aspects should also be considered.

The above method is to analyze the benefit of forestland use as forests and other uses. It is then necessary to analyze what will happen if present conditions continue - if all products and services from the forests will remain for the future as we are, what problems might arise, and inputs will be necessary.

Analysis of opportunity costs from REDD+ implementation in the context of Nepal

The forests are categorized into various management regimes. The comparative analysis among various management regimes are given below.

1. **Fully protected forest**

    In national parks and wildlife conservation areas, a management system for strict protection is applied. There is a high potential for carbon stock enhancement in this type of forest by further protection efforts. Payment under REDD+ can be received if the carbon stock is enhanced thorough protection. Though, theoretically, there is a high opportunity cost of these types of forests, in practice the analyses of opportunity costs does not provide a full picture, since these forests are kept for ecosystem and biodiversity conservation. Thus, the payment from REDD+ will be a bonus in strict protected forests.

2. Conservation areas

Conservation areas are established to conserve forests as well as to meet the demand of the local communities. However, the priority is given to conservation and to ensure local subsistence needs for forest products are fulfilled. Implementation of REDD+ in conservation areas might impair the right of local people to use and benefit from forest products. In such a situation, the socio-economic and ecological cost benefit analysis is done between the existing forest management practice (no REDD+) and further conservation of forest limiting local supply of forest products for REDD+ purposes. From the analysis, it would be good to enter in to REDD+ if the benefits (socio-economic & ecological) under REDD+ will be high.

3. Production forest

In the case of production forest, implementation of REDD+ includes an expansion of forests along with fulfillment of local demands. Under scientific forest management, a certain amount of growing stock of trees is maintained, which is essential either in REDD+ or no REDD+ situations. Hence, REDD+ benefits can be received by maintaining forest stock through reducing deforestation and forest degradation. The opportunity cost of forests will not be high unless there is a national financial crisis and forests are needed to address the problem (an unlikely scenario). As a result of management efforts to reduce deforestation and forest degradation, the decision (whether sell in the market or in REDD+ mechanism) on the use of surplus forest products after maintaining a certain level of growing stock is for forest managers. But before making the decision, analysis of investment and benefits is essential. When making a decision, forest managers should keep in mind that the REDD+ benefits can be received only by ensuring long-term forest stock and permanency.

CONCLUSION

It is equally important to analyze the relative benefit between the REDD+ process by reducing deforestation and forest degradation and from other land use of the forest.

As presented in the figure above, REDD+ should only be implemented if the benefit from REDD+ is greater than its alternative. If the opportunity cost is high, we should not enter into the REDD+ mechanism. However, the nation should consider other options if the opportunity cost of forest/REDD+ is socially, economically, politically, religiously, and ecologically higher. But the decision will be incomplete if made without a detailed research and analysis.

13 | Analysis of REDD+ stakeholders

WHO ARE STAKEHOLDERS?

Stakeholders of a program are those individual, communities or organizations who have an interest, a definite role and responsibility, and both positive and negative influence. The individuals, groups, institutions and communities directly affected by the REDD+ program are considered to be REDD+ stakeholders. During the implementation of REDD+, technical, political, economic, social and cultural aspects are directly or indirectly involved. As the REDD+ implementation process includes various aspects, stakeholders vary according to the level and the roles of stakeholders. The roles and rights of indigenous and forest-dependent people who are managing the forest and carrying out activities for forest carbon enhancement are entirely different than that of other related institutions. The issue to recognize these groups as rights holders has been raised in many forums. Therefore, a detailed analysis of the related stakeholders is essential for the successful, transparent and inclusive implementation of the REDD+ program.

STAKEHOLDER ANALYSIS AND NECESSITY

The process of identification of concerned groups (including rights holders) and a detailed analysis of their roles, responsibilities and rightss is known as a stakeholders' analysis. Though there is no common method for stakeholder analysis, various institutions have implemented projects after stakeholder analysis of their own design.

As REDD+continues to develop, understanding REDD+ and its implementation process is still not clear. But it has created high interest among governmental and nongovernmental organizations, forest managers, forest-dependent communities and other stakeholders. Therefore, there is a need for clear understanding on genuine interest, rights and responsibilities, and influence of various stakeholders. If analysis and outreach activities are not done properly, a situation arises where genuine stakeholders are unaware of benefits, impacts and opportunities, and limited groups are receiving benefits.

Stakeholder analysis is important for:

- Exchange of information/notice about REDD+ program.
- Reduction of potential conflicts among the stakeholders.
- Development of a transparent and straightforward REDD+ implementation process.
- Receiving feedback during the process of policy and program development and implementation.

- Agreement on roles and responsibilities among various stakeholders.
- Formation of policy and rules in participatory way.
- Maintaining a common understanding on issues such as effectiveness of program, requirements, etc.

METHODS FOR STAKEHOLDER ANALYSIS

Various methods of analysis for identifying stakeholders, their roles, responsibilities and impacts, are described below. These methods assist in collection of information on different aspects of stakeholders. According to our requirements, any one or more methods could be used for the analysis of stakeholders.

Method 1: Analysis of interest and influence

In this process, the level of REDD+ stakeholders is being clarified and a list of individuals, institutions, and groups who are concerned about REDD+ is being developed. The listed stakeholders are split into four categories on the basis of their interest in REDD+ programs and capacity to influence REDD+ implementation

1. High degree of interest in program, but has low capacity to influence the implementation process.
2. Less interest in program, but highly capable to influence the implementation process.
3. Low interest and influencing capacity in implementation.
4. Both the interest and capacity to influence in program implementation are high.

The above listed stakeholders could be placed in the matrix as shown in the figure below and can be analytically studied.

	A	B
INFLUENCE	Low interest but high degree of influence in implementation of the program	High interest and high influence in program implementation
	Low interest and less influence in implementation	High interest but less influence in implementation of the program
	C	D

INTEREST
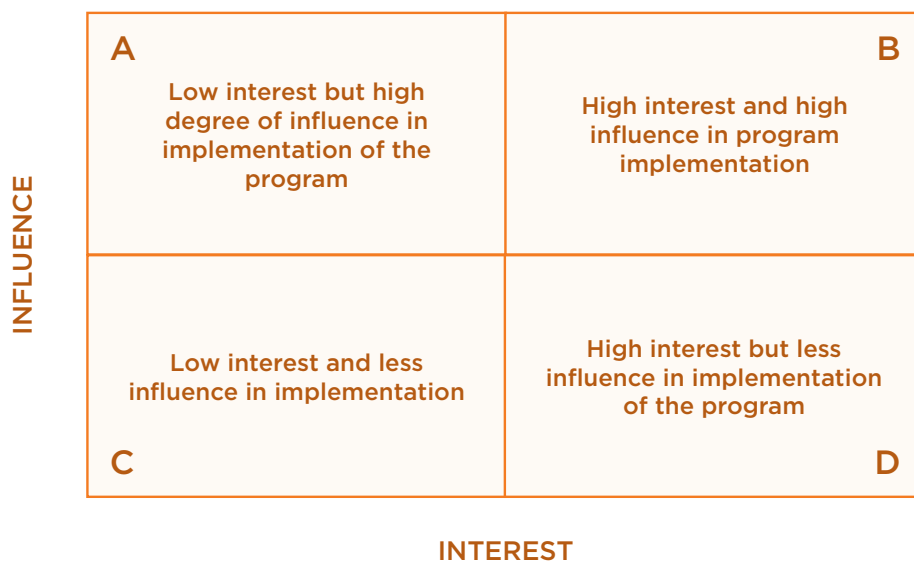
Nature of stakeholders in REDD+ and analysis of coordination processes:

Stakeholder	Nature of stakeholders	Coordination process
Group A Low interest but high influence	The organizations or individuals of this group are associated with the power center, at the policy formulation level. They have interest if there is benefit from the REDD+ program. They will be ready to assist the program if there is potential at benefit. It is necessary to coordinate with them as the stakeholders at this level will play a key role in policy formation and in implementation.	From the initial stage of REDD+, these stakeholders should be coordinated and involved. Their role should be clearly stated and advocated in policy formation of REDD+ program.
Group B High interest and high influence	As the stakeholders in this group are in responsible positions, they naturally have high interest in REDD+. They are also influence centers as they are at the policy level. These stakeholders are more active in initial stage of REDD+ program.	The participation of these stakeholders is necessary for the successful REDD+ program. They have to facilitate in clarifying responsibility and roles of other stakeholders and in their participation.
Group C Low interest and less influence	The stakeholders of this group have low interest and less influence. These stakeholders are not interested because they might have been excluded from the benefit from forests in the past and have less information about the REDD+ program. In some cases, the influence might be grabbed by the stakeholders of Group A and as a result, this group has less interest on the program.	The interest of stakeholders of this group could be enhanced by an awareness program about REDD+, informative interaction and discussions focusing on rights and their issues. Similarly, to ensure their participation, there should be clarity on the investment and the benefits. As they will not be ready for participation until their rights are assured, their participation should be increased through rights-based REDD+ discussion.
Group D High interest but low influence	The stakeholders of this group have more interest in REDD+ with or without enough knowledge in the hope that in future they will receive benefit from REDD+. However, they do not have clear role in policy formation and resource management.	This group will may have a negative attitude towards the program if they do not receive benefit from the program as they have great interest. They should be made clear about their responsibility and the benefits from REDD+ program.

As stated above, four groups of stakeholder exist in Nepal. According to the REDD+ Readiness Preparation Proposal, REDD+ stakeholders in Nepal are grouped as below. As stakeholders, their interest and power are different, and a detailed analysis is necessary.

INFLUENCE

A. Stakeholder with high influence and low interest

- Political parties
- Human rights activists
- Police, administration and army
- Parliamentary committee on natural resources
- Courts
- Commissions (Commission of Investigation of Abuse of Authority, etc.)

B. Stakeholder wielding high influence and high interest

- MoFSC and its departments (especially DoF, DoSCWM, DNPWC, DFRS, DFO, Range Post)
- Commissions related to bonded labor (Kamaiya), Landless, etc.
- Forest Product Development Committee
- NPC, MoF, MoE
- Journalists and media
- Timber Corporation of Nepal,
- Hydro-electric projects,
- Promoters of Alternative Energy
- Federations concerning forest users, indigenous peoples, *Dalit*, women

C. Stakeholder with low influence and low interest

- Housing and Construction
- Local level hotel entrepreneurs
- Financial institutions
- Mining for construction raw materials
- Transport entrepreneurs
- Development Projects using forest areas

D. Stakeholders with low influence and high interest

- Indigenous peoples (having most direct relation to forests)
- Vulnerable groups like Raute, Kamaiya, Chepang, Dalit, Women etc.
- Charcoal burner groups, NTFP collectors groups
- CFUGs, CFMGs
- NTFP entrepreneurs, related Committees
- Centre for Rural Technology
- Brick Industries
- NGOs and
- MoFSC affiliated technical trade unions
- MoFSC affiliated Human Resources Development Wing, Training Centre and Outreach Wing
- MoAC, MoW and associated offices
- DoCSI and Associated offices
- VDC, DDC

INTEREST

Figure 3. Stakeholders grouping based on relative power and interest

"Note: This is not an exhaustive list of stakeholders."

Method 2: Analysis of stakeholders on the basis of institutional nature and rights and responsibility

The previous method of stakeholder analysis provides the basic information about stakeholders related to REDD+. In this method, analysis is done on the basis of rights, responsibility, and benefit. According to the REDD+ readiness preparation proposal, the REDD+ stakeholders are broken into seven categories. They include governmental, private, non-governmental, and indigenous and forest-dependent communities, other local communities, vulnerable groups (women, Dalit and youth) and researchers. In this method, their rights, responsibilities and benefits are analyzed carefully.

Rights : The condition of legal and traditional access and control on REDD+ related resources and programs.

Responsibility : The contribution and role for REDD+ programs and effective management of resources.

Benefits : The benefit and concessions receive from REDD+ according to rights and responsibilities.

Stakeholders, their rights, responsibility and result analysis framework:

Stakeholders	Rights	Responsibility	Result, benefit and impacts

In this method, a list of direct and indirect stakeholders (existing and potential) is prepared at the beginning. The second step is to analyze rights and responsibilities of various stakeholders and impacts of REDD+ on those stakeholders. As the impacts of a program are not always necessarily positive, the negative impact to various stakeholders should be taken into account. During implementation of the program, priority should be given to those who will be directly impacted (positively or negatively) and those stakeholders who have immense rights over the resources as rights holders.

Method 3: Stakeholder analysis based on roles and responsibilities

The stakeholders could also be categorized and analyzed based on their functions and roles in the society. The analysis by functional categories will assist in identifying relationships and minimizing potential conflicts. Hence, this type of category and analysis process is important.

The stakeholders who have a major role in REDD+ implementation are as follows:

- Policy formulation: parliament, ministry.
- Capacity building and technical assistance: training department, non-governmental organizations, projects.
- Studies and research: forest research and survey department, research foundations, research organization.
- Advocacy: NGO, federation, networks, professional organization.
- Service provider: NGO, district level governmental bodies, projects.
- Regulating bodies: district level governmental bodies, VDC, DDC, municipalities.
- Financial service providers: bank, private sector, cooperatives, and international donors.
- Local communities: CFUGs, other community groups including women, Dalit, indigenous peoples, and other marginalized groups

CONCLUSION

In the context of REDD+ strategy formation and implementation, the actual beneficiaries from the program is not yet clear. Therefore, until the identification of REDD+ stakeholders and analysis is done by separating rights holders and stakeholders, the benefit sharing mechanism cannot be decided. The forest carbon ownership determines the REDD+ rights holder.

The above mentioned stakeholders should be provided with the full set of relevant REDD+ information in a transparent and easily understandable way. Thus, they will be able to make their own informed decisions on how and if they would like to participate in the REDD+ process. There are various classes, groups and organizations interested in REDD+ in Nepal. Specifically, the forest user groups, the indigenous people, and related governmental bodies are the direct stakeholders of REDD+. Similarly, nongovernmental organizations, the media, and political parties are also recognized as stakeholders in REDD+.

The success of REDD+ in Nepal is not only to receive payments and international assistance, it also is to provide the REDD+ benefits to the communities who are dependent on forests and have been managing forests for centuries. In the context of Nepal, the transparent, legitimate benefit sharing process should be developed only after the detailed analysis of REDD+ stakeholders.

Module

5

FOREST TENURE: ACCESS AND BENEFIT SHARING

Introduction

An in-depth assessment of the deforestation and forest degradation situation in Nepal has been discussed in previous sessions. This module, therefore, focuses on the existing forest management system, tenure, social and economic diversity of Nepal, as well as the unequal access to resources and the challenges to the legitimate sharing of resources at the national, district and local levels.

Objective

To clarify the contrast in resource access and benefit sharing, forest tenure arrangements, and the socio-political situation within different forest management regimes in Nepal.

Sessions

This module has following major sessions:

Session 14: Existing forest management regimes, and forest tenure and rights in Nepal

Session 15: Social differentiation and differential access to forest resource benefit sharing

Session 16: Challenges for legitimate sharing of benefits at local, district, and national levels

14 Existing forest management regimes, forest tenure and rights in Nepal

Time:

1 hour
and 30 minutes

Methods:

Fish bowl, discussion, presentation and lecture.

Materials:

1. Meta-card, marker pen, masking tape, brown paper, white board.
2. REDD+ documentary, multimedia, sound system, projector and a laptop computer.

Reading:

1. Reading 14: Situation and issue of forest tenure in Nepal.

INTRODUCTION

For effective implementation of REDD+, forest tenure and tenure rights need to be clearly understood. Nepal has different forest management regimes and access to forest resources under different forest tenure has been vaguely defined. There is a lack of authenticated data on forest and land tenure, which could prove a major impediment to the implementation of REDD+ and the benefit sharing that flows from it. These are the key issues, which will be discussed in this session.

OBJECTIVES

At the end of this session, participants will be able to:

- List out and explain Nepal's existing forest management systems.
- Explain the complexities of forest tenure, rights, and access under different forest management systems.
- Analyze the impacts of above discussed issues on the benefit distribution under REDD+.

PREPARATION

- Become familiar with the fish bowl exercise.
- A presentation on the concept of forest tenure and forest rights.

SESSION ACTIVITIES

- Explain the objectives, methodology, timeframe, and relevancy of the subject matter.
- Give a short presentation on forest rights and forest tenure concepts.
- From plenary discussion, list out the existing forest management systems/regimes of Nepal.
- Display tabulated discussion from a plenary on the benefits sharing under various forest management regimes.

- Using fish bowl exercise, identify the scenario of benefit sharing under REDD+ and its impact on the livelihoods of the local people.
- Summarize the key discussions on the white board and encourage participants to ask questions for clarification.

EVALUATION

Evaluate the session asking the following questions:
- What are the existing forest management regimes in Nepal?
- In Community Forestry system, who retains forest tenure and forest product rights?
- If REDD+ is implemented within the existing system how would existing benefit sharing mechanism be affected?

CONCLUSION

Clarity in forest tenure supports the sustainable management of forests. It determines what resources can be used by whom and for how much time and under what conditions. In the context of Nepal, tenure can be seen as legal ownership or possession. In practice, there are various forest management practices that exist, including private forest, community forest, leasehold forest, forest managed by government, and conserved forest. On occasions, amendments and changes are made on these management models to ensure maximum benefits for local stakeholders and for the advancement of the resource management. However, the communities dependent on the forest and forest products do not receive sufficient benefits from these management practices. Change in forest management practices alter and redefine the land tenure and resource utilization rights.

The foremost thing that needs adequate understanding is whether REDD+ will be able to deliver the expected benefits within existing forest management systems and the prevailing land tenure and user rights framework. A common concern is that if the forest tenure system and user rights regimes are not properly defined, REDD+ may fail to deliver what is expected. Therefore, clear land tenure and rights are a must. Many see REDD+ as a tool to fulfill this necessary condition for its implementation and success in the country. In the absence of clearly defined land tenure and user rights, there may be conflicting situations for the claim of carbon ownership. Furthermore, the forest tenure process has a direct link to the security of forest-dependent communities. Therefore, secured forest tenure of local communities is imperative for the conservation of forests from deforestation and degradation and also for inviting active participation from local communities in the REDD+ process.

FORWARD LINKAGE

In this session, the existing forest management system, forest resources and land tenure has been discussed. If the REDD+ process is implemented within the existing forest management regime, it may lead to uncertainty in benefits distribution and may therefore be less likely to benefit forest-dependent communities. The next session directly links with the forest tenure and user rights, since it focuses on caste, ethnicity, gender, and religion based socio-cultural settings in the country and its impact on the distribution of benefit obtained from the forest resources.

Social differentiation and differential access to forest resource benefit sharing

Time:
1 hour and 30 minutes

Methods:
Plenary discussion, questionnaire, presentation, lecture.

Materials:
1. Brown paper, marker pen, white board.
2. Multimedia equipments, computer.

Readings:
1. Reading 15: Nepalese society and social discrimination.
2. Treaties/ agreements related to women and indigenous peoples' rights over natural resources.

INTRODUCTION

Socio-cultural diversity is one of the important features of Nepalese society. This has been manifested in terms of caste, gender, linguistics, ethnicity, sex, and class. Many times, such socio-cultural variation has resulted in social discrimination leading to unequal access to resources and continued poverty in large tracts of forests in the country. The disparity within the diversity of population has affected the social, economic, and political life of people. This session focuses on the social disparity and its impact on access to and sharing of resources.

OBJECTIVES

At the end of this session, participants will be able to:

- Review the existing socio-political and cultural disparity that is prevalent in the Nepalese society.
- List the effects of social disparity on resource utilization and benefit sharing.
- Discuss and list the various national and international instruments that exist for promoting and protecting the rights of Indigenous people.

PREPARATION

- Prepare a short presentation based on the reading materials.
- Facilitator should be well versed in major treaties/ agreements related to community's benefit.

SESSION ACTIVITIES

- Introduce session by highlighting its importance, proposed content, and time required.

- Carry out plenary discussion on existing socio-economic and cultural diversity of society and the disparity of this diversity and its effect on the socio-economic status of the people.
- Synthesize the key points of discussion along with the statistics and link them to existing structures.
- Encourage participants to share their knowledge and understanding on the existing policies, laws, treaties and agreements on basic human rights and their protection.
- Display the responses for everybody's knowledge and sharing.
- Present the key aspects of the session and a summary of the key agreements/ treaties (ILO169, CBD, UNDRIP, etc.).
- Conclude the session by emphasizing and clarifying the necessity of secured rights of socially secluded people by considering these treaties and rights during REDD+ implementation. Encourage participants to raise questions for clarification.

EVALUATION

Evaluate the session asking the following questions:

- How has access to resources and equitable benefits sharing been affected by the social structure and diversity of Nepal?
- In the context of REDD+, name any two international treaties that exists for the promotion and protection of rights of indigenous communities.

CONCLUSION

In Nepal social, cultural, economic, and religious diversity has led to socio-economic disparity. Access and control over social, economic and natural resources is held by certain sections of society, while people dependent on forest and natural resources are generally marginalized from potential benefits. Therefore, a big challenge for Nepal is to explore how the access, rights and benefits of natural resources can reach the poor and marginalized. Before implementing REDD+, fundamental issues concerned with tenure and rights of the forest-dependent communities need to be addressed. The benefits from REDD+ should reach them without compromising their requirements.

FORWARD LINKAGE

In this session we discussed on social structure, the diversity and the disparity originating from the diversity in Nepalese society. In the next session we will focus more on benefit sharing and its challenges, linking them with the socio-cultural diversity and disparity in the country.

16 Challenges in equitable benefit sharing at local, district and national level

Time:
1 hour and 30 minutes

Methods:
Brainstorming, group discussion and presentation.

Materials:
1. Brown paper, Marker pen, Masking tape, white board, laptop computer.

Readings:
1. Reading 16: Challenges of benefit sharing.

INTRODUCTION

In the previous session we discussed social diversity and its impact on the socio-economic and political aspects of people's life in Nepalese society. Now, it is necessary to discuss how equitable sharing of benefits from REDD+ can be realized for rights holders. Therefore, this session focuses on the challenges in sharing REDD+ benefits at the local, district and national levels.

OBJECTIVES

At the end of this session, participants will be able to:

- Understand the existing benefit sharing practices in Nepal.
- Suggest possible benefit sharing modalities, related challenges, and potential solutions
- Identify the social risk associated with REDD+ at various levels.
- Learn from the international examples of REDD+ benefits sharing mechanism.

PREPARATION

- Prepare training material about the possible benefits from REDD+ and the stakeholders or rights holders that may share them.
- Keep flip chart and other necessary materials ready.

SESSION ACTIVITIES

- Explain to participants the objectives, content and time frame of the session.
- Provide the participants with selected case studies regarding national and international level benefit sharing practices and allow sufficient time for reading.
- Ask participants to highlight the key points and message of the case studies and take notes on a white board/flip chart.

- Ask participants to recall the stakeholder analysis session of module four and from plenary discussions identify the potential stakeholders for REDD+ benefit sharing in Nepal. While identifying the stakeholders, keep in mind that they should be listed based on their inputs.
- Ask participants to suggest a suitable mechanism for the benefit sharing among the identified stakeholders.
- Through plenary discussion, list out the issues in sharing of benefits from the existing forest condition and forest resources.
- Define existing issues of benefit sharing, discuss and list out the potential challenges in REDD+ mechanism and measures to address them.
- Summarize the key points obtained from the discussion. Encourage participants to raise questions for clarification.

EVALUATION

Evaluate the session asking the following questions:
- Suggest any two important issues regarding the sharing of benefits in the present context and two important issues after the implementation of REDD+ (from the issues identified during discussions).

CONCLUSION

It is very important to assess the appropriate mechanisms for equitable benefits-sharing so that the forest manager and local communities who contributed to REDD+ could benefit directly. If the major benefits from REDD+ do not reach local communities it will be difficult to make them realize that forest conservation provides more benefit than using the forest for other purposes.

In countries like Brazil and Indonesia, the formation of appropriate mechanisms for benefit distribution has already been initiated. In Indonesia, the national policy on REDD+ has already been passed and the government mechanism has a crucial role in sharing the benefits from REDD+. According to the policy of the forest management system of Indonesia, depending upon the situation, 10-50% of the benefits from REDD+ will go to the government, 20-70% to the community and 20-60% for the project developers. n Brazil, the benefits earned from REDD+ do not go to the government treasury, but rather are proposed to be used for the socio-economic development of the country. The REDD+ income is deposited in the Amazon trust established at the National Bank.

In Nepal, REDD+ has not been implemented yet. On the basis of reviewing the practices proposed by other countries and the debate among researchers and policy makers, different alternatives are being put on the table. In the context of Nepal, it is very important to organize the debate to focus on how the benefits can reach down to the grassroots level and the methods for equitable benefit sharing.

FORWARD LINKAGE

Conclude the session informing that what has been initiated at the national level and how the process is going ahead will be discussed in the next modules.

READING MATERIALS

14 Situation and issue of forest tenure and forest rights in Nepal

CONCEPT OF FOREST OWNERSHIP

Holding tenure over a resource defines one's rights over those resources (Vandergeest 1997). The tenure relationship with the property is determined by social relations, such as class, sex, politics, economics, and law. These relations are dynamic; hence the right over the property is defined and then redefined over time. But the real challenge is to define the right over the property with absolute understanding, particularly where rights overlap with each other and are conflicting (Vandergeest 1997). Public property and resource rights are principally understood as a bundle of rights. Such rights can be owned by a person, a group, or any other political bodies. This type of tenure is not only found in forests but also in other areas such as water and land. The bundle of rights includes the rights over different aspects of the resource, including tenure, access, utilization of products, and management.
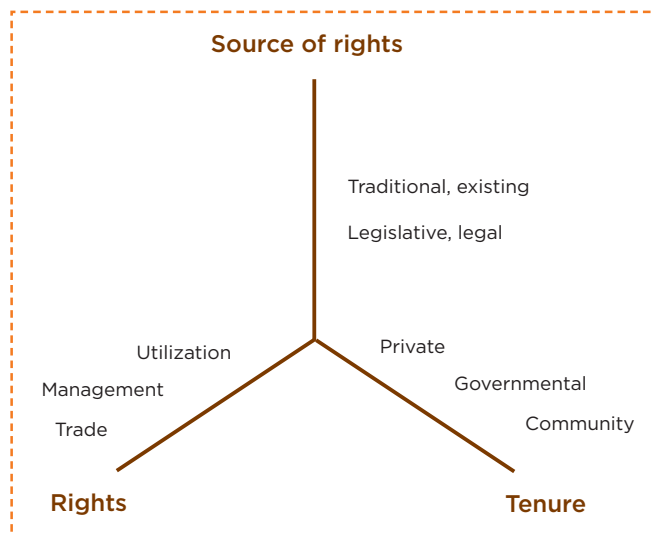
Figure 1: Rights consists of various layers of rights and tenure.

There are two primary sources of resource rights: those given by the law (*De-jure*), and those defined by traditional use (*De-facto*). The De-facto right may not be recognized legally, but it has been practiced for years. Acquired rights of ownership over resources belong to an individual, community or state. There are various layers of such ownership. A bundle of rights consists of various layers of rights and tenure. This can be described from Figure 1.

The bundle of rights is viewed at two layers: operational level rights and collective choice level rights. Operational level rights include access to the resources and the right to use the resource, whereas the collective choice level rights include the resource management right, right to restrict resource utilization, the right to trade forest products, and the right to alter responsibility (alienation rights). Communities have received these rights to local level resources through Nepal's decentralization process. Although forest resources are among the largest of various community resources, tenure, rights, and beneficiaries to these resources are not yet clear. Due to this confusion, services and products from forests don't often benefit local

communities. This document intends to discuss the rights and tenure over forests, in the context of Nepal. In this section, we will discuss who possesses tenure, how tenure is determined, and how tenure affects benefits from REDD+.

Forest tenure determines the user, time period, and conditions for the use of forest services in a defined forest area. It determines which forest resources are utilized by whom, for how long, and under what conditions and rules. Therefore, it is essential to understand it from the aspect of forest ownership and rights over forest resources. The rights and tenure have direct effect on the sustainable management of forests. In Nepal, various forest management regimes are in practice. New methods are introduced and amendments are made from time to time to ensure maximum benefits for stakeholders from forest services and for the improvement of resource management. However, these efforts are often not successful, with forest-dependent communities not benefiting in any substantial way.

STATUS OF LAND TENURE IN NEPAL

In Nepal, various changes have been made since 1950 in forest tenure and tenure arrangements. However, Nepal has not adopted a system that provides full tenure to local communities. Community forestry is known as the most decentralized forest management practice, where people have access and rights over the forest products, but there is still suspicion from local communities due to unanticipated change in benefit sharing. The forest management system in Nepal is classified as: Private Forest, Community Forest, Leasehold Forest, Collaborative Forest, Forest Managed by Government, and Conservation Forest. While analyzing tenure in the various forest management practices, it is important to keep in mind that there is no absolute right or ownership in any of the management systems.

1. **Traditional condition of forest ownership**

    Traditional forest management systems still exist in various parts of Nepal. These systems operate differently from the legal system recognized by the state, but are functioning in an organized manner. In this type of forest management practice, a few influential people have the most power. Some evidence suggests that such a management system can fails to distribute benefits among the forest-dependent people. There is also very little or no participation of poor people in decision making process found in this management system.

2. **Legal model of forest tenure (tenure regime)**

    There are various tenure regimes within the legal frameworks of forest management. Though there are formal and informal involvements of both parties, the legal aspects have been given priority. According to the National Constitution 2047 section 67, the government has the right to change forestland use. This has increased insecurity of tenure within community forests. In many cases, the user groups are affected by changes in provisions covering the distribution of ownership, need for prior notice and information coordination, and conflict management mechanisms.

3. Long-term tenure and benefit distribution mechanism

In the case of forest resource management, there are various legal provisions respective to different forest management regimes. Long term ownership and forest use rights are essential for the sustainable management of forest resources. The forest ownership, time period and management process of the existing forest management system of Nepal are described in Table 1, below (*Acharya, Adhikari and Khanal, 2008*).

Table 1: Forest tenure and time period of existing forest management of Nepal

Management system	Time period	Major characteristics
Private management - Private forest (either registered or not)	According to will of forest owner.	- Authorized permit needed for the sale and distribution of forest products in the market. - Compulsory land tax. - VAT added. - Restriction in plantation and trade of some specific species.
Managed by state - forest managed by government	Tenure is infinite but management is determined according to half yearly and yearly plan.	- May ignore the people's rights on forest - Permission for collection of necessary non timber forest products for household use.
Conserved forest	Tenure infinite but management is determined by half yearly or yearly plan.	Conservation efforts, typically without a forest management plan.
National parks and wild life conservation	Tenure is infinite but management is defined according to five years plan.	- Limited access for people. - Permission for use of thatching materials (Khar, Dhadia) with minimum tax, 30-50% of income should be invested in local development.
Joint forest – community forest	- Tenure period is legally undefined. - Management is regulated by 5 or 10 years plan.	- Address the right of traditional use and access to the forest. - Members and non members are defined by understanding. The right for the sales and the cost determination of forest product resides within the user group. - Right for amendment and revision of management plan resides within the user group. - User group has the right for management rules decision. - No restriction on plantation of specific species and cutting down of green tree.

Management system	Time period	Major characteristics
Lease-hold Forest	40 years (can be increased by 40 years)	▪ Restriction on use of existing trees. ▪ The degraded or low quality lands are handed over. ▪ Generational handover is not well defined.
Religious forest	Tenure is infinite but management is defined according to yearly or five yearly plans.	▪ The right of traditional resource utilization should be reformulated. ▪ Restriction on trade of forest products for business purpose.
Partnership forest management	▪ Tenure is infinite. ▪ Management is defined according to five years plan.	▪ Rules and regulations are ambiguous. ▪ 25% of profit is given to local community. The branches are allowed for the local people.
Buffer zone community forest management	▪ Tenure is infinite. ▪ Management defined according to five years plan.	▪ 30-50% of profit is allowed to spend on buffer zone. ▪ Community forests should work according to buffer zone management plan. ▪ Outsiders have no rights in the community forest to sell the timber.

The impacts of various forest management regimes on community livelihood, income, and the condition of forests should be closely analyzed. In this context, it is essential to analyze the impact of REDD+ on the livelihood of communities - whether their earning opportunities increase or not, whether there is a possibility to improve forest conditions, and whether the received benefit reaches forest-dependent and marginalized peoples or not.

Carbon sequestration and right over resources

Carbon above the ground 80%

Dead and decayed timber, leafletter, and underground soil carbon 20%
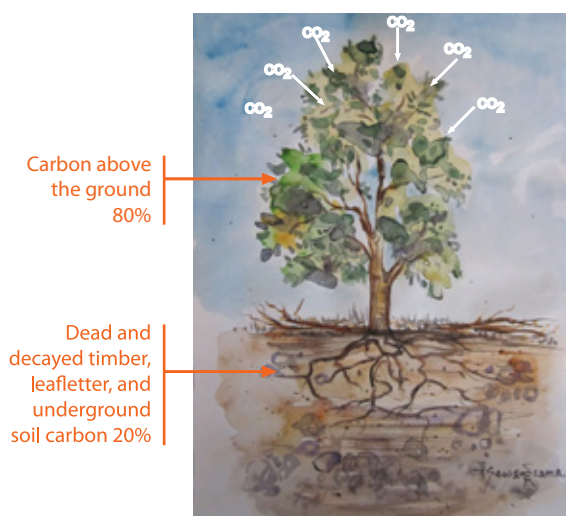
The carbon within the forest should also be measured carefully. Forest carbon is retained in trees, plants, leaves, litter, and roots.

All these parts are collectively known as carbon pools. Five basic carbon pools have been identified:

1. Above ground biomass
2. Below ground biomass
3. Dead wood
4. Leaf litter
5. Soil-organic carbon

These sources of carbon sequestration are key components for programs like REDD+. But if there is uncertainty on the tenure of the resources acting as carbon pools, this may result in conflict over payment and complicate whole management process. In the present legal framework, the community resource use and trade rights are clearly seen. However, since the community does not hold tenure over the land, the government could claim carbon rights. The government could claim organic carbon within soil as well as below ground biomass. This reduces the community's capability of acquiring the benefit from the carbon trade. In a situation a community has previously faced challenges to their established rights over forest resources, the carbon trade could trigger this insecurity as there is no legal framework to clarify the forest carbon right in Nepal. It is important for all stakeholders to press for the assurance of local and indigenous communities' access to the available resources.

IMPACT OF FOREST TENURE ON REDD+

The foremost thing that we need to keep in mind is whether or not Nepal can benefit from REDD+ by continuing its existing forest management practices, including land tenure and rights over resource utilization. If yes, then who is benefiting and how? REDD+ could emerge as an important opportunity if the ownership of forest resources and land tenure is identified, while satisfying the necessary criteria of REDD+. Otherwise, the ownership of carbon in a community forest, which is the most successful forest management system in Nepal, could be a major issue and the source of conflict. One might argue that since the forest belongs to the community it is obvious that the amount of money that is obtained for carbon sequestration must belong to them, but there are numerous obstacles associated with this approach. If existing conditions of ownership persist, then the government could retain the money in the name of national development, arguing that the community forest is handed to the people for forest resources utilization so the benefit from the carbon sequestration belongs to the government.

Therefore, the definition of carbon rights should be made clear in order to ensure the right over the resources. The effective monitoring of these rights and the sustainable regulation of ownership is equally important. Hence, it is necessary to clarify the use of communities and rights on carbon and the carbon trade. Furthermore, communities should be encouraged to acknowledge the carbon trade as relatively more beneficial than the benefits from other uses. However, this does not imply that governmental bodies and other stakeholders are not benefiting or not able to benefit, but processes should be made clear for the equitable distribution of the benefit.

Hence, it should be kept in mind that access to and control of resources by forest-dependent people is directly affected by the forest right and tenure regime. Thus, secure tenure and rights is imperative for the conservation of forest resources and the protection of forests from degradation. The active participation of forest dependent poor people in REDD+ is also essential.

15 Nepalese society and social discrimination

INTRODUCTION

The diversity of Nepalese society on the basis of language, religion, and culture is positive thing. This diversity has contributed to the conservation of the social, cultural, linguistic, and historical preservation of different communities. In the context of natural resource management, this diversity has a very deep relationship with the local resources. The religion, culture and tradition of these different communities are directly associated with the conservation, management and utilization of locally available land, forests, and rivers. Therefore, the conservation of diversity refers to the preservation of their identity and also the management and conservation of available resources by means of their traditional and indigenous knowledge.

From this cultural and social diversity, there has also been social disparity and exclusion. The creator of modern Nepal, King Prithivi Narayan Shah (Gurkha King) had stated that "Nepal is a common garden of all caste and color of people." However, unified Nepal failed to respect this diversity and carried on the caste and religious disparity that started in the 14th century. The persistence of linguistic and cultural discrimination became a major reason for prevalent social disparity. The post-unification period, which fostered central dominance and dismantled local and community structures, promoted various forms of exclusion. This resulted in the promotion of people belonging to Hindu Aryan communities, while other communities gradually became weaker and marginalized from society. Discrimination on the basis of caste, race, gender, ethnicity, religion, and language also became more prominent, contributing to the extinction of culture and language of ethnic communities. This resulted in economic disparity. Equal treatment was never felt by a majority of Nepalese people.

Gender discrimination is also prevalent, as is racial discrimination. Social discrimination is entrenched in Hinduism and its culture, as many Hindu religious books directly discriminate against certain groups. This is how social discrimination and disparity became part of the historical process of development of Nepalese society.

SOCIAL EXCLUSION AND POLITICAL DISPARITY

The unified Nepal under the autocratic ruling of the Shah Dynasty was unitary, centralized, and non-inclusive. During this period, the foundation of social disparity and social exclusion became much stronger in Nepal, leading to various forms of discrimination. For example, the communities that are placed in top of the racial and caste hierarchy have the political and administrative majority or dominance.

Table 1: Integrated caste/ethnicity index of representation in governance, 2056

Institution	Parbate Tagadhari	Newar	Madhesi	Parbate Janajati	Dalit	Total
Constitutional bodies	14	6	3	2		25
Ministers	20	3	5	4		32
Judiciary	181	32	18	4		235
Legislature	158	20	46	36	4	256
Civil Administration	190	43	9	3		245
Political Party leaders	97	18	26	25		166
DDC Chairs, Mayors/ Vice Mayors	106	30	31	23		190
Civil society leaders	41	8	4	1		54
Total	808	160	142	98	4	1212
Shared % in 100	66.6	13.2	11.7	8.1	0.3	
Population %	31.6	5.3	30.9	22.2	8.7	
Percentage shared	35	7.6	-19.2	-14.1	-8.4	

Source: Neupane, 2000 (courtesy: Gurung, 2009)

Table 1 shows the unequal and under-representation of various caste and ethnic groups in governance and administration levels of the state. There is strong evidence that there has been a dominance of certain communities and classes in the social, political, governance and administrative areas. Hence, there is a need for the development of a new system that will diminish the existing discrimination and exclusion in the society.

SOCIAL DISCRIMINATION AND ACCESS TO RESOURCES

It is clear that there is vast differentiation in the economic, social, political, administrative and educational sector ever since the formation of Nepalese society and culture. Reducing such dissimilarity in society is essential to assure people's access to the locally available resources.

Table 2: Average life expectancy and per capita income according to caste, 1996

Social group	Average age (years)	Per capita income (Rs)
1) Lingual group		
i.) Newar	62.2	11,953
2) Caste group		
ii) Bahun	60.8	9,921
iii) Chettri	56.3	7,744
iv) Terai castes	58.4	6,911
v) Silpi castes	50	4,940

Social group	Average age (years)	Per capita income (Rs)
3) Parbate caste		
vi) Gurung, Limbu, Magar, Rai, Sherpa	53.0	6,607
4) Religious group		
vii) Muslim	48.7	6,336
5) Others	54.4	7,312
Nepal	**55.0**	**7,673**

Source: NESAC, 1998 (courtesy: Gurung, 2009)

The above table shows the high degree of inequity on the resource access in caste system. This disparity exists not only in caste but also in regional, lingual and sex (NESAC).

Establishing resource rights and access for socially excluded people will increase personal, family, and community living standards across Nepa. Similarly, it will increases the community's capacity of discussion and argument in resource management, resource governance, resource conservation, and distribution of benefits from resources. Therefore, the foremost and basic thing to be done for the reduction of discrimination in Nepalese society is establishment of resource access for excluded racial, regional, sexual and lingual communities.

Disparity between male and female

Gender discrimination between male and female is one of the most prevalent issues in Nepalese society. The patriarchal structure that has been promoted by Hindu culture and tradition is responsible for the discrimination between men and women. Different statistics show that the condition of women is frail as compared to men in various areas such as education, employment, health, politics, socio-economy and cultural aspects. In the case of interrelation with nature, women are much dependent on natural resources. But a woman's participation and role in the formation of policies, rules and other decision making processes is very rare. The eradication of such inequality of rights and access will change Nepalese society.

Disparity between Dalit and Non-Dalit

The word 'Dalit' has close etymological link with Nepali word 'Dalai' or 'Dalnu' which mean to crush, oppress, exploit or suppress. This expression is given to people who can be suppressed and used by others as per their wish. Thus in Nepalese society it gives the impression that Dalits are a group of people who have been exploited and suppressed by non-Dalit communities, according to their wish. The basis of such oppression, exclusion, suppression, and exploitation of Dalit communities is caste-based discrimination. The fact is that Dalit communities are more socially, politically and economically vulnerable than the other communities in Nepal. Caste based discrimination derives its legitimacy from Hindu religion and scriptures. Dalit communities have been socially, economically and politically excluded from the 14th century because of the introduction of the caste system, which was influenced by the traditional Hindu religion definition.

Regional disparity of Nepalese society

The regional disparity is one dimension of discrimination in Nepalese society. The social and economic position of the far western and mid-western regions of Nepal is relatively vulnerable. Communities living in these regions are politically isolated and have limited natural resources. People living in remote areas in these regions are deprived of services provided by the state. The government has not been able to provide the facilities and services equally in all the regions. Most of the remote areas are lagging behind because of political and administrative complications, rather than resource availability.

Class disparity in Nepalese society

Class stratification is one salient aspect of Nepalese society. In the social and political system, social discrimination is evident in various areas. Groups of people or families that are economically affluent have greater access to education, health, and employment. Access to natural resources is also influenced by class, with economically deprived communities having relatively less access. Abolishing class-based disparity that promotes social discrimination is crucial for the future of Nepal.

Social disparity and natural resources benefit sharing

While it is important to analyze the reasons behind existing social disparity in Nepal, it is even more important to work toward minimizing such disparity. Nepal is one of the richest countries in terms of natural resources. Effective management of the available resources such as water, land, forest, and minerals will reinforce national development. Social disparity has a significant effect on rights over natural resource services and in their distribution. In this context, the equitable distribution of benefits from REDD+ among stakeholders is necessary.

The existing disparity of our society will likely create conflict in forest resource management during the distribution of benefits from REDD+. Therefore, the benefits should be equitable distributed among communities, including those that have been excluded, marginalized and discriminated throughout the historical process.

Social disparity and right on the local resources

The existing social disparity should be considered with a model of rights over the available natural resources and nature. According to national and international treaties, conventions and rules, indigenous people have the primary rights on these resources. But, it is difficult to elaborate the practice between such a bundle of rights and Nepalese social, economic political and cultural reality. The rights of indigenous people are illustrated by different national and international treaties and conventions, but it is very difficult to rectify the rights in practice in such a society as Nepal. Furthermore, the rights of very different and marginalized indigenous groups such as Dalit community and the Raute should be compared and studied cautiously. Therefore, to lessen the issue of social disparity, the provision for the rights over natural resources should be defined and redefined cautiously and should be based on practical realities.

RIGHTS OF INDIGENOUS PEOPLE OVER NATURAL RESOURCES ESTABLISHED IN INTERNATIONAL TREATIES

The recognition of rights of indigenous people in ILO 169 and CBD 1992 are important to consider here. The ILO Convention states that indigenous peoples have rights to the natural resources of their territories, including the right to participate in the use, management, protection and conservation of these resources. Similarly, participation of indigenous people in every development activity has to be ensured. States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent on the approval of any development projects. The peoples concerned shall whenever possible participate in the benefit of such activities, and shall receive fair compensation for any damages which they may sustain as a result of such activities. The Nepal Federation of Indigenous Nationalities (NEFIN) has already made public a 14 points declaration (see annex 1) ensuring the rights of indigenous people under climate change and REDD+ processes based on ILO Convention 169.

The Convention on Biological Diversity (1992) has recognized the right of indigenous people on biodiversity and local resources. Section 8(j) of the convention clearly points out that wherever possible governments should respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles. The treaty has made a great contribution in the equitable allocation of remuneration obtained from biodiversity among the indigenous people and forest dependent people.

CONTEXT OF COMMUNITY RIGHT ON THE RESOURCES

There is sufficient evidence that local communities are capable in ensuring the sustainable management of local resources. Community Forestry in Nepal is one of these examples. Such rights-based models can become widespread in a country like Nepal with its diverse social and cultural background. However, in the context of community rights over resources, there is also a challenge to ensure genuine rights for poor, low caste, Dalit, women, and indigenous people. In community resource management, it is very important to reduce social disparity and isolation, and to assure community rights. To boost the issue of community rights in REDD+, civil society has declared their stand with 21 points (see Annex 2).

CONCLUSION

Nepalese society is composed of diverse caste, societal, cultural, and religious communities. They all have their own historical context, features and identity. Through this diversity, however, has come great disparity across classes. Until such disparity is reduced or eradicated entirely, the development and change of Nepalese society is doubtful. We are in a crucial stage of forming a new Nepal. We can find the appropriate solution or opportunity for development for isolated communities, marginalized communities, the deprived, and women. Similarly, the appropriate method of allocating revenue, providing rights and access over resources, and redefining and reevaluating state policy so that they can have access to the administration and political leaders is essential. Therefore, while searching

for these options the existing disparity and inequality should be discussed properly. According to related statistics, individuals placed in the higher class of the caste hierarchy system are relatively stronger in political, administrative, economic and educational areas than those of the lower caste. Abolishing the historical process of caste and religion disparity is essential to formulate the policy for the benefit of the secluded, isolated and weaker communities.

REFERENCE MATERIALS

Allen, N.J. (1997): *Hinduisation: The Experiences of the Thulung Rai.* In: Nationalism and Ethnicity in a Hindu Kingdom: The Politics of Culture in Contemporary Nepal (ed. Gelner et al). Harwood Academic Publisher.

Bhattachan, Khrishna B. (2008): *Minorities and Indigenous Peoples of Nepal*. NCARD, Katmandu.

Bista, Dor Bahadur (1967): People of Nepal. Ratna Pustak Bhandar, Kathmandu, Nepal.

Bista, Bor Bahadur (1982): *The Process of Nepalization: Anthropological and Linguistic Studies of the Gandaki Area in Nepal*. Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies.

Bista, Dor Bahadur (1989): *The Structure of Nepali Society*. In: K P Malla (ed), Nepal: Perspectives on Community and Change. Kathmandu, CNAS.

Bista, Dor Bahadur (1991): *Fatalism and Development*. Calcutta.

CBD (1993): Conventions on Biological Diversity.

CBS (2002): *Population Census 2001*. National Report. Kathmandu.

CBS (2003): *Population Monograph of Nepal* (Volume I and II). Kathmandu.

Civil Society Perspectives on REDD+ (2010).

Convention on Biological Diversity (1992).

Eriksen, Thomas Hylland (1993): *Ethnicity and Nationalism: Anthropological Perspectives*. Pluto Press, London.

Gelner, David N. (1997): *Ethnicity and Nationalism in the World's Only Hindu State*. In: Nationalism and Ethnicity in a Hindu Kingdom: The Politics of Culture in Contemporary Nepal (ed. Gelner et al). Harwood Academic Publisher.

Gurung, Harka (2007): *From Exclusion to Inclusion: Socio-political Agenda for Nepal*. Social Inclusion Research Fund, Bakhundole, Lalitpur, Kathmandu.

Gurung, Harka (2009): Social Inclusion Research Fund, Bakhundole, Lalitpur, Kathmandu.

Hofer, Andras (1979): *The Caste Hierarchy and the State in Nepal*. Himal Books, Kathmandu.

International Labour Organization (ILO), 1989: *A manual: ILO convention on indigenous and tribal peoples.* London: ILO.

Malla, K. Sundar (2008): Marlan, Francesca (2009): *Indigeneity: Global and Local*. In: Current Anthropology (Vol. 50:30), pp. 303-333.

NEFIN (2010): Position Paper of Nepal Federation of Indigenous Nationalities (NEFIN) on Climate Change and Reducing Emission From Deforestation and Degradation (REDD+). NEFIN, Kathmandu.

NESAC (1998): *Human Development Report*. New York, Oxford University Press.

Neupane, Govinda (2002): Development Study Centre, Kathmandu.

Rai, Jailab Kr. (2009): *Caste System, Dalits and their Marginalization in Nepal.* In: Participation: A Nepalese Journal of Participatory Development, 2008, Year-10, No. 10, pp. 25-28.

Rai, Jailab Kr. (2009): *Ethnicity and Ethnic Identity: An Anthropological Reflection of Thulung Community People*. In: SUMNIMA AND PARUHANG, Vol. 1 (1), pp 85.

Rai, Jailab Kr. (2009): *Socio-Cultural Subjectivities of Landlessness in Nepal: A Case Study of Sarki People in Nepal.* Occassional Papers of Sociology and Anthropology, Vol:11, pp. 10-38.

Tamang, Parasuram (2008): Tamang, Parasuram (2009): UNDP (2004): *Human Development Report 2004*. UNDP, Oxford University Press.

Annex - 1:

Position paper of Nepal Federation of Indigenous Nationalities (NEFIN) on climate change and Reducing Emission from Forest Deforestation and Degradation (REDD+)

Paying attention to the ratification of Indigenous Tribal Peoples Convention (ILO C 169) and adoption of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) by the government of Nepal,

Realizing the Anchorage Declaration of the Indigenous Peoples Global Summit on Climate Change held in Anchorage Alaska in the United States of America,

Considering the fact that we the indigenous peoples are the communities who have direct symbiotic relations with nature,

Keeping in mind the demands and claims of indigenous peoples' rights to self-determination, prerogative rights over natural resources and ownership and control over their lands that resulted from indigenous peoples' continuous struggle from the past,

Nepal Federation of Indigenous Nationalities (NEFIN) declares the following points as a minimal concept of indigenous peoples of Nepal with regard to Climate Change and REDD+:

1. While formulating any policies, plans and programs related to climate change and REDD+, the state should provide constitutional, legal and administrative guarantee as to the ownership and control of indigenous peoples over their water, lands, forests and mineral resources that have been ensured by the ILO C. 169 and UNDRIP.

2. The state should respect and recognize indigenous peoples' rights to self-determination while formulating any policies and implementing any plans and programs related to the climate change and REDD+.

3. The state should ensure indigenous peoples rights of Free, Prior, and Informed Consent (FPIC) while formulating and implementing any policies, plans and programs related to the climate change and REDD+.

4. The state should ensure constitutional and legal recognition to symbiotic relations of indigenous peoples with their ancestral land, forest, water and other natural resources and their traditional knowledge, skills, customs, and customary legal systems while formulating any policies, plans, and programs related to climate change and REDD+ and implementing, monitoring and evaluating them.

5. The state should ascertain the full and effective participation of indigenous peoples while formulating any policies, plans and programs and implementing, monitoring and evaluating them.

6. The state should recognize the traditional forest management systems of indigenous peoples while making any policies, plans, and programs with an objective to control deforestation and degradation as well as to protect and manage forest resources.

7. Since REDD+ is related to the carbon trading for the mitigation and adaptation of the climate change, rights over any kinds of decision either to agree or disagree over the carbon trading of the forest should go to the indigenous peoples.

8. The state should protect and promote traditional knowledge and skills based on the technology of indigenous peoples by ensuring their patent rights on it while formulating, implementing, monitoring and evaluating any policies, plans and programs related to climate change and REDD+.

9. Since indigenous peoples are the first victims of the climate change impacting their traditional sustainable livelihoods and health care system, the state should provide special arrangement to address the impacts as per their traditions.

10. The state should make special measures to control the negative effects of migration due to climate change and REDD+ on identity and ways of life of indigenous peoples.

11. The state should ensure the effective participation of indigenous women and children in the formulation of any policies, plans and programs and their implementation, monitoring and evaluation related to climate change and REDD+ by recognizing that women and children are affected the most.

12. The state should immediately adopt special measures to protect the peoples of Mountains, Hills and Terai from flooding, landslides and drought caused by the climate change.

13. The state should identify vulnerable indigenous communities and declare them as "the first vulnerable communities" caused by climate change. In order to minimize the effects of climate change, the state should formulate special alternative programs and implement to address them.

14. Including Mount Everest, the highest peak in the world, the range of mountains is in the state of melting, lakes are bursting, and rivers are drying due to the effect of climate change. We the Indigenous Peoples of Nepal would like to draw the attention of the international communities to the fact that those most affected by the impacts of these disasters are the indigenous peoples in Nepal.

Annex – 2: Civil societies position paper

Civil Society Alliance's recommendations on REDD+ in Nepal (translated from the original in Nepali)

Civil society organizations (CSOs) in Nepal have been raising issues surrounding REDD+ with relevant authorities. Realizing that free, active, informed, and meaningful involvement of CSOs can enhance the governance and institutional arrangements in relation to REDD+ in Nepal and contribute to the development of a national REDD+ strategy, an alliance of CSOs (representing indigenous communities, Dalits, women, Madhesi people, and community forest users) prepared a declaration on climate change and REDD+. The declaration was made on 25 May 2010 at an interaction program organized by the Federation of Community Forestry Users Nepal (FECOFUN). It sets minimum standards for planning initiatives, implementation, and monitoring and evaluation, and contains the following points.

Civil Society Alliance's recommendations on REDD+

▪ Nepal should be proactive in initiating climate change and REDD+ initiatives, not simply reactive and waiting for donor support. Such initiatives should be formulated through vigorous interactions and consultations with rights-holders and stakeholders to build their capacity and raise awareness.

▪ Any policies or mechanisms related to climate change and REDD+, including REDD+ benefit sharing mechanisms, should be fair and equitable.

▪ The State should not jeopardize the customary rights of indigenous people and local communities over land, water, and forest resources while initiating any policies, plans, or programs related to climate change and REDD+.

▪ The State should ensure that climate change and REDD+ related initiatives and activities complement the objectives of the Millennium Development Goals (MDGs), without superseding the goal of poverty reduction as the overarching goal of the MDGs. Civil society organizations should be watchful in this regard.

▪ REDD+ and climate change related activities should not be implemented unless they ensure the protection and security of the livelihoods of poor and vulnerable communities. A major priority of REDD+ and climate change programs, initiatives, and activities should be to improve governance and sustainable development.

▪ Piloting and preparatory activities on REDD+ and climate change should be unbiased and implemented in all regions. Such activities should help to integrate fragmented rural communities, particularly farmers and herders.

▪ Climate change mitigation and adaptation should be conducted through a single state mechanism; if more than one mechanism exists, coordination and complimentarity between mechanisms should be ensured.

▪ Climate change policies should recognize that the contribution of forests goes beyond mitigation. It is strongly urged that a REDD+ strategy be developed that

embraces the non-carbon benefits of forest ecosystems, including biodiversity, livelihood adaptation, ecotourism, and soil and watershed conservation. Benefit sharing mechanisms should be formulated in consultation with diverse stakeholders in order to ensure that benefits reach local communities.

- REDD+ initiatives should maximize the existing rights of local communities over forest resource management. They should further reinforce and ensure the carbon rights of local communities over all the different carbon pools.

- REDD+ initiatives should help to define and strengthen the legal tenure of indigenous people and local communities over forest resources.

- The State should recognize community rights in the constitution, as much as individual and state rights.

- The REDD+ strategy should be based on principles of decentralization. The State should ensure the full and effective participation of indigenous peoples, local communities, women, dalits, and Madhesi people when formulating any policies, plans, and programs, including monitoring and evaluation.

- Technical terms related to REDD+ and monitoring, reporting, and verification should be simple, consistent, and easy for indigenous people and local communities to understand.

- The State should ensure that monitoring, reporting, and verification takes into account the issue of governance, and social and environmental aspects, in addition to carbon.

- The State and other relevant organizations should develop REDD+ and climate change related publications in the languages of indigenous people and local communities.

- The national REDD+ strategy should incorporate carbon financing of private forests and agro forestry in addition to community and state managed forests.

- While formulating any policies, plans, and programs related to REDD+ and climate change, the State should respect international declarations and agreements related to the rights of indigenous peoples and local communities. The State should provide constitutional and legislative guarantees of ownership and control by indigenous peoples and local communities over forests, land, and water, as stipulated by ILO 169 and UN Declaration on the Rights of Indigenous Peoples (UNDRIP).

- The state should respect indigenous peoples' and local communities' right to free, prior, and informed consent (FPIC) when formulating and implementing programs related to climate change and REDD+.

- The state should cultivate a culture of respect and recognize the issues, concerns, and voices of right-holders in all climate change and REDD+ activities and programs.

16 REDD+ benefit sharing

INTRODUCTION

The impact of climate change and its long-term effect is an issue of discussion at different levels globally. REDD+ is one of the important mechanisms to reduce climate change. The successful implementation of REDD+ has advantages for forests and the environment.

The objective of this study material is to assist facilitators to understand how the benefit obtained from the implementation of REDD+ is going to be distributed and what should be the benefit sharing mechanisms of REDD+. It also includes the REDD+ benefit sharing processes of different countries and the lessons to be learned from them for Nepal.

REDD+ BENEFIT SHARING

To make REDD+ a success, it is important to consider how payments will be received and distributed among various stakeholders, as well as what the institutional structures will look like. It is difficult to stop deforestation until people realize that forest conservation has more advantages than forest destruction. To realize this fact, the benefit from REDD+ must reach each household of the community that is conserving the forest.

EXPERIENCE AND LEARNING

The experience of different countries in benefit sharing mechanisms is discussed below.

1. International experience

REDD+ experience in Indonesia

Indonesia is the first country to pass a national policy on REDD+. Its national policy has presented a complete model on REDD+ benefit sharing. From the experience of Indonesia, it can be learned that the quality of a country's REDD+ policy plays a critical role in achieving stability and control in the process. The central government motivates the states, districts and local administration to bear responsibility for REDD+ fund management. The Ministry of Forestry has full responsibility for the REDD+ associated work and a climate change working group responsible for policy-making related to REDD+ has been established under the Ministry of Forestry. In this management system, proposals including

implementation plans are submitted to the Ministry of Forestry. The proposal is reviewed by the REDD+ commission and after the approval of the Forest Minister, it is implemented.

The Ministry of Forestry has prepared various models of REDD+ benefit sharing. The proportion of benefit allocated for different stakeholders is determined by those who hold the forest management ownership. Therefore, all type of forests do not receive the benefit equally. Table 1 shows the model of REDD+ benefit sharing.

Table 1: Mechanism of REDD+ benefit sharing

S.N	Forest type	Ratio of benefit sharing		
		Government	Community	Developer
1.	Traditional/ indigenous forest	10%	70%	30%
2.	Community forest	20%	50%	30%
3.	Conserved forest	50%	20%	30%

10-50% of benefit goes to government, 20-70% benefit goes to local community and 20-60% to the developer according to the forest management system.

REDD+ experience in Brazil

In December 2008, Brazilian President Luiz Inacio Lula da Silva announced Brazil's commitment to reduce Amazon deforestation by 80% (below the 1996-2006 average) in the coming decade. Since deforestation accounts for approximately 70% of Brazil's national emissions, this declaration in effect made Brazil the first major developing country to commit to national emissions reductions. Brazil was supported by the launch of the Amazon Fund and the Government of Norway's promise of $1 billion over the next decade to meet the target. At the same time, Brazil made the first national level REDD+ program. While the Amazon Fund is still a work in progress, discussions among state and federal governments, civil society, intellectuals and scientists on the fund's design are being held.

In Brazil, deforestation increased from 18,000 sq. km in 2001 to 27,000 sq. km in 2004. To reduce such accelerating deforestation in the Amazon, a work plan was made in the year 2003 that received high level political support and commitment decreased from 27,000 sq. km to 11,200 sq. km in 2007 after the implementation of the work plan. From this experience, we can learn how different institutional structures can encourage greater political commitment to avoiding deforestation. The Amazon Fund is not yet finalized, but, dialogue among the governments of different states is ongoing to address the major issues for REDD+ design.

The Amazon Institute for Environmental Research (IPAM) has recently come up with a proposal on the key issues for the allocation of benefits from REDD+ between the highly deforested and least deforested area. The Stock Flow

concept shows how the Benefit Sharing Mechanism functions. According to it, the national target for deforestation reduction is distributed in every state, and those states have to reduce the deforestation to meet the national target. From this mechanism, half of the carbon will be sold to other countries at the rate of $10 per ton. If implemented properly, 80 million tons of carbon dioxide will be sequestered, which will mean Brazil receives USD$383 million over 3 years (2006-2008).

The benefit thus generated is allocated within the states of the Amazon. The allocation is done on the basis of three major aspects.

1. Alternate benefits that will be acquired after a decline in deforestation.
2. Investment for carbon sequestration (Estimated on the basis of investment for management of Amazon conservation area).
3. Premium given to the state for achieving the carbon emission goal.

According to this concept, the biggest state, Amazon, gets 25%, the second biggest state, Mato Groso, gets 23% of the benefit, and the remaining is distributed to the other states. If Brazil succeeds in implementing this plan, by 2020 it will have reduced its emissions by 2 gigatons of carbon dioxide, as and will be trading carbon credits with other nations.

Lessons from international experience

Examining Brazil and Indonesia's practices of REDD+ implementation and benefit sharing has provided two key lessons.

1. Brazil possesses the political commitment necessary for successful REDD+ implementation, as evidenced by the President's leadership in REDD+ program formulation. Though there is interest within the government for REDD+ implementation, the income from REDD+ and the investment for REDD+ is not reserved by a national or international bank, instead it is kept in the Amazon Fund and used for social development.

2. In Indonesia, the national level policy for REDD+ has been approved. The government agencies have a vital role in REDD+ implementation, investment in REDD+ and in sharing of benefits. The climate change working group formed under the Ministry of Forestry has the main responsibility for REDD+ related work. The draft model of REDD+ benefit sharing has been prepared by the working group under the Ministry of Forestry. Indonesia's experience can help demonstrate how benefits can be shared according to different forest management practices.

2. The existing practice of benefit sharing in Nepal

Though there is no mechanism for benefit sharing under REDD+ in Nepal, there is a strategic management plan for the distribution of earnings among local communities in the buffer zone and in the field of hydroelectricity. It's better to be familiar with the popular distribution procedures rather than arguing and adhering to any one of the procedures. There is legal provision that 30-50% of the income from national parks and conservation areas should go to the buffer zone. The income should be expended in the following areas.

- Conservation – 30%
- Social development – 30%
- Income generation activities – 20%
- Conservation education – 10%, and
- Administrative expenses – 10%

Similarly, the region that is affected by the hydroelectricity receives a certain percentage of electricity credit from the electricity production company. To date, it has been standard practice to distribute money to the local communities through the district development committee. But, according to Khatri (2009), the money allocated to the local communities through DDC was used in other sectors. Moreover, due to administrative delay, it was noticed that the work was very slow and local sovereignty and environmental development was neglected. These experiences show that it's better to take the REDD+ benefit directly to the local level.

Possible REDD+ benefit distribution in Nepal

The implementation of REDD+ and the extent of its worth for developing nations is still ambiguous, even at the international level. How the investment in REDD+ is provided to developing nations as an issue for discussion. Developing countries are implementing pilot programs to explore the best mechanism for REDD+ benefit sharing. Such exercises will help identify and develop a model that distributes benefits equitably at the community level. REDD+ is not yet implemented in Nepal, and thus, no policy for benefit sharing under REDD+. Some benefit sharing processes are proposed on the basis of some international experiences and discussion between stakeholders' institutions and professionals related to the REDD+ process.

There are other options for REDD+ benefit sharing mechanism proposed on the basis of internationally practiced REDD+ benefit sharing processes and benefit sharing at the buffer zones and hydroelectricity in Nepal. The figure below shows 3 possible options; however, there could be more alternatives that could be identified in future.
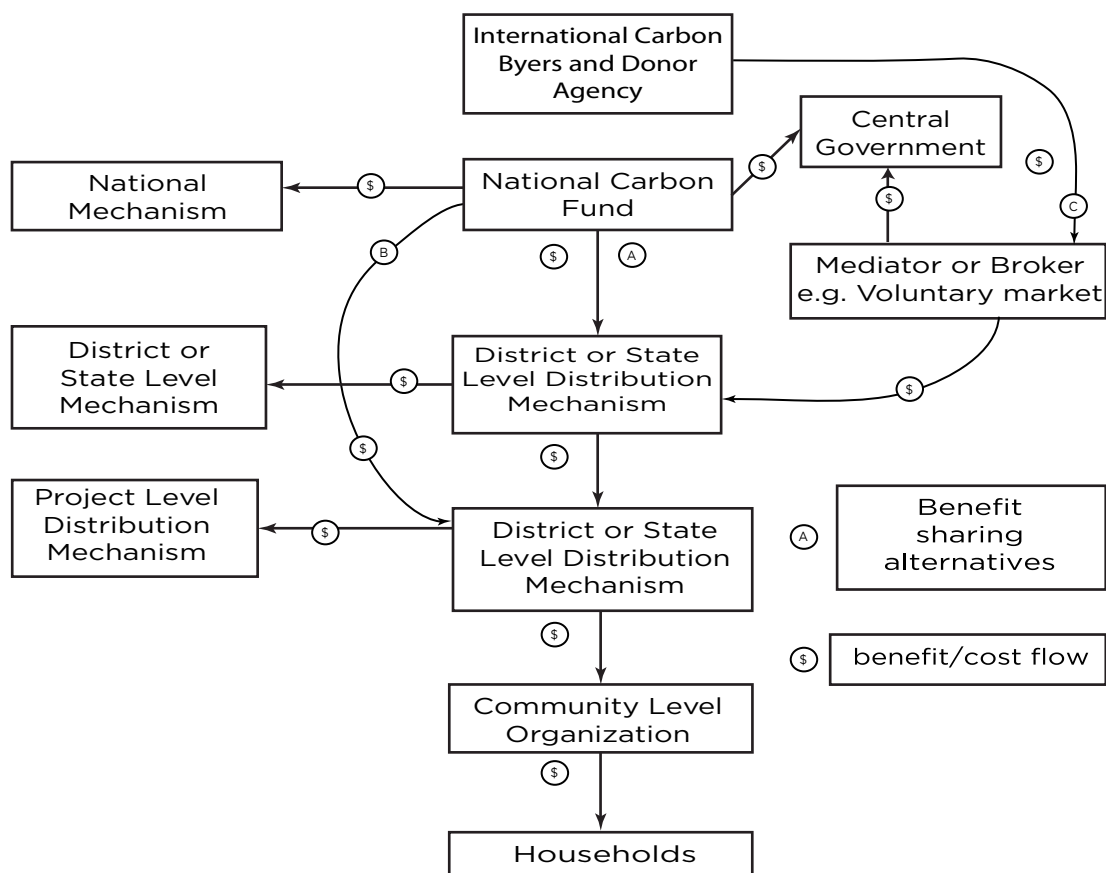
Diagram 1: Possible option for benefit sharing in Nepal

Option: 1

In this option, funds for REDD+ will be deposited in a national carbon trust regardless of which mechanism it came from, whether a market based mechanism or government mechanism. After formulation of the payment process, benefits from REDD+ are distributed among communities at the household level. The benefit is transferred from the national carbon trust to state or district level, to program level, and finally to the community level.

Option: 2

In this option, money is deposited into a national carbon trust fund and is directly distributed to the community through the project without taking it to state or district level.

Option: 3

On behalf of the developer, the international carbon buyer or donor is directly involved at the program level and disburses funds on a performance basis.

In the context of REDD+ implementation in Nepal, the advantages and disadvantages of these three alternatives, the benefit for the local people and other various aspects has to be discussed thoroughly. The formation of a benefit distribution model, working procedure, implementing form and strategy is crucial. The community benefit should be guaranteed in the implementation of REDD+. Otherwise the sustainability of REDD+ cannot be ensured.

In the above context, it is essential for dialogue or discussion at different levels to address the following issues in the context of REDD+ implementation:

1. To reduce carbon emissions, REDD+ has been shown to be the simplest and least expensive among different options. Investment in REDD+ not only decreases carbon emissions, but also enhances the direct and indirect benefits from forest conservation. Given that developing countries cannot provide funds for REDD+ on their own, developed countries must offer this financial assistance -- but the mechanism for funding has not yet been agreed. While REDD+ has not yet been implemented in Nepal, the readiness process has been completed and Nepal plans to be ready for REDD+ by 2012. Before then, Nepal needs to develop appropriate institutional structures to address the issue of REDD+ benefit sharing regardless of the funding mechanism determined by the international community. These decisions must be made with sufficient discussion among different stakeholders in each type of forest management system.

2. The discussion from now on has to be focused on the proportion of the benefits from REDD+ distributed from the government fund to different central government, state government, and local governments. As in Indonesia, we should decide on the proportion of income distribution among central, districts and state governments and their role and responsibility.

3. In the case of Indonesia, there is a certain amount allocated for the developer while distributing the income from REDD+. Is there a need for a developer in Nepal? If yes, who plays the part of developer and what is its role and responsibility? This matter must also be decided.

4. Learning from the experience of the benefit sharing practiced in the buffer zone and places affected by hydroelectricity, the effective mechanism for REDD+ benefit distribution has to be discussed at the National level including all the stakeholders.

5. As discussed in the earlier session, if equitable sharing of REDD+ benefit is not ensured among the economic, social and racial groups, then it may exacerbate disparities that have existed for hundreds of years. Therefore, it is necessary to reduce the existing disparity of Nepal and begin assignments for equitable benefit sharing.

INVESTMENT IN REDD+ IN NEPAL AND BENEFIT SHARING UNCERTAINTY

We have already discussed the advantages and disadvantages of the fund based mechanism and market-based mechanism. The fund based mechanism is effective for REDD+ strategic planning, policy development for land tenure, forest conservation, investment in social work, and monitoring carbon leakage at the national level. The market-based mechanism, however, is more effective for delivering social, environmental, and economic benefits to local and indigenous people, for ensuring transparency and responsibility, for the sustainable management of forests, and for

securitization of benefit distribution at the project level. However, as the international discourse continues to move forward, Nepal will be able to decide about their approach of investment in REDD+ accordingly.

This approach, however, should build in social and environmental sustainability from the conceptual stage itself in order to effectively implement the policy, regulate deforestation reduction, and share the benefits from REDD+ in a fair and transparent manner. At this stage, a lack of clarity about how the income from REDD+ will be distributed among the key stakeholders and rights holders adds to the uncertainty about investment in REDD+. Moreover, there is a concern that without the formation of a transparent and credible model for benefit distribution and without adequate political support, REDD+ could enhance corruption and create conflicts among the key stakeholders.

WAY FORWARD

While the various debates and discussion around REDD+ demonstrate there are clear challenges associated with its implementation, the hope is that REDD+ will ultimately provide important advantages and benefits for Nepal. The discussions support raising awareness among people so that an effective mechanism can be developed. The related institutions should focus on investing the income from REDD+ into forest management activities and implementing it at the local community level. Therefore, while deciding strategy for REDD+ implementation and forming the model for REDD+ benefit sharing, key stakeholders need to initiate a discussion about a future REDD+ strategy. These discussions would help allocate responsibilities and roles to different institutions. Similarly, to solve issues like the distribution of benefits, and what percentage should come through a government fund and where the money should go, multi-stakeholder discussion is crucial. In this way, REDD+ can be implemented with widespread buy-in and improved chances for its sustainability.

Module

6

REDD+ IMPLEMENTATION PROCESS IN NEPAL

Introduction

National level REDD+ preparation process in Nepal, ongoing REDD+ piloting projects, methods to meet REDD+ requirements and necessary institutional and legal framework preparation are discussed in this module. This module will focus on how we can meet REDD+ requirements by contextualizing Nepal's situation and therefore is linked to module 3, which discussed the requirements, for implementation of REDD+ in Nepal.

Objective

The overall objectives of this module are to develop an understanding on technical, institutional and legal arrangements for meeting the REDD+ requirements in the local and national context.

Sessions

This module has following major sessions:

Session 17: National-level initiatives on REDD+ process

Session 18: Necessary skills and infrastructure for REDD+ implementation

Session 19: Policy, act and institutional structures related to REDD+

Session 20: Major issues and challenges raised in REDD+

17 National level initiatives on REDD+ process

Time:

1 hour
and 30 minutes

Methods:

Brainstorming,
Interactive presentation
and discussion.

Materials:

1. Brown paper, marker
   pen, masking tape,
   meta-cards.
2. Multimedia
   projector and laptop
   computer.

Readings:

1. Reading 17:
   REDD+ in Nepal-
   preparation, process
   and organization.
2. Collection of pilot
   projects in Nepal
   including flip chart,
   pamphlets.

INTRODUCTION

Once the various requirements and issues around REDD+ have been discussed, it is necessary to learn about the initiatives taken by Nepal with respect to REDD+. This session will cover the established institutional structures and ongoing pilot projects for REDD+ in Nepal.

OBJECTIVES

At the end of this session, participants will:

- Understand and explain the existing legal and institutional structures of REDD+ implementation.
- Understand the status of REDD+ readiness of Nepal.
- Be aware of the ongoing pilot initiatives for REDD+ and their objectives.

PREPARATION

- Presentation on institutional structure of REDD+, salient features of REDD+ readiness preparation and pilot projects in Nepal.
- Collect publication of various pilot projects for REDD+ for sharing with participants.

SESSION ACTIVITIES

- Introduce session's objectives, content, methods and time required.
- Assess the understanding of the participants about ongoing and accomplished initiatives for REDD+ in Nepal and record the responses.
- Explain the institutional structure for REDD+, as well as the key focus of the REDD+ readiness preparation proposal.
- With the help of participants, prepare an updated list of the pilot projects under implementation in Nepal.

- Before concluding, summarize the discussion/presentation and encourage participants to raise questions.

EVALUATION

Evaluate the session asking the following questions:

- Who are the members in the REDD+ working groups?
- What is the provision proposed under RPP for fund transaction?
- What has been accomplished through the pilot projects related to REDD+?

CONCLUSION

As yet, the international community has not reached an understanding on REDD+ implementation structures. Three tier management structures have been established in Nepal for REDD+ implementation: a high level coordination and monitoring body, a national level REDD+ working group, and REDD+ Forestry and Climate Change Cell under the ministry of Forest and Soil Conservation (MoFSC). Similarly, in the coordination and leadership of these national structures, various pilot projects and initiatives are being implemented. The successful implementation of REDD+ also depends on the effectiveness of these pilot projects.

FORWARD LINKAGE

After having developed an understanding on the national level REDD+ initiatives and the institutional and policy level effort, the next session will focus on how these policies can be implemented.

18 Necessary skills and infrastructure for REDD+ implementation

Time:
1 hour
and 30 minutes

Methods:
Review of previous session, brainstorming, presentation, plenary discussion, group work.

Materials:
1. Brown sheets, white board, marker pen, masking tape.
2. Multimedia and a lap top computer.

Reading:
1. Reading 18: REDD+ implementation-required capacities and infrastructure.

INTRODUCTION

In the REDD+ implementation process, technical and environmental aspects are evaluated. Monitoring of these aspects is not only a requirement for REDD+ but also for the sustainable management of forests. The necessary requirements and conditions have been discussed in the previous sessions. In this session, required skills and infrastructure to meet those requirements (legal, social, technical, and financial) will be discussed.

OBJECTIVES

At the end of this session, participants will be able to:

▪ Develop an understanding of the requirements related to legal, social, technical, and financial aspects of REDD+ process.
▪ Be aware of necessary skills and knowledge to address those requirements.
▪ Appreciate the importance of capacity building programs and how they should be implemented.
▪ Suggest additional focus to further strengthen capacity of the stakeholders for REDD+ implementation.

PREPARATION

▪ Have a clear understanding of the difference between social, legal, technical, and financial aspects discussed in Module 3 and be well-versed in the objectives of this session.
▪ Prepare a presentation on required skills and structures of various aspects of REDD+ implementation using the reading materials.
▪ Prepare a checklist for group work and identify the group structure.

SESSION ACTIVITIES

- Explain the objectives, content, methodology and time of the session.
- Revisit previous sessions with the participants about requirements related to social, legal, technical, and financial aspects of REDD+.
- Explain the major requirements and capacity needs under each aspect.
- Divide the participants into three groups and give them a task to identify the stakeholders (institutions and individual) to be involved in each of the above listed requirements for REDD+, their existing capacities, and further capacity requirements. Each group may be asked to synthesize their discussion in a matrix form.
- Bring the participants back together and facilitate a discussion among the participants on group presentation.
- Review and list out the existing capacity building programs and their target group. Discuss the projects' scope to meet the demand and list out capacity needs in future based on the group exercise.
- Before concluding, ask one participant to summarize what has been discussed in the session. Ask participants to raise questions for clarification.

EVALUATION

Evaluate the session by asking following questions to the participants:

- What are the major legal, economic, and technical aspects that should be addressed in REDD+?
- What skills are necessary for the implementation of those aspects?

CONCLUSION

The legal, social, technical and economic elements must be in place to ensure successful REDD+ implementation. These requirements are related to forest resource assessments, carbon measurement and sustainable management of forest resources. Involvement of various stakeholders (individual, community and institutions) is necessary for the fulfillment of these conditions. For the effective implementation of REDD+, institutional capacity building, infrastructure development and skilled human resources are needed. It is necessary to analyze the existing resources (human and financial) and the possibilities to meet REDD+ requirements. Accordingly, capacity building plans will have to be developed.

FORWARD LINKAGE

In this session, the required skills and types of infrastructure are discussed. The next session will cover the existing rules and regulations related to forests and REDD+.

19 Policy, act and institutional structures related to REDD+

Time:
1 hour and 30 minutes

Methods:
Brain storming, presentation of timeline and major achievements and discussions.

Materials:
1. Meta card, brown paper, marker pen and masking tape.
2. Multimedia and a lap top computer.

Reading:
1. Reading 19: Existing REDD+ related policies and institutional frameworks.

INTRODUCTION

"For effective REDD+ implementation, existing policies, laws, and corresponding institutional structures should be analyzed during the readiness phase." This session focuses on this in the context of implementing REDD+.

OBJECTIVES

At the end of this session, participants will be able to:

- Understand characteristics of policy and institutional structure that are relevant to the community and environmental context of Nepal.
- Learn about existing policies and need for additional ones to address deforestation and forest degradation.

PREPARATION

- Presentation based on the reading materials on existing policy and institutional structure for REDD+ implementation.
- Be clear on the snow ball exercise.

SESSION ACTIVITIES

- Explain the objectives, content, methodology and time of the session.
- List the characteristics of good policy and plans for using snow ball method.
- Ask participants to recall the previous session and prepare a list of policy, rules and regulations required for REDD+ in plenary based on the discussions in previous sessions.
- Present and review the existing policies and identify gaps in the same from the point of view of REDD+ implementation.

- Summarize the discussions of the session and encourage participants to raise questions and clarify them.

EVALUATION

Evaluate the session asking the following questions:

- What are at least two major characteristics of a good policy?
- What are at least two laws that support reducing deforestation and forest degradation?

CONCLUSION

Analyzing and learning from existing policies and rules could help improve the effectiveness of REDD+ implementation. At present there is not a single policy that is formulated exclusively for REDD+. However, there are various provisions to control deforestation and forest degradation in existing policies and laws. Existing forestry sector policies, strategies, and plans, such as those related to watersheds, wetlands, water resources, irrigation, and forest sector agriculture are formally and informally related to REDD. If REDD+ is to be implemented effectively, the existing policies, strategies and plans of Nepal should be reviewed and revised according to emerging requirements.

FORWARD LINKAGE

After the discussion on the policy and legal provision of REDD+, the major issues and challenges for effective implementation of REDD+ in Nepal will be discussed in the next session.

20 Major issues and challenges raised in REDD+

Time:
1 hour
and 30 minutes

Methods:
Brainstorming, presentation and discussion.

Materials:
1. Brown paper, white board, green board, marker pen, masking tape, meta-cards.
2. Multimedia and a lap top computer.

Reading:
1. Reading 20: Issues and challenges in REDD+ implementation.

INTRODUCTION

A number of challenges and issues remain that must be addressed before REDD+ can be fully implemented. These issues have been raised in different ways at national, district, and community levels, and discussions at each level should be taken into account when making decisions around REDD+. If the REDD+ requirements are to be met in Nepal, opportunity costs should be taken into account and good governance for sustainable forest management must be assured. These and other challenges will be addressed in this session.

OBJECTIVES

At the end of this session, participants will:

- Learn about the major issues of REDD+ implementation.
- Provide feedback on REDD+ architect for its effective implementation.

PREPARATION

- A presentation on major issues for REDD+.
- Study the available literature to update the current issues of REDD+.

SESSION ACTIVITIES

- Explain the objectives, methodology, and time of the session.
- Distribute meta-cards to participants and ask them to write down issues and challenges based on the discussion in previous sessions.
- Collect meta-cards and place them in a green board/ whiteboard.
- Develop a final list and summarize them.
- Discuss the presentation, linking with the issues identified by the participants.

- Through a plenary discussion, invite suggestions from the participants to address the identified issues.
- The issues and the suggestions from the participants will be very important to provide feedback to policy level. Conclude the session informing participants that their suggestions will be provided to relevant institutions.

EVALUATION

Evaluate the session asking the following questions:

- What are the existing and potential challenges of REDD+ implementation?
- What should be done to address these challenges?

CONCLUSION

Even though there has not yet been a definite architecture developed for REDD+ implementation, several issues are raised in discussion about REDD+. Its implementation is very challenging in a country like Nepal where there is economic, social and geographical diversity and political instability. The major issues raised in Nepal include: what will be the REDD+ implementation and benefit-sharing process; how can inclusiveness of forest dependent communities be ensured; who owns the forests; how should carbon be estimated; who prepares reports and provides verification; how to manage and build capacity for the necessary human resources for marketing and technical measurements; and how to make REDD+ effective at the community level. Only through active collaboration and meaningful discussions can these issues and challenges be addressed.

FORWARD LINKAGE

From this session, the discussion on REDD+ implementation concludes. Wrap up the session informing them about the synthesis of major discussions and lessons learned.

READING MATERIALS

17 REDD+ in Nepal - preparation, process, and organization

Organizational structure

Like other developing countries, Nepal is also a country that has potential for minimizing impacts of climate change through REDD+ implementation. For this, some policy and organizational set up has been initiated. The government of Nepal has declared the MoFSC as the focal ministry for REDD+. The MoFSC had established a three tier organizational mechanism on 26 January, 2009. This mechanism is shown in the figure below:

Figure 1: Institutional structure of REDD+ governance.
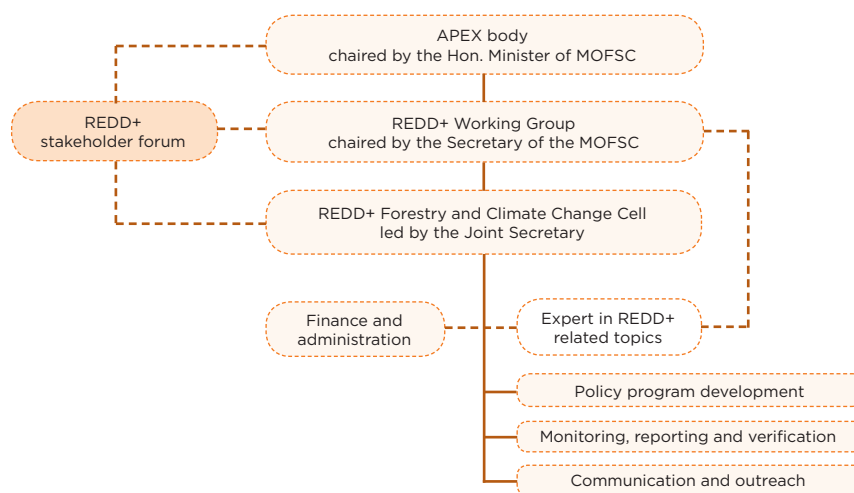
1. High level coordination and monitoring committee (Apex body)

Objective: The main objective of the body is multi-sectoral coordination and cooperation for planning and implementation of REDD+ activities at the highest level.

Function: It endorses plans related to REDD+: and Climate Change. In addition, it provides advice, oversight, and monitoring for the planning process and the implementation of activities on REDD+.

Leadership: It is chaired by the Minister, MoFSC, who is responsible for the overall coordination of REDD+ activities.

Members: At present, there are twelve members in this committee, which are as follow:

1. Chairperson: Minister, MoFSC
2. Representative member: National Planning Commission

3. Representative member: Ministry of Environment
4. Representative member: Ministry of Science and Technology
5. Representative member: Ministry of Finance
6. Representative member: Ministry of Tourism and Civil Aviation
7. Representative member: Ministry of Water Resources
8. Representative member: Ministry of Energy
9. Representative member: Ministry of Local Development
10. Representative member: Ministry of Physical Planning and Labor
11. Representative member: Ministry of Land Reform and Management
12. Representative member: Ministry of Industry and Supply

In addition to this, each ministry and national planning commission nominates three additional representatives from each of the member ministries, and one each from the private sector, civil society, and government, totaling to 48 members.

2. **REDD+ Working Group (second level)**

Objective: Provide technical and other support for effective implementation of REDD+.

Function: This group is playing an active role in RPP preparation by providing technical advice. The main role of this group is to support RPP implementation.

Leadership: This REDD+ Working Group is chaired by the secretary of the MoFSC.

Members: This working group consists of nine members.
1. Chairperson: Secretary, MoFSC
2. Representative member: Department of Forests
3. Representative member: Department of Forest Research and Survey
4. Representative member: Federations of Community Forest Users of Nepal (FECOFUN)
5. Representative member: National Indigenous People Federation, Nepal (NEFIN)
6. Representative member: Forest Action, Nepal
7. Representative member: Netherland Development Agency (SNV)- donor's community
8. Representative member: Livelihoods Forestry Program (LFP)- From Program
9. Member Secretary: Chief, REDD+ Forestry and Climate Change Cell

3. **REDD+ Cell (third level)**

REDD+: Forestry and Climate Change is a third level structure under the ministry of Forests and Soil Conservation for formulation and implementation of government policy and programs under REDD+.

Objective: Implementation of REDD+ and climate change related programs.

Function: Implement REDD+ and climate change related programs following government policy.

Leadership: Joint secretary of the MoFSC leads the cell.

There are three branches under this cell:

The Policy and Program Development Section: This section is responsible for developing REDD+ related forestry policies and monitoring their implementation. This section will design programs related to REDD+ and monitor the results, including the development of capacity-building programs and activities. This section also provides technical support to the MoFSC on the negotiation process, carbon markets, and other forestry and climate change related issues.

The Monitoring, Reporting and Verification Section: This section is responsible for the technical aspects of REDD+. A senior forest inventory specialist from the Department of Forest Research and Survey (DFRS) will be placed for this position. This section will be responsible for establishing and implementing the deforestation and forest degradation reference scenario, the monitoring and verification system, and the carbon accounting system.

The Communication and Outreach Section: This section is responsible in designing and disseminating REDD+ information, including REDD+ related pilot project outcomes. This section is responsible for design, implementation, and capacity-building activities for different stakeholders, including the government, civil society, and private sector. In addition, it will provide feedback to the REDD+ Cell and various stakeholders to ensure that their concerns are properly addressed during the REDD+ implementation process.

4. A REDD+ stakeholders' forum

The REDD+ stakeholders' forum is a separate but important forum of parties interested in REDD+ issues. The main function of this forum is to provide advisory support to the REDD+ cell on policy, programs, and activities. This platform also serves as the principal outreach and communication platform for stakeholders and is already in operation. It was created by a decision of the RWG for improving consultation and enhancing ownership of the REDD+ process. The forum includes representatives from the private sector, civil society, media, government organizations, community-based organizations, local and international NGOs, donors, academia, research organizations, and other stakeholders interested in climate change and the REDD+ process. The Forum has increased access to information of stakeholders and enhanced their role in the decision-making process. The involvement of different stakeholders helps ensure transparency and accountability during the readiness and implementation process.

5. Nepal's proposal on REDD+ readiness

Nepal should decide and be ready in technical, institutional, policy and other aspects to implement REDD+ by 2012. Nepal can benefit from REDD+ only after having such mechanisms in place. In this regard, Nepal has submitted it's REDD+ readiness preparation proposal (RPP) to the Forest Carbon Partnership Facility of the World Bank. This proposal also includes a framework for REDD+

implementation appropriate for Nepal. This framework will be discussed and decided by 2012. A summary of the proposed framework is as follows:

1. **Institutional set up at the national level**

   - Three levels of institutional set up exist in Nepal for REDD+ implementation. A 48-member Apex body is operational at the central level representing members from multi stakeholder and multi-sectoral entities. The main function of this body is policy formulation, and it also provides approval for work plans.

   - Under the chairmanship of the secretary of MoFSC, a nine member REDD+ Working Group has been formed. The members of this group include representatives from government and non governmental institutions. The RPP proposes a 12-member working group. The main responsibility of the REDD+ Working Group is to provide suggestions to the government regarding REDD+ implementation.

   - The REDD+ stakeholder forum has been formed for information exchange and providing suggestions to the REDD+: Forestry and Climate Change Cell. This forum meets every three months. All stakeholders working for REDD+ could be members of this forum.

   - The REDD+-Forestry and Climate Change Cell has been established under the MoFSC for implementing REDD+ activities.

2. **REDD+ strategic options**

   Despite not being able to estimate the actual rate of deforestation and forest degradation, nine major drivers have been identified for deforestation and forest degradation in Nepal. During the REDD+ readiness period, options for minimizing the impact of these drivers on deforestation and forest degradation will be identified and policies and programs will be developed accordingly.

3. **REDD+ implementation framework**

   The REDD+ implementation framework includes provision for financial transactions, benefit sharing, implementation levels, and record keeping systems. During the readiness period, Nepal will sort out various issues including arrangements for financial transactions, and benefit sharing from the central to the local level. Other issues to be clarified during the readiness period include: financial records and technical record keeping arrangements; the place and institution responsible for record keeping; the roles and responsibilities of different stakeholders for these activities; and the development of a REDD+ institutional framework.

4. **Strategic environmental and social assessment**

   The readiness preparation proposal includes a provision to conduct a strategic environmental and social impact assessment to minimize the negative impacts and ensure enhancement of positive impacts before the implementation of

REDD+. This will incorporate and safeguard the rights of forest-dependent local communities, indigenous people, disadvantaged groups, and women, and promote biodiversity, conservation of cultural identities, gender equity, capacity enhancement, and good governance.

5. **Reference scenario for deforestation and forest degradation**

For the implementation of REDD+, the basic requirements are to determine the present forest carbon stock and rates of deforestation and forest degradation. On this basis, payments will be made by measuring the reduced rate of deforestation and forest degradation and enhanced carbon stocks in forests. Nepal's readiness proposal includes a provision for estimating the current forest carbon stocks and the rates of deforestation and forest degradation by 2012. This proposal also includes methods for measuring the rates of deforestation and forest degradation. The technology used for these measurements, is mentioned in the proposal.

6. **Monitoring system**

Payment for carbon stock depends on the methods used for measuring carbon stocks in forests. FCPF has proposed three optional tiers for carbon measurements: tier 1, tier 2, and tier 3. Detailed measurements are required for the highest tier. The readiness proposal of Nepal has proposed tier 2 and this has to be confirmed by 2012. The RPP states that the the methods of collecting information, the time gaps between the two measurements, and the persons involved for measurements and data management will be decided by 2012.

7. **Stakeholder consultation and participation**

Consultation with all REDD+ stakeholders should take place before making decisions on REDD+ related issues. Active stakeholder participation is also equally important. Therefore, different consultation and participation activities are proposed in the readiness proposal. The proposal includes a provision for producing extension materials about the concept of REDD+ and disseminating them through different means, including the media. Consultation workshops at different levels and public hearings across Nepal are also mentioned in the readiness proposal.

REDD+ RELATED PILOTING PROJECTS IN NEPAL

Several different REDD+ pilot projects are now being implemented in NEpal. The pilot activities for forest carbon measurement, awareness-raising, and capacity building are as follows:

1. **Community forest management governance payment system under REDD+**

This program is supported by the International Climate and Forest Initiative Civil Society under Norad. ICIMOD, ANSAB and FECOFUN are involved in

implementing this program. This program is working under the following three watersheds:

a. Charnabati watershed of Dolakha.
b. Lubdi Khola watershed of Gorkha.
c. Kayar Khola watershed of Chitwan.

Following are the major objectives of this program:

- Capacity enhancement of the civil society of Nepal.
- Facilitation for developing basic requirements for establishing forest carbon fund.
- Support for carbon measurement, monitoring and verification.
- Adopt carbon trade of global and Hindu Kush Himalayan Region.

2. **Awareness and capacity building of communities on REDD+ at Asia and Pacific region**

This program is supported by Norad. This program is implemented jointly by RECOFTC - The Center (use long dash) for People and Forests (earlier Regional Community Forest Training Centre) of Bangkok, Thailand, and the Federation of Community Forest Users of Nepal (FECOFUN).

Working area: Nine districts of western Terai (Nawalparasi, Kapilbastu, Rupandehi, Banke, Bardia, Kailali, Kanchanpur, Surkhet and Dang) are the working areas of this program.

Objective: The main objective of this program is to promote REDD+ related awareness and capacity building at the grassroots level.

3. **Kyoto: Think global, act local**

This program is supported by the Netherlands Development Agency. The implementing agencies of this program are Tawante University of the Netherlands, ITC, ENDA energy Dakar, Senegal, ICIMOD Nepal, Trveness Consult Netherlands, Sokoine University, Forest Measurement and the Management Department of Tanzania. In Nepal, this organization is working in Lalitpur, Manang and Ilam districts.

Objectives: Support REDD+ through Community Forest Management and develop globally acceptable climate change policy on community forest management and REDD+.

4. **Poverty reduction through REDD+**

This program is supported by World Wildlife Fund (WWF), WWF Finland and WWF US. This program is implemented by WWF Nepal, Western Terai Landscape Program and Ministry of Forests and Soil Conservation. It is being implemented in 13 districts: Banke, Bardia, Dang, Kailali, Kanchanpur, Kapilbastu, Rupandehi, Nawalparasi, Makwanpur, Chitwan, Pars, Bara and Rautahat.

This program has the following objectives:

- Development of Carbon Measurement Technology.
- Explore benefits of carbon trade on livelihood promotion.
- Support the development of a national REDD+ strategy.

5. Awareness program on climate change and REDD+

This program is supported by UK Department for International Development (DFID). This program is being implemented by Livelihood and Forestry, District Forest Offices and nongovernmental service providers. This program is now in operation at the national level and in 15 districts at the local level. Among these 15 district, five are in Rapti zone (Rukum, Rolpa, Salyan, Pyuthan and Dang), three in Gandaki zone (Myagdi, Baglung and Parbat), three districts in Lumbini zone (Nawalparasi, Kapilbastu and Rupandehi), and four districts in Koshi zone (Dhankuta, Terhathum, Panchthar and Sankhuwasabha).

The main objectives of this program are:

- Awareness building of stakeholders on climate change.
- Promote adaptation measures to fight against climate change.
- Promote awareness at local level on climate change adaptation.

6. Capacity building program for indigenous people on REDD+ at local level

This program is financially supported by Norad and implemented by the National Federations of Nationalities (NEFIN). This program has been implemented over the last year and is focused on capacity building for the members of NEFIN. Its main objective is making local indigenous people aware of the concept of REDD+ and to assure them of their rights on resources and decision making.

7. Plan Vivo

The Nepal Swiss Community Forestry Program and the Livelihoods Forestry Program (LFP) are preparing to support the piloting of a Plan Vivo program in Nepal. It is expected that the plan will begin in 2010. Under this program, landscape level maps are already prepared. The main objective of the program is to support local communities with developing standards and systems for the payment of ecosystem services (including carbon stock enhancement) that supports poverty reduction. This pilot aims to work in a holistic way to solve the problems of land degradation, poverty, and climate change. This pilot will move forward and coordinate in the voluntary carbon market.

18 REDD+ implementation - required skills and infrastructure

INTRODUCTION

Necessary conditions for REDD+ implementation have already been discussed in Module 3. It is essential to understand how those conditions are met in practice, what are the skills and capacity requirements, what is the status of Nepal in meeting those requirements, what additional skills and knowledge are required, and what efforts are being made in Nepal for achieving those requirements. This study material briefly discusses the basic skills and knowledge requirements for REDD+ implementation.

NECESSARY CAPACITY FOR REDD+

The REDD+ implementing country should have the capacity to prepare for implementation. Such aspects are listed in the table below and later discussed.

A. Legal and social aspects	B. Technical aspect	C. Financial aspect
1. Necessary legal provision for controlling deforestation and forest degradation.	1. Basic information collection on deforestation and forest degradation	1. Fund transaction management
2. Necessary legal and institutional set up for REDD+ implementation	2. Data collection and management	2. Benefit sharing
3. Capacity development for implementation of developed laws	3. Carbon registry	3. Mechanism for controlling financial leakage
4. Facilitation capacity development for REDD+ process	4. Monitoring reporting and verification	
	5. Leakage, additionality and permanency	

A. LEGAL AND SOCIAL ASPECT

1. Legal arrangement for reducing deforestation and forest degradation

Different studies indicate that there is in an average of 1.7% annual deforestation in Nepal. Similarly, forest degradation rates of up to 8% have been recorded. Even though efforts to control deforestation and

forest degradation have been made since 1956, the deforestation rate has not decreased, except in community managed areas and protected areas infused with high financial inputs from the government. In some cases, it has increased. Government-managed forests account for 63% of available forestland and report high rates of harvesting and deforestation. a stronger and more effective government policy is needed to control deforestation.

Participatory forest management has been shown to serve as an inexpensive, simple, and sustainable method for controlling deforestation and illegal harvesting. However, it has proven challenging to implement the program in the Terai and High Hills, and some forest officials question the efficacy of the method itself. Furthermore, the question of equitable distribution of resources persists within participatory forest management as well. Clearer policies on resource ownership and benefit sharing must be formulated and training programs should be carried out for staff working in participatory forest management.

2. Legal setup for REDD+ implementation

It is necessary to develop necessary institutional and legal frameworks if Nepal enters into the REDD+ process. These frameworks should be developed during the readiness period, and should include the following aspects:

Carbon ownership

Existing forest management systems in Nepal clearly delineate land and product ownership. In community forestry, the ownership of forest products remains with the Forest User Groups, but various disputes and obstacles exist when it comes to sharing the benefits. Particularly in the case of carbon, it is difficult to determine ownership over carbon pools that exist both above and below ground, and existing legal provisions do not account for these complexities. These issues must be clarified in advance of REDD+ implementation. Skilled human resources are required to develop an acceptable policy and legal framework in consultation with key stakeholders.

Benefit sharing

The issue of benefit sharing should be considered after clarifying forest carbon ownership. Clear legal and policy frameworks for benefit distribution from the national level to local communities should be developed, including provisions for distribution within communities. These mechanisms should be developed through a review of benefit sharing mechanisms from other countries as well as existing practices within Nepal, while consulting stakeholders directly involved in forest management activities.

Establishment and operations of institutional setup

In order to implement REDD+, it is essential to establish institutional frameworks at different levels and improve the capacity of staff involved in these institutions. For example, individuals and staff involved in recently established institutions of Nepal like the REDD+ Working Group, the REDD+ Stakeholders' Forum and the REDD+: Forestry and Climate Change Cell

need to have the skills to perform assigned jobs, roles and responsibilities. In the coming days, all institutions and individuals involved in the process should acquire these skills.

3. Capacity development for implementation of prepared legal frameworks

In order for REDD+ to be successful, it is necessary that all prepared laws be respected. However, there are significant capacity development needs among those responsible for enforcing these regulations, and concerned stakeholders should be made aware of relevant rules and regulations. Capacity building should be undertaken in both enforcement and awareness raising to ensure effective implementation of REDD+.

4. Capacity development for REDD+ facilitation

During the preparation for REDD+, decisions on various aspects have to be made through wider consultations with various stakeholders. The existing human resources and institutional set up of the nation is not sufficient for effective REDD+ implementation. A range of stakeholders, including indigenous people, local communities, women, marginalized groups, forest-related governmental and non-governmental service providers, politicians, journalists, and the private sector should clearly understand REDD+, its advantages and disadvantages. Similarly, while making policy decisions that affect these stakeholders, wider discussion and agreement with these stakeholders is essential. Skilled and knowledgeable facilitators with in depth knowledge on different aspects of REDD+ are required for the extension and facilitation of the policy development process. As the concept of REDD+ is relatively new in Nepal, there is a lack of skilled facilitators and various types of outreach and capacity building materials. This urgently needs to be addressed.

B. TECHNICAL ASPECT

1. Reference scenario of deforestation and forest degradation

There is lack of statistics in Nepal for estimating the rate of forest loss. Based on the inventory taken almost a decade ago, the present annual deforestation rate is estimated to be 1.7%. More updated official information about the rate of forest degradation is not available. Based on a small-scale survey made in some districts, the annual rate of forest degradation is often described as 8%. To receive financial benefits from REDD+, it is essential to estimate the present rate of deforestation and forest degradation and an estimation of how much deforestation and forest degradation could be reduced after implementing REDD+. The payments will be made based on the reduced rates of deforestation and forest degradation.
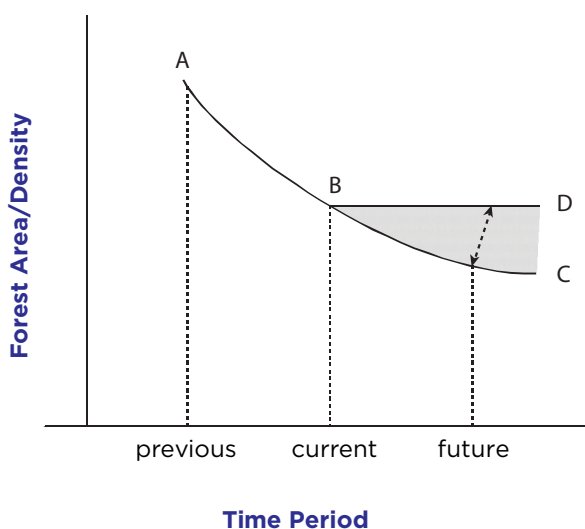
As shown in Figure 1, A-B indicates the future forest loss trend in the business-as-usual scenario. C-D represents the net change in forest loss if a good forest management system is applied. The area of BCD is the net reduction in forest loss by applying a good forest management system. Payments on

the REDD+ scheme can be claimed for the part BCD. The existing institutional and human resource capacity will be insufficient to develop this type of forest cover change model and future forecast of deforestation and forest degradation rates. Additional skills and knowledge are required for this.

2. Information collection and management

Figure 1: Trend of future forest loss

Under the REDD+ scheme, as mentioned in earlier chapters, payments will be made only for the reduced brates of deforestation and forest degradation and enhanced carbon stock as a result of sustainable forest management. The collection of accurate information, and then the updating and management of these figures is a challenge. In the context of Nepal, the present human resource and institutional set up is not sufficient for the information

we are still in the process of finding it

collection and updating needed by REDD+, as Nepal has a large number of small and fragmented forest blocks managed under various management systems. Information collection will be made at the community level, but its management should be done from village through to central levels. Therefore, necessary human resources should be developed from the village level to the central level. In addition, physical infrastructure development should also be done in each level.

3. Forest carbon accounting

A key aspect of REDD+ is to analyze and keep a record of forest carbon for a particular forest, the quantity of carbon increased or decreased, and the benefits received by institutions and communities. REDD+ benefit distribution depends on these records. Hence, the analysis of data and record keeping systems will have to be simple, transparent and accessible to all stakeholders. In addition, concerned stakeholders should be closely involved in its management. Skilled human resources are necessary to ensure the various institutions engaged in Forest Carbon Accounting have the capacity to do their work. Detailed information on forest carbon accounting is given in the annex 1 of this manual.

4. Leakage, additionality and permanence

Under REDD+, forest carbon is accounted for within the country's total forest area and not for individual or small patches of forests. This means that there should not be forest carbon depletion in one forest by enhancing carbon stock in other forest areas. Conservation of one forest and deforestation

and forest degradation in another forest is called 'leakage.' There should be no leakage under REDD+. In addition, under REDD+, forest carbon stock should be increased. Nepal will not receive financial benefits if there is no forest carbon stock enhancement. However, under REDD+, a forest patch will receive benefits for forest conservation. This means, there should be a guarantee for reducing deforestation and forest degradation caused by different activities to ensure conservation and management of forest for the long run. Permanency is affected by forest fire, encroachment, and illegal harvest of forest products. Capacity development of all stakeholders is necessary to guarantee all of these aspects.

5. Measurement, reporting and verification

There should be a regular measurement of the carbon status of a forest (how much carbon is conserved/lost and from which forest). In addition to measuring the carbon stock change, an assessment of REDD+ impacts (the positive and negative) to indigenous people, local communities, women, and disadvantaged groups; and the effects on biodiversity, watershed and conservation should also be conducted. Based on these assessments, reports on REDD+ benefits should be prepared. For evaluating carbon stock increments and social impact, Nepal should develop basic statistics by establishing permanent samples. For this, capacity enhancement of all stakeholders from the central to the village level is essential.

There is a provision for verification by carbon buyers using independent institutions to analyse the report prepared by the country. Therefore, the measurement and reporting done by the country should be transparent, clear and in accordance with international standards. It would be good to develop an independent verification team within Nepal to reduce the cost of verification. For this, there is a need of a capacity building program to establish appropriately qualified institutions.

C. FINANCIAL ASPECT

1. Fund management

It is likely that benefits received from REDD+ will be managed through a different mechanism than existing government institutions. Clarity in setting up the legal framework and appropriate institutions is necessary for successful fund management. Unfortunately, existing capacity in Nepal may not be sufficient to manage the fund in an efficient, transparent, and effective way. Additional skills and knowledge may be required.

2. Benefit sharing

Issues are being raised on the equitable distribution of benefits received from REDD+ at the national to community levels. There is a common understanding that a minimum amount required for management should be kept by the state and a large proportion of the benefits should go to the community level. It is

also necessary to have a fair and equitable distribution of the benefits within the community. Evidence shows that poor and marginalized people are not getting fair and equitable benefits from the existing participatory forest management modalities. In this situation, it is necessary to enhance the skills and knowledge of local people on benefit distribution. In addition, it is also necessary to enhance capacity for equitable distribution of benefits at other levels as well.

3. **Mechanism development for financial leakage control**

One of the major problems in Nepal is financial leakage. Only a small proportion of money allocated for the development program goes to the community. Financial leakage happens in two ways:

First: Due to a lengthy and complex management process, there is a problem of receiving the budget on time. Furthermore, it takes a long time to make a decision and only a small proportion of the allocated budget reaches to the implementation level.

Second: A development program must pass through a complex process, during which individuals involved in the process may illegally receive part of the allocated amount.

The real stakeholders of REDD+ will not receive optimum benefits unless corruption as mentioned above is controlled. Therefore, to minimize such corruption, efficient and transparent institutional development is necessary, as well as the development of skilled and capable staff and the promotion of whistleblowers from stakeholders.

REDD+ CAPACITY DEVELOPMENT EFFORTS IN NEPAL

Different activities related to REDD+ have been initiated in Nepal since 2008. Concerns and interests of different institutions and organizations have been increased after the approval of the concept note on REDD+ Readiness Plan of Nepal by the Forest Carbon Partnership Facility (FCPF) in 2008. Different donors began to provide assistance to work on it. Piloting activities carried out by different organizations have already been discussed in the previous sections.

Capacity development in different aspects of REDD+ is being carried out by different organizations. However, as REDD+ is new, it is not yet possible to identify the required new skills and knowledge. This is a learning process. Additional capacity development programs are required for skill development in the new sectors.

Appendix-1

COMMUNITY BASED CARBON ACCOUNTING SYSTEM: MEANS FOR STRENGTHENING TECHNICAL ASPECT OF REDD+

What is carbon accounting system

In order to be involved in REDD+, it is necessary for the country to prove carbon emission reduction. Estimates are required to know how much carbon dioxide equivalent emissions are reduced in a country through REDD+ implementation. Appropriate record keeping of this allocation is called the carbon accounting system.

Why carbon accounting system is necessary

A scientific but simple accounting system under REDD+ is very important. If it is confirmed that a country will adopt the REDD+ process, it is necessary to know how much carbon dioxide equivalent is saved by reducing deforestation and forest degradation. This will help estimate how much benefit can be received from REDD+. Therefore, determination of base year emissions and the promotion of carbon enhancing activities should be carried out by applying appropriate scientific means. Scientific measurement of carbon stocks in a certain area should be done periodically. Verification of the measured data is very important in the REDD+ process. Therefore, scientific report keeping also helps for verification. In addition, this work also clarifies the carbon stock and its changed rate for a particular forest. Furthermore, the record also helps map out the deforestation and forest degradation. Importantly, a carbon accounting system is a scientific means of trust between the carbon seller and buyers.

How to a keep a community carbon account

The following tasks are necessary for keeping a carbon account:

Capacity development in REDD+ carbon accounting

First, it is necessary to raise awareness and the capacities of community people about the different activities of REDD+. For this, different activities should be conducted at the community level like REDD+ orientation, a debate about ongoing REDD+ activities at the national and international level, possible benefits and risks of REDD+, and necessary social, economic and technical preparation about REDD+. After this, capacity development of community people should be carried out if the community decides to enter into the REDD+ process. In this process, capacity development of local communities in forest carbon measurement and record keeping should be carried out. For this, the following knowledge should be given to the local communities:

- Necessary technical assistance and tools for forest carbon accounting.
- Forest carbon measurement procedure for forest carbon accounting.
- Assure quality works on forest carbon measurement and accounting.
- Data analysis of forest carbon measurement.
- Data management of forest carbon measurement.

Forest carbon measurement

Forest carbon measurement is one of the most important activities of carbon accounting. While measuring carbon, it should be done using standard guidelines such as the Community, Climate and Biodiversity Standards; the Forest Stewardship Council Standards; and the International Panel on Climate Change Guidelines. For this, the following points should be considered:

- Participatory mapping.
- Framework used in pilot forest carbon measurement.
- Determination of number of permanent sample plots.
- Layout of permanent sample plots in maps.
- Necessary planning for measurement in permanent sample plots.
- Necessary materials/tools collection for forest carbon measurement.
- Formation of working group and reorientation on forest carbon measurement.
- Measurement of permanent sample plots.

Data analysis

Further measurement of collected data from the field should be done in scientifically reliable laboratories. Carbon content of green foliage, dry leaf litter, and soil can be determined by laboratory analysis. Similarly, above ground and underground biomass of tree species can be determined by using different equations. On the basis of carbon content of each plot, the total carbon content in a hectare of forestland can be determined. Based on the estimation of carbon stock of a forest in a base year and then the measurement of carbon stock in the same place after a certain period of time, the net carbon stock change can be estimated.

Data management

It is necessary to preserve the collected data for a long time. This will be very helpful for the verification team at the time of verification. This data can be safely stored in computer files or other means.

Quality control and assurance

Priority should be given for quality data collection, analysis and management. Care must be given while performing any activities. For example, while collecting data for tree measurements, the scientific principles of measurement must be applied and assurance should be taken so that all necessary information is collected. If not, the carbon buyer may not trust the collected data and refuse to pay for carbon credits. In addition to data collection, the analysis and management should be done scientifically. For this, special procedures for data can be applied for collection. For example, if special supervision teams check some plots randomly during the data collection time, mistakes can be identified and corrected.

19 REDD+ related existing policies and institutional frameworks

INTRODUCTION

There are no specific policies and laws in Nepal related to REDD+. However, there are existing policies and legal provisions on forests, the environment, biodiversity, non-timber forest products, water resources, and land that help control deforestation and forest degradation. For example, Nepal has adopted a decentralized and participatory system of forest management. Similarly, some policies and laws help reduce deforestation and forest degradation, while also improving the livelihood of local communities through the use of natural resources. These policies are also helpful for economic and community development. While analyzing the legal and policy issues in Nepal, it is found that these policies are formulated considering the interrelationship of conservation, livelihoods and economic development. It is also necessary to consider these features while preparing a national REDD+ strategy.

In general, good policy and regulations have the following features:

- Participation of all stakeholders in policy formulation
- Implementable and result oriented
- Clear and not contradicting to other policies
- Flexible and inclusive of ecosystem services
- Promote sustainable development
- Promote sustainable ecosystem management

REDD+ related basic laws and policies of Nepal and their features are summarized below.

REDD+ RELATED EXISTING POLICIES

Policies, strategies and programs	Forest related concept/arrangements
Forest sector related policies, strategies and programs	
Master Plan for the Forestry Sector, 1989	Promotes participatory forest management and presents the forestry sector as the foundation of development.
Leasehold Forestry Policy 2059 B.S.	Adopts participatory forest management system considering forestry sector as a foundation of development.
Non-timber Forest Product Development Policy 2060 B.S.	Contributes to economic development through conservation and the promotion of high value non-timber forest products and enhances community participation in NTFP management.

Policies, strategies and programs	Forest related concept/arrangements
Environment and biodiversity policy and strategies	
National Conservation Strategy, 1988	Wise and sustainable use of natural resources to improve the livelihoods of communities.
Nepal Environmental Policy and Action Plan(first and Second) 2051 B.S.	Implementation of Master Plan for the Forestry Sector and sustainable management and use of natural resources.
Nepal Biodiversity Strategy, 2002	Sustainable management of protected areas, forests, grazing land, agro biodiversity, wetlands and mountain biodiversity.
Nepal Biodiversity Strategy Implementation Plan 2006-2010	Implementation of activities prescribed in the biodiversity strategy 2002.
Terai Land Arc: Nepal Strategic Plan 2060-2070 B.S.	Carry out advocacy, coordination, sustainable forest management, and sustainable development, conservation of species and ecosystems, Chure region watershed conservation, awareness and education activities in the Terai Land Arc. Promote importance of environmental services of Chure area.
Sacred Himalayas Land Arc: Nepal strategic plan 2063-2073 B.S.	Carry out activities for biodiversity conservation, cultural and natural resource rights, sustainable livelihoods, and water resource conservation.
Sustainable Development Agenda of Nepal, 2060-2074 B.S.	Biodiversity conservation, sustainable management of forest and protected areas.
Mountain Development Policy 2059 B.S.	Conservation and development of mountain areas.
Biodiversity Registry Process	Describes procedure for biodiversity registry.
Management policy for National parks, reserve and conservation area by non government and other institutions, 2060	Hands over management responsibilities of parks and reserves to nongovernmental organizations.
Wildlife farming, breeding and research working strategy 2060 B.S.	Involves the private sector and institutions in wildlife farming, breeding and research.
National Bio safety Policy 2063 B.S.	Carries out necessary activities to control the negative impacts of bio technology.
Wetland, watershed, water resource and irrigation related policies, strategies and plans	
National Wetland Policy, 2003	Sustainable management of wetland through joint effort of community, government, local bodies and private sector.
Water resource strategy, 2003	Conservation and sustainable management of water resources and watershed.
Nepal water plan 2064-2084 B.S.	Implementation of activities prescribed by Nepal water resource strategy.
Chure area Program, 2003	Participatory Chure area conservation and sustainable management.
Irrigation Policy 2060 B.S.	Participatory irrigation canal development and management.

Policies, strategies and programs	Forest related concept/arrangements
Policies, strategies and program related to agricultural sectors (related with forestry sector)	
Agriculture Perspective Plan 2053 B.S.	Management of hill forests as community forests and the forests of Terai as a productive forest through private sector.
National Agriculture Policy 2061 B.S.	Sustainable utilization of agro biodiversity including forests and other natural resources.
Agro biodiversity policy 2063 B.S.	Sustainable conservation and utilization of agro biodiversity.

LEGAL PROVISIONS RELATED TO REDD+

Laws	Concept/objectives/arrangement
Forestry sector related laws	
Private Forest Nationalization Act 2013 B.S.	Abandons all laws having provision on private ownership on forests; forests kept under government control. However, forest area of 25 Ropani and 5 Bigha in hills /valley, and Terai respectively developed through plantation in own effort was allowed to remain private forest.
Plant protection act 2029 B.S.	Control of communicable disease and insects in import and export plants and their parts.
Forest Act 1991	Forest management, development, conservation and utilization of forests by managing the national forest as community, leasehold, religious, government managed and protected areas for fulfillment of basic requirements of local people, social and economic development, and environment protection.
Environment related laws	
National Nature Conservation Trust Fund Act 2039 B.S.	Establish Nature Conservation Trust Fund for nature and natural resource conservation and management
Nepal mines and mineral acts 2042 B.S.	Minerals as property of the government; there should be no impact on environment and local community while extracting minerals.
Pesticide Act 2048	Proper management on production, marketing, import, export and use of pesticides to kill insects that attacks seeds, plants, trees, domestic animals, and birds etc.
International integrated mountain development centre Act 2049 B.S.	For seeking support from international community on sustainable management of mountain region and its natural resources.
Environment Protection Act, 1996	Initial Environment Examination (IEE) and Environmental Impact Assessment (EIA) should be carried out before starting any environment related activities as per the provision of appendix -1 and appendix -2 of the environment protection regulation 2054 B.S.

Laws	Concept/objectives/arrangement
Conservation Area related Laws	
National Parks and Wildlife Conservation Act 2029 B.S. (there are 10 bylaws under this Act)	Regulates conservation and hunting controls and provides facilities to the people from conservation areas (national parks, reserve, conservation areas, buffer zones), natural scenic beauty areas, and wildlife habitat. 30-50% revenue from the park area can be used for buffer zone development; community, religious and private can be developed in buffer zone.
Watershed and water resource related Laws	
Aquatic Conservation Act 2017 B.S.	Conservation of aquatic species; assure rights of indigenous people to collect aquatic species in specific season.
Soil and watershed Conservation Act	Control of natural disasters like flood, landslide, soil erosion and conservation of watershed, declare protected watershed, benefits of local people and economic welfare.
Water resource Act 2049 B.S. (including irrigation regulation 2056 B.S.)	There should not be soil erosion, flood, landslide and other environmental adverse effect while using the water resources. Rights of water user groups on the canal side plantations.
Electricity Act 2049 B.S.	Electricity production, extension and distribution works should not have adverse effect of soil erosion, flood, landslide and other similar environmental problems.
Drinking water Management Board Act, 2063 B.S.	Conservation of drinking water resources.
Land related Laws	
Land Measurement Act 2019 B.S.	Government shall form a committee for land measurement, categorization of land, registration of previously unregistered land, registration of encroached area in the name of government, and forest demarcation.
Civil Code (Muliki Ain) 2020	No one can cultivate in the government land.
Land Act 2021 B.S.	Declare land holding limit, assure farmers' right, the seized land above the holding limit shall be given to cooperative farming, land use, control fragmentation of land, block cultivation.
Jhora Area Land Act 2028 B.S.	Land registration for the people residing in the forest areas of Jhapa, Morang and Sunsari districts and forest demarcation.
Pastureland nationalization Act 2031	Nationalization of all pasture lands, but pasture land can be kept for livestock farming, medicinal herbs cultivation, and horticulture and tree estate development.
Trust (Guthi samsthan) Act 2033 B.S.	Conservation of all non cultivated trust lands, and tillage claim cannot be made for barren land.
Land revenue Act 2034	property; lands which were not at first registered can be registered later; registration and cultivation of government forests is banned government.
Land Acquisition Act	Government shall acquire any land by giving compensation to previous inhabitants.
Forest related other laws	
Local Administrative Act 2028	Chief District officer shall give order for killing man eating tiger, leopard or any other dangerous wild animal.

Laws	Concept/objectives/arrangement
Public Roads Act 2031	Department of Road shall plant trees on either sides of roads; protection of such trees should be done by VDC or municipality; rights to harvest trees remain of the department of roads.
Tourism Act 2035	Tourists and mountain climbers should follow the rules and regulations of forests and environmental protection. Also includes a list of tourism industry occupations.
Industrial Occupation Act, 2049 B.S.	Includes "Agriculture and forest-based industries" as an important industry classification.
Value Added Tax Act, 2052 B.S.	Sale of wood for commercial purpose by any body should pay value added tax except for NTFP and their extracts.
Local Self Governance Act, 2055 B.S.	According to the decision of district council, DDC may impose tax on resin, NTFPs, thatch grass, stone, slate, sand etc; DDC may sell sand, gravel, stone, slate, soil, drift wood of its area.
Income Tax Act, 2058 B.S.	Income from cooperative-based products are free of income tax.
Interim Constitution of Nepal, 2063 B.S.	Priority should be given to local communities in natural resource management and utilization.

Existing policies, rules and laws should be reviewed and amended as per necessary if the government of Nepal enters the REDD+ process. The requirement of new laws, policies and regulations will be decided by 2012. Some new legislation and regulations, like the Financial Management Trust Fund Act, need to be developed.

20 Major issues and challenges raised in REDD+

INTRODUCTION

REDD+ is not limited to a single concept. REDD+ has been developed as an instrument for forest conservation and livelihood improvements. Therefore, during the implementation of REDD+, it may cause both positive and negative impacts on stakeholders, especially those people dependent on forests for livelihoods . So, it is necessary to critically examine REDD+ and the other related issues, such as political, economic, social and cultural issues.

In the context of Nepal, issues such as whether the implementation of REDD+ really provides the benefits to the communities who need it and whether the nation itself can receive financial and environmental benefits from it are under discussion. In addition, other issues exist, like whether the communities will have the right to continue using forest resources at the present level if REDD+ is implemented. Similar types of issues and challenges related to REDD+ implementation are described below.

COMMON ISSUES AT THE INTERNATIONAL LEVEL

- The REDD+ implementation procedures are still not clear at the international level. The main issue is whether to implement REDD+ at the national and/or sub national level and how to make it work across these levels.

- The financial modality of REDD+ and its implementation mechanism is not clear. It is not decided yet whether to adopt a fund based mechanism or to leave it to the free market.

- Synergy between REDD+ and existing carbon trade mechanisms is not yet clear. For effectiveness of this trade, how to develop collaboration among them has been an issue.

- A challenge remains for both supporting countries and those developing countries receiving support in areas such as technical assistance (such as leakage, safeguard, permanency, additionality and standards) and monitoring, evaluation, and verification tasks.

- It is agreed that REDD+ should give equal importance to environmental aspects, but in reality this is not happening. For example, different European countries had

declared support for more than US$4 trillion for the implementation of REDD+. But, this fund is focused on Brazil, Indonesia and other high profile countries that have high rates of deforestation. Forest and environmental conservation of small countries like Nepal has a lower profile.

▪ It is suspected that REDD+ will be used as an excuse by industrialized countries to not reduce their own carbon emissions. If such a situation exists, instead of contributing to climate change mitigation, REDD+ may simply add a layer of complexity to the status quo.

NATIONAL AND LOCAL LEVEL ISSUES

The national and local issues of REDD+ in Nepal are categorized as socio-economic, policy, legal, and technical aspects and are described below:

Socio-economic aspect

▪ The main issues for indigenous people and forest-dependent local communities are whether they will retain the right to continuously use forest resources that they have been using from ancient times and the possible impact REDD+ may have on their livelihoods.

▪ Considering inequality, discrimination, and differentiation in our communities over many years, there is a possibility that the real rural forest manager will not receive REDD+ benefits, and instead the benefits will flow to local elites and a powerful person/group at the central level.

▪ There is no clearly identified market for REDD+ yet. We are preparing for carbon trade under this uncertainty. There is also doubt on the success of this trade. Who is the buyer? How will the buyers purchase carbon? What is the price of selling and buying? These questions are still unclear.

▪ Traditional knowledge, skill, and culture of indigenous groups, local communities, women, and disadvantaged groups that are dependent on forests and other natural resources have not been recognized or identified, and the issue of assuring the rights of these groups is becoming increasingly important.

▪ REDD+ has raised concern among forest-dependent 'Dalit' communities of the possible negative impact on their traditional use rights.

▪ Disadvantaged groups, such as the Dalit, living in rural areas are often illiterate and difficult to access, it has been a challenge to implement necessary REDD+ related awareness raising and capacity building programs targeting these groups.

▪ A special program needs to be organized for women analyzing their roles in forest protection and management activities and considering the impact of climate change to them. Discrimination against gender is a big challenge for implementing these activities.

- The majority of the landless people are excluded in the forest user groups in the Terai. It is a significant challenge to include those forest dependent people and communities in the REDD+ implementation process.

- There is a danger of conflict and competition between the central government, local communities and local bodies as there is no clarity and not much effort has been made on the mechanism for REDD+ benefit sharing.

- There is a need for coordination and collaboration among local and central development institutions to improve local development infrastructure, like roads and electricity. Coordination among local development institutions and forest related local institutions and communities is necessary, but remains a serious challenge.

- Financial payment claims under REDD+ should be made based on physically measured carbon. Underdeveloped countries like Nepal are not exchanging their learning from community forests that could be beneficial to the whole world. It is necessary to pay for the community forestry related Indigenous Knowledge System as well.

Policy and legal aspect

- There are still doubts about the benefits of REDD+ at the community level as there is no clarity regarding carbon ownership in the present forest period after policy.

- In the context of forest management, women, indigenous people, and local communities are the real owner of forests. These groups of people should have overall rights over forests. REDD+ will not be a success if this right is not guaranteed.

- It is now well recognize that forests cannot be protected by the traditional patrolling system of the government. There is now a growing consensus to all that an appropriate tenure system, poverty reduction, and good governance are all necessary for successful implementation of REDD+. There are still doubts and challenges surrounding the REDD+ process and its potential is often questioned because poverty reduction and good governance are multi dimensional issues and a strong political commitment is needed to overcome these issues.

- At present, there is a rising demand for ensuring the rights of forest dependent indigenous people and local communities, as per international commitments, agreements and understandings (such as ILO 169 and UNDRIP). However, there is still no clear method developed for implementing these rights provisions in Nepal, presenting a significant challenge given the country's geophysical complexity and social structure.

- There is an urgent need for policy reformulation and strong political commitment from all parties and other stakeholders for minimizing deforestation and forest degradation, especially in the Terai. Failure to do so will be a big challenge in REDD+ implementation.

Technical aspect

- Policies and their implementation should be developed considering international development scenarios, as REDD+ is a worldwide concept. A major issue in Nepal is to implement REDD+ up to the community level using simple and clearly understandable techniques.

- Another challenge for REDD+ is carbon measurement, data analysis, report preparation, evaluation and validation. As it is given high importance in REDD+ implementation, it is clear that REDD+ will be quite technical and there is a danger that the technicians may get more benefits than the local communities. Communities are now in fear about whether the benefits of forests protected by the communities will go to the technicians only.

- Considering the limited capacity of the Ministry of Forest and Soil Conservation and its staff, a lack of coordination, and the poor conservation of forests, improving these areas is a big challenge.

Effective coordination among government and nongovernment institutions to effectively implement REDD+ and ensure maximum benefits from the mechanism is also a serious challenge that should be addressed immediately.

Module

21

TRAINING SYNTHESIS, SUGGESTIONS, EVALUATION AND CLOSING

Introduction

During the training period, various subjects related to REDD+ are discussed in a logical sequence. Towards the end of the training program, participants may find it difficult to recall everything that was discussed over 4-5 days, especially with respect to to the technical aspects of REDD+. Therefore, it is a useful exercise to synthesize the entire training to review the learning. Considering this, this to the technical aspects of REDD+ module is designed to synthesize all the training messages, collect suggestions on training management and its effectiveness, and conclude the training.

Objective

The overall objectives of this module are to review and collect suggestions on all the aspects of training, including messages, training management, and effectiveness.

Sessions

This module has the following major sessions:

Session 21: Synthesis of training messages

Session 22: Final evaluation and closing of training

21 Synthesis of training messages

Time:
1 hour
and 30 minutes

Methods:
Brainstorming,
small group work,
presentation and
discussions.

Materials:
Brown paper, white
board, marker pen and
masking tape, laptop
computer.

INTRODUCTION

It is essential to review the subjects discussed during the training and the messages that the participants are taking with them. Therefore, this session is designed to quickly review and synthesize the important messages and the learning of the entire training.

OBJECTIVES

At the end of this session, participants will be able to:

- Explain the major messages and learning of each session.
- Articulate how they plan to use the learning in their respective work places.

PREPARATION

- Develop a format for group exercises for training synthesis and distribute them a day before during the evening evaluation.
- Develop an idea on how to form small groups.

SESSION ACTIVITIES

- Explain the necessity of synthesis and presentation of discussed subjects.
- Divide participants into six small groups.
- Assign one module to each group and ask the groups to discuss the subjects and their major learning according to the form presented below, which was provided a day before to the participants.
- Remind participants that the discussion should focus on the subject matter and should be analytical/critical.
- Ask each group to present their discussion.

- Ask other participants to add if anything is missing in the presentation. Facilitators should also complement this work.
- From plenary discussion, identify a key message of each module and list them out.
- Within the time available, clarify the issues identified if they are unclear.

Module	Sessions	Major messages and learning	Area for clarification	Remarks
1				
2				
3				
4				

CONCLUSION

The key messages from the discussions and the review of the subject matter should be recalled. For this, the subject matters and the learning are presented in a participatory way. The review process clarifies the unclear messages and also assists in receiving feedback on the level of understanding of the participants.

FORWARD LINKAGE

This session focused on the key messages and learning of the training including participant suggestions. Conclude the session by informing them that overall training evaluation is done in the next session.

22 Final evaluation and closing of training

Time:
1 hour
and 30 minutes

Methods:
Questionnaires and format filling, speeches, discussion.

Materials:
1. White board, markers, meta-card.
2. Questionnaire for training evaluation and post test subject matter evaluation.

INTRODUCTION

A formal closing session is required after the presentations and the discussions of the previous sessions have been completed. The closing session includes a post-training test to assess the level of understanding of the participants after the training, which will then be compared to the pre-test subject matter evaluation. It will also include an overall training management evaluation that gives feedback on the training environment, the quality of the facilitator, the materials provided and logistics management; and the program wrap up. The conclusion of the training is normally done through speeches by a few participants that encourages and urges the participants to use their learning in the field.

OBJECTIVES

At the end of this session, participants will be able to:

- Provide feedback on the strength of the training and any areas of improvement.
- Complete the post evaluation form for the subject matter.
- Formally close the training program.

PREPARATION

- Make the questionnaire ready for the training evaluation, as well as the post-training test on the subject matter.
- If any guest is to be invited for the formal closing, invite them on time.
- Identify a speaker from the participants and inform them in advance so that they will be prepared.

SESSION ACTIVITIES

- Explain the session objectives and task.
- Distribute the post evaluation questionnaire to the participants and ask them to fill them in. Allocate sufficient time for this.
- Collect all the answer sheets and forms and clarify to the participants that these forms will be evaluated against the pre-test questionnaire form.
- Distribute training evaluation forms (as given in the annex) to the participants and ask them to complete them.
- Collect them and clarify to the participants that your feedback will be beneficial for the management of training in the future.
- Use a mood chart for the general evaluation of training e.g. happy face, normal face and bored face.
- Thank all participants for their active participation in the training and wish them well for their effective use of learning.
- Ask one female and one male participant to speak about the training. Request one of the mature participants to give the speech about the training and conclude the training.

TRAINING EVALUATION FORMS

3 Post test on subject matter

REDD+ training - post-training questionnaire

Part 1 Objective questions (put ✓ for the correct answer)

Basic understanding on climate change	Level of knowledge (Tick which ever is appropriate)			
	Know and can explain	Understand well, cannot explain	Only heard but cannot explain	Not heard
Effect of greenhouse gases on earth is increasing				
Name of the greenhouse gases				
The role of forests in emission and absorption of greenhouse gases				
Concept of REDD+				
Concept of carbon trade and carbon stock in forest can also be marketed				

6. Do you believe we can get benefits from REDD+ in our context?
   a. Yes I believe
   b. Difficult and challenging
   c. No benefits for community level
   d. Don't know/can't say

7. Forest governance is important for getting benefits from REDD+. Who is most responsible for forest governance?
   a. Government officials
   b. Political parties
   c. Community themselves
   d. All of the above

8. Who owns forest products coming from community forests?
   a. Government
   b. Individual
   c. Community
   d. Don't know

9. Our society is divided into different socio-economic and political strata that affect the access over and management of the resources.
    a. Know and can explain
    b. Understand well, cannot explain
    c. Only heard but cannot explain
    d. Not heard

10. How does this complex social status and differential access to the resources affect benefit-sharing systems?
    a. Provides different opportunities to different people
    b. Creates the situation of domination
    c. Pushes the least benefited further backward
    d. All of the above

11. How do you think REDD+ benefits should be distributed?
    a. Directly to the communities
    b. Through government mechanisms
    c. Through civil society organizations
    d. Don't know

12. Which institutional aspects should be considered for REDD+ implementation?
    a. Existing CFUG
    b. Network in village development committee (VDC) level
    c. District level community forest network
    d. Don't know

4 Training evaluation
(To be administered at the end of the training)

Title of the training course :
Date :
Name of the participant (optional) :

Please note that your constructive feedback is valuable as it will help in assessing the quality of our training programs and improving them further to be more effective. Kindly read each question carefully and respond openly, if possible with examples and comments. **ALL QUESTIONS MUST BE ANSWERED**.

1. The objective of the training program and contents					
	Strongly agree	**Agree**	**Neither disagree nor agree**	**Disagree**	**Strongly disagree**
1.1 The objectives of the training program were clear					
1.2 The contents of the training program and activities were relevant to the objectives					
1.3 The length of the program was appropriate					
comments					

2. The resource person(s)/facilitator(s)					
	Strongly agree	**Agree**	**Neither disagree nor agree**	**Disagree**	**Strongly disagree**
2.1 Is (are) highly competent in the subject area.					
2.2 Delivered clear and logical sessions.					
2.3 Was(were) well organized and prepared.					
2.4 Presented material at an appropriate pace.					

2.5	Encouraged participation.					
2.6	Responded well to participants' needs and questions.					
2.7	Provided up to date and useful backgrounds on REDD+					
2.8	Addressed the methodology for dissemination of the training contents					
2.9	Addressed the links between their sessions and the training manual					
2.10	Addressed the need for communication and information sharing					
2.11	Showed understanding of the capacity building needs for REDD+					

Comments

3.	The training course materials & exercise					
		Strongly agree	Agree	Neither disagree nor agree	Disagree	Strongly disagree
3.1	Were sufficient, clear and relevant.					
3.2	Will be useful back on the job.					
3.3	Will assist with disseminating the training contents					
3.4	Will assist with developing the training methodology					
3.5	Are up to date					
3.6	Provide adequate background					

Comments

4.	Environment (training venue, accommodation & logistics)					
		Strongly agree	Agree	Neither disagree nor agree	Disagree	Strongly disagree
4.1	The venue, seating arrangements, room temperature and lighting were conducive to learning.					
4.2	All administrative and logistic support was satisfactory.					
4.3	Accommodation was satisfactory and in close proximity to the training venue					
4.4	Meals and refreshments were delicious and no health problems encountered					

Comments

5.	Conducive working environment					
		Strongly agree	Agree	Neither disagree nor agree	Disagree	Strongly disagree
5.1	Current working environment is favorable for applying learned knowledge and skills to my work.					

Comments

6.	Do you have any suggestions to improve the training program to make it more effective?

5 Short term resource persons feedback form

Date   :
Training venue/location   :

Dear Dr./Mr./Mrs./Ms...

First of all, we thank you very much for your valuable inputs to this training program. In order to evaluate and assess the quality of the training program and continuously keep updating and improving it, we request that you please provide your valuable feedback by responding to the following questions. Wherever possible, may we also request that you support your responses with examples and critical comments?

....
....
....
....

1. How will you rate the selection of participants on following criteria: (please tick)

SN	Criteria		
1	Age composition	☐ Balanced	☐ Imbalanced
2	Gender mix	☐ Balanced	☐ Imbalanced
3	Organizational representation	☐ Well represented	☐ Less represented
4	Any other observation		

2. Could you please list down 2-3 key questions from the participants on your presentation?

    i.
    ii.
    iii.

3. How will you rate the response of the participants to your presentation?

    i.   Very interactive/participatory
    ii. Critical and constructive comments
    iii. Learning oriented
    iv. Any other observations

4. How would you rate the training facilities?

    i.   Well organized
    ii. Sufficient
    iii. Inadequate

5. Any other suggestions you may have to improve the quality of the training:

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