Cambodia UN-REDD National Programme

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(#40, Preah Norodom Blvd, Khan Daun Penh, Phnom Penh, Kingdom of Cambodia, 3th Floor)

Training Course on "An introduction to the Concept of Reducing Emissions from Deforestation and Forest Degradation – REDD+"

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Contents

Foreword

Climate change is one of the most important and complex challenges now facing humanity. It is predicted that, through increased temperatures, climate change will produce an increased frequency and intensity of storms, flooding, and drought; more extreme temperatures (both high and low temperatures), and a change in seasonality of plant and animal cycles. Therefore climate change will have a wide ranging impact on socio-economic sectors affecting food security, water security, human health, livelihoods and infrastructure.

The increase in the average global temperature is caused by greenhouse gas emissions from industrial activities, the energy and transport sectors, agricultural activities, and deforestation and forest degradation. The contribution to the global CO2 emission from deforestation and other landuse changes have reported varied figures, but the latest report of Global Carbon Project 2013 has put this figure to 8%[1]. Therefore reducing emissions from deforestation and degradation is one option being proposed by the international community to mitigate climate change.

Reducing Emissions from Deforestation and Degradation (REDD) is an initiative to create a financial value from the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands. REDD plus (REDD+) goes beyond deforestation and forest degradation and includes the role of conservation and sustainable management of forests and enhancement of forest carbon stocks[2].

The Royal Government of Cambodia (RGC) has acknowledged REDD+ as a mechanism for the protection of natural forest in Cambodia through developing a REDD+ Roadmap development/Readiness Preparation Proposal (R-PP). A future mechanism on REDD+ provides an opportunity for Cambodia to be able to gain financially from forest conservation, protection, and sustainable management.

However, while the scheme holds promise, the implementation mechanism of REDD+ has not yet been streamlined, leaving many fundamental issues unresolved. In addition, there are many technical aspects and fundamental prerequisites for the success of REDD+ that include a need for increased understanding, improved awareness and capacity of all REDD+ stakeholders. Thus, through the support of the Cambodia UN-REDD National Programme, RECOFTC - The Center for People and Forests have developed a training Programme on **"An introduction to the Concept of Reducing Emissions from Deforestation and Forest Degradation – REDD+"**. This has been designed to support the implementation of the REDD+ Roadmap, and in particular to support capacity development towards development of the REDD+ strategy and implementation framework in Cambodia. The aim of the training Programme is to increase knowledge and understanding of REDD+ among key stakeholder groups to facilitate their future engagement in consultation and decision making processes related to climate change and REDD+ in Cambodia.

This document provides a detailed description of different modules and related session plans for the trainers to conduct a four days training program on the concept of REDD+, as presented below:

[1] http://www.sciencedaily.com/releases/2013/11/131118193127.htm
[2] http://www.un-redd.org

Introduction

Session 1: Getting to know each other

Objectives At the end of the session participants,

- Will be better acquainted, know where each other comes from, and how they have been involved in REDD+ activities
- Become familiar with each other in a friendly atmosphere

Materials

- Flip charts and markers
- Cards for interviewers

Time 45 minutes

Steps

1. Introduce the session by explaining that before we introduce the program it is important that we introduce ourselves and get to know each other better. Explain that we will use a simple method that allows every one to have the opportunity to share
    - who we are,
    - where we come from
    - how we have been involved in REDD+
    - any experience in climate change, deforestation and REDD+
2. Ask participant to find one person that he or she never met before. Ask each participants to discuss the above questions with their new friend and be prepared to introduce them to the other participants in plenary.
3. Allow 10 minutes for each participants to interveiw his or her new friend.
4. After all participants have interveiwed each other, invite one person to start introducing their new freind to the others in plenary. Repeat the process until every one has been introduced.
5. Remind the participants that we all are or will be involved in REDD+. Some may have different roles than others. We should use this training opportunity to maximize our experience in learning more about REDD+ and how we could work together in the REDD+ process.
6. Summarize by stressing that during the rest of the training sessions there will be plenty of opportunities for participants to get to know themselves and each other much better.

Comment

Session 2: Setting the context

Objectives At the end of the session participants will,

- Be familiar with the course objectives, contents, methodologies, and flow of the course
- Have agreed on their role and that of the trainer
- Feel a sense of ownership over the learning process during training program

Materials

- Puzzles of training program flow on pieces on a large flip-charts
- Learning objectives of the training program written on flip-chart(s)
- Picture with "Comfort Zone" on the flip-chart
- Daily Schedule and list of logistical matters

Time 1 hour and 30 minutes

Steps

1. Explain that we are going to set the stage of this training by looking at the purpose, objectives, flow and process of the whole program. We will discuss the WHY, WHAT, HOW, WHO and WHEN in a participatory way.
2. Explain first the *why* by posting the purpose and objectives of the training program somewhere in the room where everone can see them. Leave them there for the duration of the course. Explain how these were determined and clarify any questions.
3. Explain that we will now move to the *what* of the training. Place the pile of prepared flip-charts showing the flow of the training at the middle of the room. Ask for some volunteers to put the flip-charts in the right sequence and place the flip-charts the right way so that the remaining participants can see them. Walk through the flow, and clarify participants' understanding by asking questions.
4. Explain that we will now look at *how* the training will be conducted. Ask them to guess (percentages or averages) how much adults can absorb from what they hear (20%), see and hear (40%), and from experience (80%).
5. Explain that the approach used within this course will allow participants to reflect and generate their own lessons. This means there will be very few lectures, and a lot of discussions and practicals.
6. Explain that this training event may require them to do or think about things differently from how they are used to. Usingthe flip-chart with the personal learning model on it (see the hand out), explain the different zones. At some points during the course, participants will be asked to stretch their zone of comfort. Explain that individual comfort zones are unique, so everybody will have to honestly assess for themselves if they are in their or have stretched their comfort zone.
7. Explain that the *who* is closely related to the *how* . Ask participants what they think will be the role of trainer, and their role as participants. Stress that how much they will learn during this course will depend on their own attitude and willingness to try or view new things.
8. Introduce the task assignment. To gain more interactive participation from all

participants, this course will allow participants to take responsibility in some specific tasks. The tasks are 1) social monitoring and action, 2) service provision and 3) daily feedback and recapturing lessons of the day.

9. Ask volunteers to take responsibility for, social monitoring and action, service provision and for daily feedback and recapturing lessons of the day. Clarify the task and explain that these roles will be rotated every two day so that every one will have the opportunity to contribute in different learning aspects.

- **Social monitoring and action:** the team has to monitor the dynamics of all participants and take any action to motivate social learning. The team may think of energizers to stimulate the learning atmosphere.
- **Service provision:** the team has to take the responsibility for all services that support learning process i.e. preparing materials, distributing handouts, cleaning the room, time keeping, and so on
- **Daily feedback and recapturing lessons of the day:** at the end of each day the team has to conduct an activity to gain feedback from all participants in relation to lessons learned from the day, feelings, process used in the day, or any particular issues of the days learning program. The team needs to help review key lesson learned from the day and report back in plenary the next day.

10. Distribute the summary of the training agenda and introduce briefly the *when* of the training by posting and reviewing the schedule.
11. Finish with any logististical matters relating to meals, break, certain places that participants need to know and so on.

Comment

Self-reflection

Handout

Self-reflection is an important part of self-learning, a process whereby people think for themselves and use their own experiences in order to refine their own lessons. This can lead to a personal change which may include new feelings, new insights, and new abilities, etc. This is why we will ask you to assess your own strengths and weaknesses regularly, throughout this training program.

Receiving feedback
Although we can learn a lot through self-reflection, we can learn even more about ourselves and how we behave from the feedback given to us by other people as to how they perceive us.

Observation
Another effective way to learn is by observing other people. Many good ideas about the subject may come from our friends who have gained a lot of experience.

Practicing
The most powerful way to learn, however, comes from practicing yourself. There will be plenty of opportunities to do so during this training program.

Don't panic!
Although this training course might be different from what you are probably used to, it will be much more fun because you will be actively involved in several analysis and trials. Sometimes you will be challenged to view things you have not seen before and to stretch and extend your mind. But there is no need to panic as it will be done gradually.

personal learning model

The choice is yours!
Comfort zones are very personal and only you will know if you are stretching yourself. If you are afraid of thinking about and doing things differently from what you are used to, you will not learn much. However, if you open yourself up to new ideas and methods you will learn a lot from this course.

Session 3: Expectation and Norms

Objectives At the end of the session, participants will,

- Have formulated their individual expectations about the course
- Can explain why they think their expectations will be met or why they won't be met
- Develop training norms for learning together and agree on our roles during the training

Materials

- Post-its
- Big flip chart with two columns; what we want to see and what we don't want to see
- Flip-chart with some suggested norms
- Markers

Time 45 minutes

Steps

1. Refer to the training objectives. Explain that as participants have gone through the objectives and course flow in detail, they might have specific expectations, or things they want, or don't want, to see happening in the course.
2. Distribute 4 post-its or index cards in two different colors (blue and pink). Ask each participant to write down two things they most want to see happen in the training program one on each blue card and two things they don't want to see happen one on each pink card.
3. Stress that they should try to be as specific as possible and write clearly. After each participant has finished, invite them to post the cards on the board.

What we want to see…	What we don't want to see…

4. With the help of one or two volunteers, quickly cluster these cards into expectations and norms on the white board.
5. Consider all what they want to see in this training as expectations, and what they do not want to see as what they have to agree on as norms.
6. Discuss these expectations, and what will happen and when, linking them to certain days or sessions. Explain what is beyond or what we could not achieve in the context of this training and why.
7. Reflect on the session by asking participants why they think we included this session during the first day of the training.
8. Summarize the main expectations on a flip-chart using keywords and tell participants that, at the end of the training course, there will be time to discuss which expectations were met and which weren't, and why not.
9. Explain we may want to achieve all these expectations along with the course objectives. Since most of us come from different

backgrounds and experiences, it is useful to agree on how we want to work and learn together.

10. Ask all participants to have a quick look at what we all don't want to see during the course. Explain that agreeing on certain guidelines or norms can help us to learn together. Trainers will give some examples of norms and the group will then have to come up with more. Display a number of norms one by one. Ask them if they think it is a useful norm and whether everybody agrees with it or not.
11. Ask participants to think for a couple minutes about norms they want to add and share, then add the norms, if everybody agrees.
12. Explain that as the training program evolves we can refer back to the norms to remind each other about them, or we can change them and add new ones if necessary.

Comment

1. **Linking expectations to specific sessions:** If the expectations are well formulated and specific enough, you can paste them on the agenda flow. This will clearly show participants when their expectations will be met and remind you to refer to certain expectations during different sessions in the training.
2. **Encouraging self-directed learning**: Another idea is to ask participants to paste their expectations on their own picture made during the session "Getting to know each other", to encourage them to focus and monitor their own learning during the training.
3. The trainer may use these outputs for introducing participants to new resource persons and can be referred back to it when it is appropriate.
4. The ownership of the norms is very important. If participants see them as rules forced upon them, the session will be counter productive. It is important that the participants formulate their own norms and agree together as a group. Paste the norms permanently in a visible place. If there are problems with the group dynamics during the sessions refer back to the norms or ask for suggestions about adding a new norm.

Examples of Norms:

- Everyone has the right to understand
- Any question is a good question
- Everybody should have the chance to participate
- Everybody has a responsibility to participate
- We help each other learn
- No smoking in the room

Questionnaire for reporting before training understanding of participants on climate change and REDD+

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

1. Basic understanding on climate change and REDD+

	Level of knowledge (Tick which ever is appropriate)			
	Know and can explain	Understand well, cannot explain	Only heard of but cannot explain	Never heard of
Basic concept of climate change, its causes and impacts				
Concept of climate change				
Difference between weather and climate				
Causes of climate change - green house gases effect				
Composition of the greenhouse gases				
Climate change impacts				
Link between forests and climate change				
Role of forests in the emission and absorption of green house gases				
Status of deforestation and forest degradation in Cambodia				
Drivers of deforestation and forest degradation in Cambodia				
Common strategies to reduce deforestation				
Concept of REDD+				
Basic concept and evolution of REDD+				
International and national discourse of REDD+				
3 Phases of REDD+ implementation				
Status of REDD+ in Cambodia				
Institution responsible for REDD+ implementation in Cambodia?				

Current stage of REDD+ implementation in Cambodia				
REDD+ stakeholders and analysis				
Key requirements of REDD+				
Technical requirements of REDD+: concept of additionality, permanence and MRV				
Social and environmental safeguards of REDD+				

Module 1: Forests and climate change

Session 4: Climate Change and Its Impacts

Objectives At the end of the session participants are able to,

- Explain the concept and science behind CC
- 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.

Materials

- Flip chart and markers
- Handout

Time 1 hour and 50 minutes

Steps

1. Introduce the session by explaining the session's objectives, method and required time.
2. Ask participants to think about the difference between weather and climate. Encourage all the participants to respond to the question.
3. List down the answers given by the participants.
4. Screen the documentary - Climate Change.
5. Ask participants what they have understood from the documentary. List down the responses on a white board or flip chart.
6. Present the basic science, causes, and impacts of climate change using a Power Point presentation.
7. Request all participants to write down on a meta-card one indicator of climate change experienced locally.
8. Clarify the global impacts of climate change and encourage participants to share their experience in the local context.
9. Encourage participants to raise questions for clarification and respond to them before concluding the session.

CONCLUSION

Climate change is one of the most important 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 landslide calamities; a decrease in rainfall days; an increase in the frequency of flood events, 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. Deforestation and forest degradation along with the burning of fossils fuels are some of the main sources of carbon dioxide in the atmosphere.

Comment

Climate change and its impacts

Handout

What is climate change: some general observations related to climate change:

- It doesn't rain on time, or it rains after the rainy season has passed.
- Rice cannot be planted in some areas, due to a lack of irrigation.
- In some places, there is too much rainfall whereas in others there is drought.
- Frequency of floods and droughts have increased during past few years, causing a loss of property and life
- Mosquitoes are starting to appear in the high hills.

Some experts believe the above problems are due to climate change.

Climate change can be defined as the long term changes in the average weather pattern.

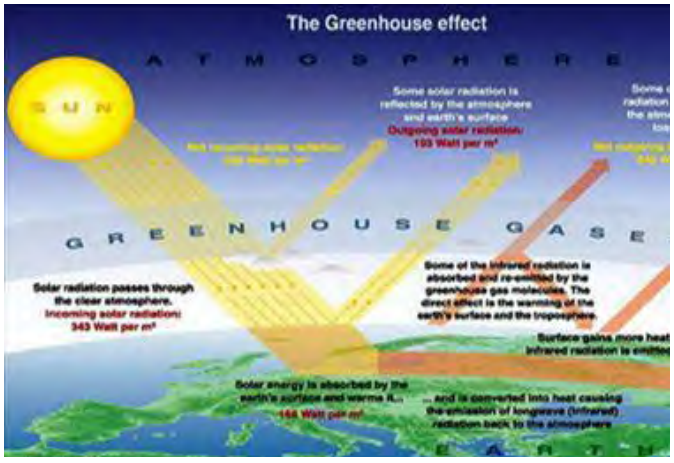
Scientists have considered the following facts as an indication of climate change: change in rainfall pattern, heavy continuous rainfall or drought, increases or decrease in average wind speed, increase in temperature, and the unpredictable of weather patterns.

Compared to 150-200 years ago, at present the climate is changing at a rapid rate. Due to the increase in the earth's atmospheric temperature, many species of plants and animals cannot cope with the changing environment. Indications of climate are already being noticed due to the increase in atmospheric temperature. The increase of greenhouse gases in the atmosphere is responsible for this increase in temperature.

Greenhouse gas effect

The atmosphere consists of various gases. It naturally consists of 78% Nitrogen, 21% Oxygen, and 1% of 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% reaches the earth's surface

Figure 1: The greenhouse effect



Out of the 70% of solar energy reaching the earth, some is absorbed by the earth's surface, a small portion by the ocean, and some is reflected back into the atmosphere and is absorbed by some of the gases in the atmosphere.

The gases which capture the heat reflected back from the surface are known as greenhouse gases (GHGs). GHGs are found naturally in the atmosphere and are essential for life on earth. In the absence of the GHGs, the earth's surface temperature would remain at minus 18 degree Celsius and under that situation the earth would not be suitable for human life and for other plants and animals to survive. However the situation now is that due to human activities these GHGs are increasing rapidly creating a situation where more heat is absorbed by these GHGs and remains in the atmosphere, hence increase in global temperature.

The main human induced GHGs responsible for climate change include:

- Water vapour
- Carbon dioxide
- Methane
- Nitrous oxide
- Ozone

Emissions of greenhouse gases are increasing due to a number of factors. Among the prominent ones includes the burning of fossil fuels (coal, oil, natural gas), 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. On top of these, the continuous growth of human population is expected to increase the demand for energy, food and goods, causing additional emissions of greenhouse gases and additional pressure on land resources, including forests. According to the latest report from UN released in June 2013, the global population at present is 7.2 billion, which is expected to increase by 1 billion by 2025 and to 9.6 billion by 2050[3].

Recent published data on emissions from deforestation by Global Carbon Project (2013), Winrock International (2012) and Wood Hole Research Center (2012) estimate that emissions from deforestation amounts to around 3 GtCo2/year and emissions from forest degradation and soils could be another 2.6 GtCO2/year during the period 2000-2010. This amounts to approximately 12 % of the global emission of greenhouse gasses.

Impacts of Climate Change

Water resources

Climate change could have a severe impact on water resources in Cambodia. Due to the increased days of heavy rainfall, problems such as flooding, landslides, sedimentation, and gravel deposition in agricultural land are increasing. In addition, water flow of both river and underground water resources are decreasing.

Agriculture

Another sector that may be significantly impacted is agriculture. Due to the increase in temperature, there will be a more favorable ecosystem in the hills for rice cultivation but due to the adverse effect on irrigation, production will not be increased.

3

Furthermore, due to floods, cutting and inundation, there will be a negative impact on the productivity of agricultural crops.

Biodiversity

Due to climate change, biodiversity will be adversely affected. If the amount of CO2 in the atmosphere doubles, it is predicted that this will affect the different vegetation types, some disappearing all together. Some other species may shift to a more suitable/cooler temperature range. In some other cases, the species which are not able to shift to different altitudes or to a more suitable environment, such as underground insects and heavy and big fruiting species will be under a major threat.

In the context of Cambodia the composition of biodiversity may change more rapidly than expected, as it is identified as one of the most vulnerable countries to climate change.

The volume of water in the wetlands will also be seriously affected. Due to increased temperature, flooding, landslides, soil erosion, and low water sources which may cause adverse effects on the extent and quality of the wetlands, which ultimately will result in the 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, Cambodia and its adjoining countries are facing problems of increasing diseases like Malaria, Typhoid. People presented with these diseases are increasing every year. Research indicates that malaria is spreading even to higher altitudes where it once was never present. In addition, there is a possibility of an increase in cholera due to increased flooding.

Livelihoods

Ultimately all the impacts that climate change may have on water resources, agriculture, water resources, biodiversity and human health will directly affect the livelihoods of human beings. Poor people from villages will especially be affected. Due to less crop production, it is hard even to collect enough to eat. As nearby water sources dry out, time is wasted collecting water, and as a result, less time can be spent on productive works. Furthermore, lack of water and food combined with temperature increases could result in malnutrition and an increase in diseases, which in turn create further physical burdens. As a result, investment in other sectors, such as education, is decreasing. In general, direct effects on livelihood due to climate change are serious issues in a country like Cambodia.

Responses to climate change

There are two main responses for global climate change:

- **Mitigation** is the intervention or policies to reduce the emissions or enhance the sinks of greenhouse gases.

- **Adaptation** is different types of responses to the changing climate (e.g., acclimatization in humans) and policies to minimize the predicted impacts of climate change (e.g., building better coastal defenses).

It is important to note that these two approaches are not mutually exclusive and that forest based climate mitigation and adaptation can be combined. For example healthy forests may not only sequester carbon but may also provide diversification in livelihood and income options for individuals and communities, especially where agricultural production is constrained by climatic events such as drought.

United Nations Framework Convention on Climate Change (UNFCCC) is the international Convention where countries negotiate on issues related to climate change, such as mitigation, adaptation, finance, technology transfer etc.

Session 5: The Role of Forests in Climate Change

Objectives At the end of the session participants are able to,

- Understand the carbon pools within a forest and the contribution of forests to the carbon cycle.
- Understand how deforestation and degradation contribute towards climate change
- Understand the role of forests in mitigating climate change.
- Gain an overview of other ecosystem services that forests provide

Materials

- Flip chart and markers
- Handout

Time 1 hour and 50 minutes.

Steps

1. Begin by explaining that we will focus on the role of forests in climate change for mitigation.
2. Explain the session plan, objectives, topics to be discussed and the time frame.
3. Probe the impacts of climate change on forests and list the responses. Clearly explain the dual role played by the forests – carbon sink as well as source of carbon dioxide.
4. Link the responses with the examples of incidences and experiences shared by the participants in the previous session.
5. Using the snow-ball method, discuss how forests help biodiversity and communities livelihood.
6. Present the carbon dioxide sequestration and emission cycle in a very simple manner. Explain the relationship between carbon and carbon dioxide in the presentation.
7. Conclude the session by explaining that forests serve both as a source of carbon emissions and a resource for carbon sequestration, and play an important role in climate change mitigation.
8. Considering the number of participants, divide them into four to five mixed groups.
9. Provide guidelines for discussion and develop a list of the services that could be gained from forests. Give 15-20 minutes for the discussions and ask them to present it back.
10. Explain the concept of ecosystem services using a presentation and encourage a discussion.

Comment

The role of forests in climate change mitigation

Handout

As more scientific information about global warming accumulates, climate change is emerging as perhaps the greatest environmental challenge of the twenty-first century. What is more, it is a virtual Pandora's box of major global threats: hunger, poverty, population growth, armed conflict, displacement, air pollution, soil degradation, desertification and deforestation. These threats are intricately intertwined with, and contribute to climate change, necessitating a comprehensive approach to a global solution. Rising to this challenge will entail unprecedented cooperation amongst the world's nations and strong support from international organizations concerned. Its domain encompasses major sources of greenhouse gases, major potential victims of climate change, and major mitigation potentials though carbon pools and "sinks".

Forests have four major roles in climate change. As mentioned earlier, forests contribute about 8-10% of the global carbon emissions when cleared or burned, overused or degraded. They react sensitively to a changing climate; they produce wood fuels as a benign alternative to fossil fuels when managed sustainably.

Before we discuss about the role of forests in climate change, let us understand a few basic concepts and terminologies frequently referred to in climate change and forest linkage discourses. These are briefly explained below:

Deforestation
Deforestation is defined as "the long-term or permanent conversion of land from forest to non-forest.

Forest Degradation
Forest degradation is defined as "the reduction in the capacity of a forest to provide goods and services". In the context of climate change forest degradation is understood as the continued loss of forest carbon over time. This could be by removing all the big trees in the forest but still without the change classified as deforestation. Normal harvesting taking place as part of sustainable forest management is not considered degradation but in practice it cannot always be distinguished over shorter periods of time through the monitoring of carbon stocks.

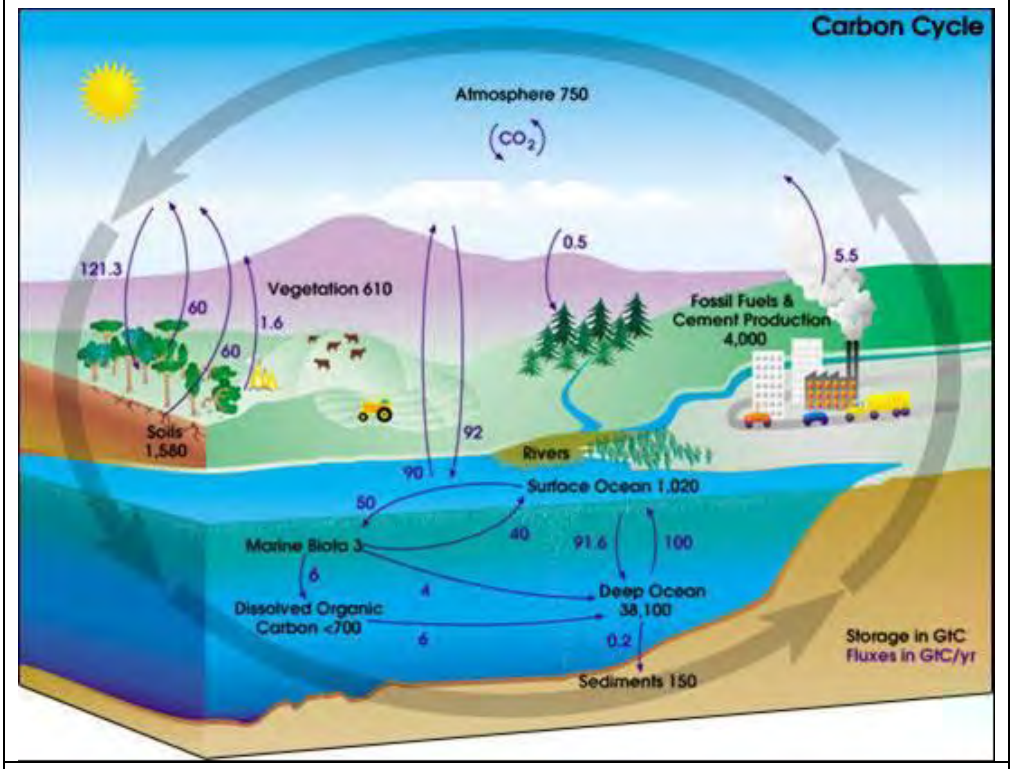
Carbon Stocks
A forest - or any ecosystem - is a set of carbon stocks. Carbon is everywhere, from the leaves to the soil. A good way to visualize a stock of carbon is to think of the biomass stored in the ecosystem. Biomass is the mass of living biological organisms in a given area or ecosystems at a given time. Almost 50% of the dry biomass is carbon. If the dry biomass of a tree is 2 tonnes, then it contains around 1 tonne of carbon.

In many forest ecosystems in tropical countries the majority of the carbon is stored in the living biomass, forest growing in swamps on peat soil are an exception as most of the carbon in these forests is stored in the soil.

Carbon flux

Plants use day light as a source of energy, leaves absorb carbon dioxide from the atmosphere and transform it through the process of photosynthesis. The products of this process are distributed to the plant and move to the litter and soil when branches or leaves fall down and decompose. The carbon dioxide is released again when the tree decomposes.

Figure 1: The Global Carbon Cycle



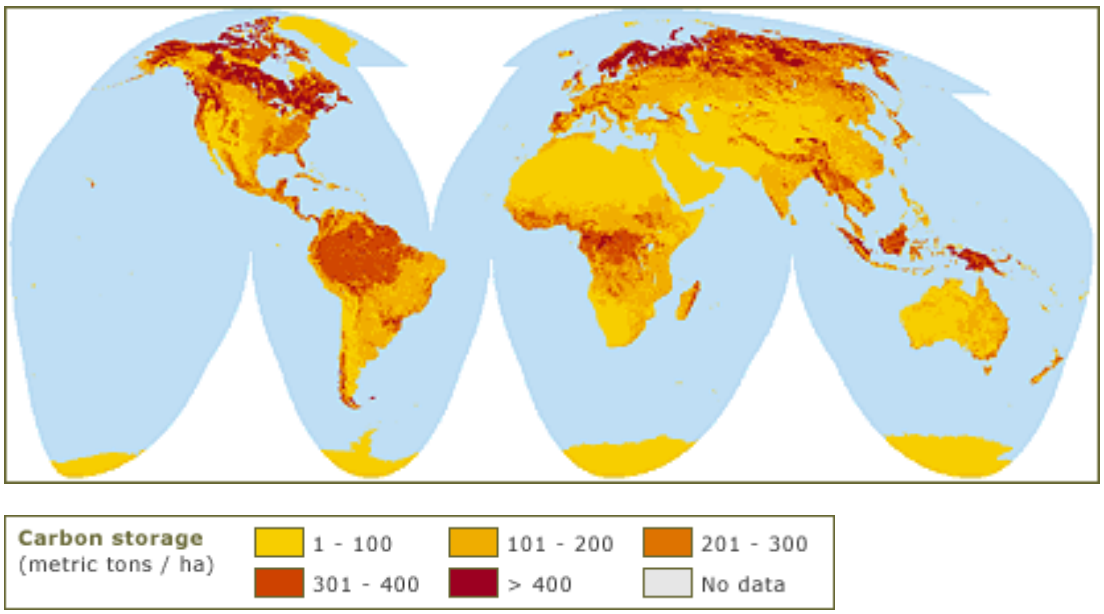
Source: NASA

Forests therefore play an important role in the global carbon cycle (see Figure 2). Currently global forests cover 31% of the world's land surface or just over 4 billion hectares[4]

According to the World Resources Institute, forests store approximately 40% of the total carbon stored in above ground in terrestrial ecosystems. The image below shows global carbon storage in above and below ground live vegetation and soils.

(WRI http://earthtrends.wri.org/maps_spatial/maps_detail_static.php?map_select=227&theme=3).

[4] United Nations Food and Agriculture Organization (FAO) Global Forest Resources Assessment 2005



Forest carbon pools (Source: ipcc, http://www.ipcc.ch/ipccreports/sres/land_use/index.php?idp=131)

The common carbon pools in a forest are, above and below ground living biomass, dead wood, litter and soil carbon

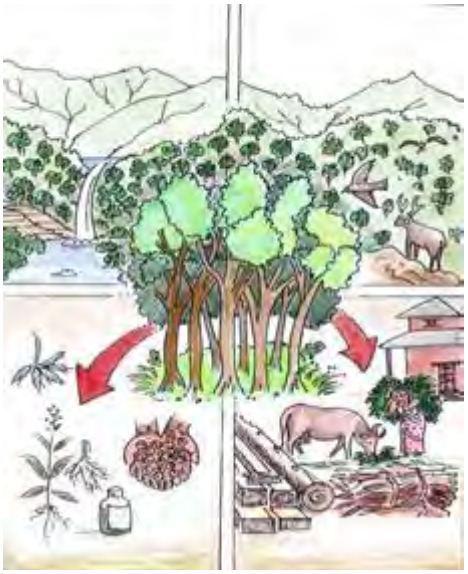
Living biomass: Aboveground (stems, branches, leaves, flowers, and fruits) and below-ground (roots) living biomass will sequester carbon at a rate and to a total magnitude that depends on species, climate, and site quality. Even if forests are allowed to continue to grow, carbon stock in living biomass will eventually reach a maximum. It takes at least decades and more commonly centuries for forests to reach their maximum carbon storage potential. That carbon storage potential also depends on the level of forest management and natural disturbances. The living biomass carbon in areas where new forest is created will increase. If below-ground living biomass is not included in the accounting of deforestation, emissions to the atmosphere would be underestimated. In afforestation or reforestation, sequestration rates would be under estimated.

Litter and debris: Following the creation of new forest, carbon in litter and woody debris (dead organic matter) increases over time. In deforestation, large amounts of debris are usually generated at the time of tree-felling. Amounts remaining on the ground may be low if logging debris is burned or removed from the site but can be substantial if debris is simply retained on site or if trees are not felled but simply killed by chemical injection.

Soil: On previously cultivated land where new forest is created, soil organic matter is expected to increase for decades to centuries (O'Connell and Sankaran, 1997). Soil organic matter will decrease rapidly following deforestation if land is subsequently cultivated. Changes in soil organic matter are likely to be small if the soil is not cultivated.

Ecosystem services

Various kinds of materials and services that are useful for human life are available from forests and other ecosystems. Communities living near watershed areas have been using and selling different forest products (such as firewood, fodder/forage, timber, medicinal herbs) for centuries. In addition, many other indirect services also have been available. For example, forests in watershed areas help to prevent soil erosion and increase the sources of water. From this, the communities living downstream of the watershed see a number of important benefits. Similarly, the conservation and management of forest resources helps in conserving and enhancing biodiversity. In addition, as the forests and ecosystems provide natural beauty it also helps to promote ecotourism.



Forests also play an important role in minimizing the impact of climate change by sequestering atmospheric carbon dioxide that is stored as biomass. Realizing the importance of such environmental services to human life, Payment for environmental services has been initiated in numerous studies.

According to the research conducted by Wunder in 2005, the following ecosystem services are can be managed under Payments for Ecosystem Services:

- Carbon sequestration and stock.
- Watershed services.
- Biodiversity services.
- Natural beauty.

Session 6: Deforestation and forest degradation in Cambodia

Objectives At the end of the session, participants are able to

- List the drivers of deforestation and forest degradation in Cambodia.
- Present and discuss Cambodia's land use change scenario and statistics
- Discuss the past and present scenario of deforestation and degradation in Cambodia (including policies)

Materials

- Markers and post-its
- Color pens and pencils
- PowerPoint presentation

Time 1hour and 30 minutes

Steps

1. Start the session by clarifying the objectives, contents and methodology.
2. Facilitate interaction amongst the participants using a PowerPoint presentation focusing on land use change and deforestation and forest degradation Cambodia.
3. Ask participants to form three groups, perhaps based on geographical representation 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.
4. Encourage participants to analyze the root causes of deforestation and forest degradation.
5. 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.
6. Summarize the findings of the groups work. Ask participants to raise questions for clarification and a respond accordingly.

Comment

Deforestation and Forest Degradation in Cambodia

Handout

Driver of Deforestation in Cambodia

Cambodia is classified as a 'high forest cover, high deforestation' country[5], with approximately 10.7 million hectares of forest in 2006, and an annual deforestation rate of 0.8 between 2002 and 2006[6] (approximately 379,485 hectares of forest were lost during this period). Deforestation is driven by a complex set of process, including:

- improvements in accessibility to remote forest areas encouraged initially by a rapid increase in commercial logging activity in the 1990s, which ceased when the Government declared a logging moratorium in 2002, and more recently by road-building projects;
- uncertain land tenure, which encourages land-grabbing based on squatters rights which are even thought illegal under Land Law (2001)
- lack of government capacity in remote areas to adequately manage forests, which are state public property under the Forestry Law (2002), Protected Area Law (2008) and Land Law (2001);
- a rapid increase in agricultural expansion and other large-scale development activities, which lead to widespread clearance of some areas, this is usually driven by declaring Economic and Social Land Concessions (ELCs and SLCs);
- increasing regional and global demand for raw materials; and
- rural poverty, which is still widespread in Cambodia. The majority of the rural poor are dependent on forest resources for a portion of their livelihoods.

Escalating development pressure, in particular for land ELCs and SLCs, has caused a rapid increase in the rate of deforestation since 2004-2005, suggesting that Cambodia's baseline deforestation rate is probably now much greater than 0.8%. This in turn is leading to greater pressures on gazetted protected areas and protected forests, with parts of some areas being degazetted in recent years. Given the increasing opportunity costs of forest conservation, in comparison with alternatives such as ELCs and SLCs, justifying forest programs requires demonstrating that forest can deliver substantial economic and social benefits to Cambodia.

[5] Griscom, B., Shoch, D., Standley, B., Cortez, R. and Virgilio, N. 2009. Sensitivity of amounts and distribution of tropical forest carbon credits depending on baseline rules. Environmental Sciences and Policy 12:897-911.

[6] Forestry Administration, 2007. Forest Cover Changes in Cambodia, 2002-2006. Paper Prepared for the Cambodia Development Cooperation Forum. Forestry Administration, Phnom Penh.

Drivers of deforestation and forest degradation identified through the REDD+ Roadmap

	Within the forest sector	Outside the forest sector
Direct	• Unsustainable and illegal logging; • Fire (role disputed); • Unsustainable woodfuel collection.	• Clearance for agriculture; • Expansion of settlements; • Infrastructure development;
Indirect	• Lack of demarcation of forest areas; • Low institutional capacity and weak policy implementation; • Inadequate forest law enforcement; • Weak forest sector governance – Low levels of stakeholder participation and involvement; – Lack of transparency and accountability; – Inadequate assessment of social and environmental impacts • Lack of sustainable or alternative supply of wood and timber, including for wood energy to meet demand; • Demand for wood energy for domestic and industrial use; • Low efficiency of wood conversion and use for construction, energy production, etc. • Lack of incentives promoting sustainable management of forests; • Lack of finance to support sustainable forest management activities by line agencies, local authorities and local communities	• Population increases; • Poverty; • Rising incomes and demands for resources; • Increasing accessibility of forest areas; • Low agricultural yields; • Migration into forest areas; • New settlements, including in border areas; • Large-scale agro-industrial developments (including economic and social land concessions and other concessions); • Land speculation; • Regional demand for resources; • Poor ESIA regulations and lack of implementation • Governance – Weak forestland tenure – tenure is weakest in forests and other areas outside residential or farming zones; – Land grabbing; – Weak enforcement of the law – Limited implementation of land registration (private and state) – Insufficient implementation of land-use planning; – Overlapping/unclear jurisdictions; • Social norms (claiming land through utilisation); • Economic benefits provided by sustainable management of forests at the national level often appear lower than alternative land-uses; • Opportunity costs of sustainable management of forests at the local level; • Low awareness of environmental roles of forests.

Session 7: Managing forests sustainably

Objectives At the end of the session participants are able to

- Consider options to manage forests sustainably and in a way that stops or reduces the causes of deforestation and forest degradation (explored in Session 6)
- Understand the need to achieve a zero net loss of carbon from the forest while still maintaining social and economic services for local people.

Materials

- Flip chart
- Marker pens
-

Time 1 hour and 15 minutes

Steps

1. Introduce the session by explaining the discussion during this session will build upon the outcomes from Session 6
2. Explain that there are three broad strategies generally used to reduce deforestation:
    - Forest Protection
    - Sustainable Forest Management
    - Payment for Environmental Services
3. Break the group into smaller groups of 4 to 6 people and ask each group to consider their forest areas and ways to reduce deforestation and degradation. Ask each group to respond to the following questions:
    - What strategies are currently in place to reduce deforestation and degradation?
    - Which of these strategies are working and why?
    - Which of these strategies are not working and why?
4. Allow approximately 45 minutes for the group discussion and once the groups have completed the task ask each of them to report back their findings in the plenary.
5. Draw out a discussion on:
    - Some of the common reasons for success and failure.
    - Whether the strategies in place are actually dealing with the underlying root causes identified in session 6 or the more direct or immediate causes.
    - Conclude the session by asking participants whether they think the management of forests they are familiar with is 'sustainable' and what implications there are for any livelihood development?

Comment **Preparation:**

- Prepare a flip chart on: Common Forest Management Strategies to Reduce Deforestation

Common Strategies to Reduce Deforestation and Forest Degradation

Handout

A number of steps are taken to reduce deforestation and forest degradation. Some of these are discussed below:

Outside the forest

Addressing drivers of deforestation outside the forest

Expansion of agricultural areas into forest remains the single most significant direct driver of deforestation in the world. This can be for large scale agriculture or small scale subsistence agriculture. Expansion of urban areas and infrastructure, roads, dams and mining are other important drivers of deforestation. The global population is expected to reach 9 billion by 2050 which will add additional pressure on forest resources. In South East Asia alone the population is expected to increase from 593 million in 2010 to 759 million in 2050[7].

To address these drivers there is a need for, improved and integrated land use planning, a more efficient use of resources, increased agriculture resilience and productivity, reduced waste, and increased recycling. This will require investment at the national and local level and the transfer of technologies to within many different sectors including agriculture.

Inside the forest

Forest Protection: The establishment and management of national parks, or protected areas or the zoning of forest areas based on utilization. Areas of significant and/or threatened ecosystems are 'reserved' and strategies put in place to monitor and properly manage the ecological integrity of the reserved area. People are generally excluded from the 'protected forest'.

Sustainable Forest Management (SFM) The stewardship and use of forests in a way that maintains their biodiversity, productivity, regeneration capacity and their potential to fulfil relevant ecological, economic and social functions, without causing damage to other ecosystems (FAO definition).

SFM achieves a balance between the needs of people and the long term conservation of the forest's health and ecological integrity.

It may incorporate many approaches, such as community forestry (Community Protected Areas, Community Fisheries, Community Forests, etc.), forest zoning for multiple use and reduced impact logging.

[7] Turn down the heat. World Bank 2013.

Payment for Environmental Services (PES): PES are a variety of market based arrangements between buyers (those receiving the benefit from environmental services, i.e. urban people who want clean drinking water) and willing sellers (those managing the environmental service, i.e. upland communities farming and living near the water source).

Module 2: Introduction to REDD+

Session 8: Introduction to REDD+

Objectives At the end of the session participants are able to

- Understand the basic concept of REDD+
- Have identified key concepts that they collectively agree on which accurately describe REDD+.

Materials

- Half sheets of flip
- Chart or colored paper for each participant
- Markers and post-its
- Color pens and pencils
- A short video that explains the concept of REDD+

Time 2 hours

Steps

1. Explain that there are likely to be different interpretations of REDD+ within the group and that this session will aim to facilitate a mutual understanding of some of its core concepts.
2. Give each participant a half sheet of flip chart paper. Ask them to take some time to reflect and then draw or make a visual representation of what they consider REDD+ to be. Explain you are not looking for brilliant artists but for the moment you would like them to express their ideas through pictures so they can see the emphasis of their ideas. Mention that this exercise is not for testing how much they understand about REDD+, but rather exploring how they perceive REDD+ in their own ways. Give participants ten minutes to draw their visual representation.
3. After drawing, ask them to form spontaneous groups with at least three other people and share their drawings, comparing them and discussing how and why they are similar or different.
4. Once the people in the small groups have shared their pictures, ask them to paste them on the wall or board and tell them that you would now like them to develop a written statement of no more than 25 words, using every day words (not jargon) defining REDD+. This statement should be based on the ideas they have found in their own pictures. Give the groups no more than 15 minutes for this exercise.
5. After they have developed the statement, tell them to paste it on the walls or board near the pictures.
6. Ask each group to then visit the other groups' outputs, looking for linkages between the pictures and the statements and giving comments or asking questions on post-its.
7. After each group has visited all the other groups, ask them to return to their original output and respond to the post-its. Give them each two minutes to respond. Make sure they are focused on a response, not on describing the pictures.
8. After the groups have all responded ask the following reflection questions:
   - Were all the groups the same or different? What were the key differences?

- Why did these differences emerge?
- What are the key elements agreed on by all the participants?
- If yes, why? If no, why not?

9. Bring the participants back into plenary form and present a summary of the key elements in their pictures (, multiple benefits and incentives in form of payments for performance, actions to enhance and maintain forest cover and condition, addresses climate change, , other socially desired outcomes as spin offs, sustainable forest management etc.)
10. Presentation on REDD+ as a National level Programme (from UN-REDD+ Taskforce Secretariat)

Comment

REDD+: An Introduction

Handout

Introduction: REDD and REDD Plus

Scientific evidence has proven 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 Plus?

R= Reducing
E=Emissions from
D=Deforestation and
D=Degradation
+
Conservation of forest carbon stocks,
Sustainable Management of Forests, 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.

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 evolved to REDD plus (REDD+). The scope of REDD was previously limited to only deforestation and forest degradation, while REDD+ also includes conservation, sustainable management of forest and increases in forest carbon stocks.

Evolution of REDD+ and its Challenges

Originally REDD+ was 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 the concept of REDD and REDD+ evolved and how does it continues to expand.
- How could REDD+ contribute to the improvement of the livelihoods, biodiversity conservation, and the equitable and sustainable development of society; and

- 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 and sequestration 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 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 two developing nations-Costa Rica and Papua New Guinea in 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 those from deforestation and forest degradation.

A report authored by British economist Nicholas Stern in 2006 concluded 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 Emission from Deforestation and Forest Degradation (i.e., REDD).

The COP-16 meetings formally endorsed REDD+ in December 2010. The following activities are included in the current REDD+ concept.

- Reducing carbon emissions by stopping deforestation
- Reducing carbon emissions by stopping forest degradation
- Conservation of forest carbon stocks Sustainable management of forests and
- Enhancing forest carbon stocks

The technical details on REDD+ implementation is being developed further through the annual meetings of the UNFCCC. This concerns forest monitoring systems, reporting on safeguards, establishment of reference levels, measuring, reporting and verifying (MRV), payments, non-carbon benefits etc. Following decisions taken at COP-19 in Warsaw 2013 we now have all the necessary technical and policy decisions to allow

REDD+ implementation and assessment of results expect for decisions related to financing and the conditions this will entail.

Evolution of REDD+

Date	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 the climate change and mainstream the developing countries in climate change mitigation endeavor through reducing emissions from deforestation (RED).
2006	• UNFCCC's Subsidiary Body for Scientific and Technical advice (SBSTA) presented a technical study and its recommendation regarding the Stern report. It was supported by 8 countries. • It was agreed to initiate a discussion on the necessary rules and methods for REDD to present at the COP-13 meeting in Bali in 2007.
2007	• In discussions during COP-13 in Bali of Indonesia the first COP decision on REDD activities was made which called for demonstration activities as well as financial support for these activities. • World Bank launches the Forest Carbon Partnership Facility to support REDD preparation and capacity building in developing countries. Similarly, the three UN organizations UNDP, UNEP and FAO launched UN-REDD a joint programme to support countries readiness efforts.
2008	• Countries like Norway, England and Germany announced 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 Congo Basin Forest Fund, Amazon Fund etc. • A few developing countries began their involvement in the REDD readiness phase.
2009	• COP-15 in Copenhagen, Denmark, an agreement was made on methodological issues relating to REDD+ highlighting the use of IPCC Guidelines in the estimation of emissions and removals from the forest sector.
2010	• During COP-16 in Cancun, Mexico the Cancun Agreements were decided upon, these included five activities under REDD+ and seven safeguards which have to be addressed and respected, and countries were requested to develop National REDD+ Strategies, National Forest Monitoring Systems, Forest Reference Emission Levels and Forest Reference Levels as well as a system to provide information on the safeguards,
2011	• During COP-17 in Durban, South Africa a decision was reached on guidance for the establishment of Forest Reference Emission Levels and Forest Reference Levels and countries were invited to submit proposed reference levels to the UNFCCC. • During COP-17 a decision on guidance on systems for providing information on how safeguards are addressed and respected was

Date	Achievements
	reached. Regarding REDD+ financing the COP decided that safeguards shall be addressed and respected regardless of the source or type of financing.
2013	• COP- 19 in Warsaw, Poland decisions were reached on the following items: 1. Addressing the drivers of deforestation and forest degradation. 2. Modalities for national forest monitoring systems 3. The timing and the frequency of presentations of the summary of information on how all the safeguards are being addressed and respected 4. Modalities for measuring, reporting and verification (MRV) 5. Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels 6. Coordination of support 7. Result based financing

Why do Both Developed and Developing Countries have an interest in REDD+?

Avoiding dangerous climate change is the ultimate objective of the UNFCCC[8]. Countries agree that according to the principle of common but differentiated responsibilities and capabilities developed countries need to make the largest efforts. With a majority of global emissions now taking place in developing countries there is a considerable interest in supporting developing countries to mitigate climate change by following low carbon development strategies, building efficient energy systems, reducing emission from deforestation, etc. In many cases this can also be the most cost effective approach to reducing emissions of greenhouse gasses.

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. However, there are number of issues yet unresolved with regards to, quantifying carbon emissions from the forestry sector, setting up baselines in order to record the reduction in emission levels, and related technical capacity.

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.

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) receiving economic benefits from forest. Therefore, to control deforestation, we have to convince all stakeholders

[8] Article two of the United Nation Framework Convention on Climate Change.

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 of key 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 REDD+ could be financed in the future: fund-based or market-based or a combination of the two. Debates about the appropriate way to finance continue and are linked to the negotiations on a global climate change agreement.

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 of carbon emissions from deforestation by 2030.

Until now most support has been provided through multilateral and bilateral support as traditional development assistance. According to the REDD+ Partnership Voluntary REDD+ database report from 2012 this amounts to 6,27 Billion USD in the period 2006-2022. It has to be noted through that most donors are not able to allocate funding more than one or two years ahead, so very few countries have data beyond 2015.

REDD+ Investment Mechanisms

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

A. Fund-Based Mechanism

Countries could provide funding to a fund based mechanism . For instance, funding for this could come from auctions from the Emission Trading Scheme of the European Union, a levy on aviation or other sources. The Green Climate Fund could be an important tool in this regard. 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 emission reductions achieved.

B. Market-Based Mechanism

Countries and industries in-countries having emission reduction commitments under the UNFCCC could invest under this mechanism offsetting their obligations to reduce greenhouse gas emission. The most appropriate mechanism for REDD+ investments is still under debate. There is no straight forward recommendation. Both mechanisms have advantages and disadvantages.

Some arguments for and against fund-based mechanism and market based mechanisms are shown below:

1) Offsetting does not reduce emissions it only moves the effort from one place to another, so the net benefit for the atmosphere is zero. Furthermore if there are concerns about additionality and permanence then the net climate benefit could even be negative.
2) Offsetting will allow additional efforts due to the more cost effective approach. Emission reduction will happen were they are cheapest to achieve.
3) The flow of REDD+ credits is unpredictable and could lead to a low carbon market price where other sectors don't have an incentive to do anything. This could mean that developed countries have no incentive to do mitigation at home.
4) Carbon markets are the most efficient way to raise the necessary finance. A fund approach will have lots of difficulties in doing this.
5) Forest ecosystems should not be subject to unpredictable financing like carbon market financing.

Which of these concerns are more important depends who you ask. In practice one solution could be to have different sources of finance depending on the preference of the country and the availability of funds.

REDD+ in the Context of Cambodia

Five activities are eligible under the REDD+ in developing countries (para. 70 Decision 1/COP-16):

a) Reducing emissions from deforestation

b) Reducing emissions from forest degradation

c) Conservation of forest carbon stocks

d) Sustainable management of forests

e) Enhancement of forest carbon stocks

Countries can focus on activity/ies most applicable to their national circumstances, but need to justify their decision in the event that they choose to omit one or more activities from their National Strategy.

•National mechanisms (subnational only as an interim measure)

•Voluntary participation

Cambodia is facing a challenge to control deforestation and forest degradation. To benefit from REDD+, Cambodia should address these difficulties and clarify various issues, a National REDD+ Strategy, a national system of safeguards, benefit distribution mechanism, a system for monitoring, measuring, reporting and verification of carbon dioxide emissions, and specific legal provisions.

The aim of UNFCCC REDD+ is to implement REDD+ at the national scale. Cambodia's Carbon dioxide emissions from deforestation and forest degradation as well as sequestration from establishing new forests will have to be assessed at the country level and funds will be received according to performance in terms of emissions

reductions. Therefore, a country wide strategy, involving multiple stakeholders and sectors will have to be developed leading to improved land-use practices that will enable Cambodia to benefit from REDD+.

If Cambodia is to progress effectively and efficiently with REDD+ it is important that information and lessons learned from the existing pilot projects is shared as well as any information from implementation of REDD+ at different scales in other countries are analyzed to help shape the decisions on how to move forward with REDD+ in Cambodia[9].

It will be good to adopt the provisions of REDD+ for Cambodia if it both meets the current needs of and provides multiple benefits to local communities, indigenous peoples, and women; and promotes more sustainable management and conservation of forests and biodiversity resources, and more effective land management.

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+. If such issues are addressed, there is a high chance for REDD+ to succeed in Cambodia. The following are some key questions regarding implementation of REDD in Cambodia, which will be discussed in more detailed 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, measured, 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?

[9] UN-REDD+ Taskforce Secretariat Terms of Reference fore REDD+ Demonstration Team, 2013

Sessions 9: National level initiatives on REDD+ process

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

- Understand the fundamental principles and differences between the three phases of REDD+ implementation:
- Understand and explain the existing legal and institutional structures of REDD+ implementation.
- Understand the status of REDD+ readiness of Cambodia.
- Be aware of the ongoing pilot initiatives for REDD+ and their objectives.

Materials

- Brown paper, marker
- pen, masking tape,
- meta-cards.

Time 3 hours

Steps

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

Comments Preparation:

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

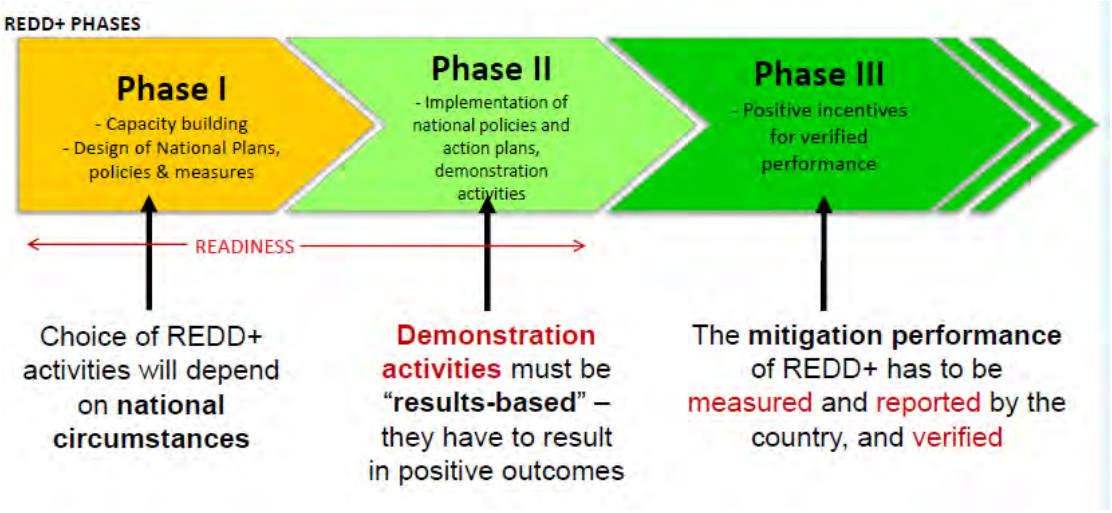
The three phases of REDD+

Handout

Source: UN-REDD Programme

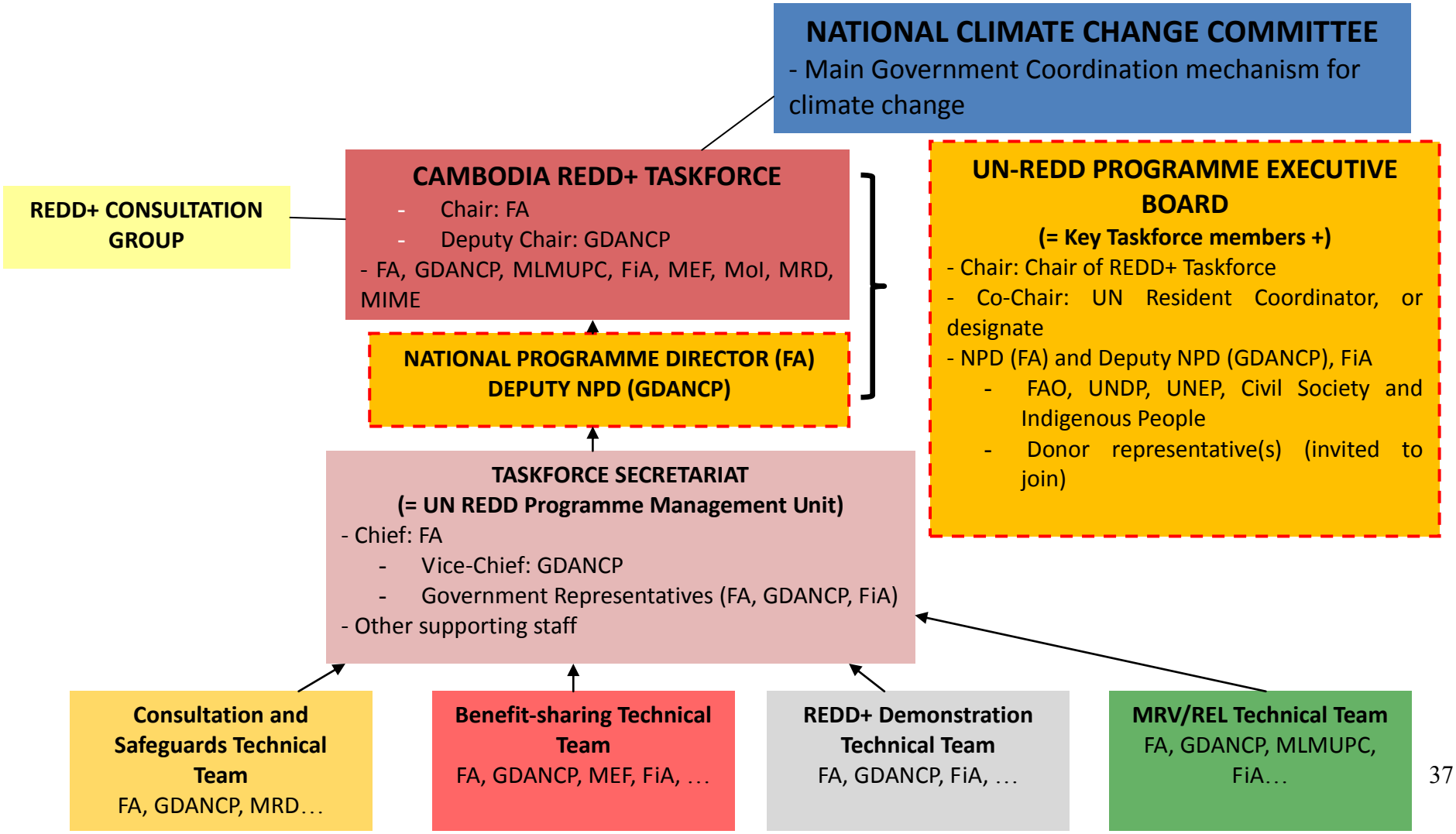
- REDD+ will be implemented through **policy approaches & positive incentives**
- REDD+ should be implemented in **three phases**
- ·Countries should develop the following elements:
  - A **national strategy** or **action plan**
  - Forest reference emission levels and forest reference levels – **RELs/RLs (performance benchmarks)**
  - A **national forest monitoring system**
  - A **safeguards information system** (seven REDD+ safeguards)
    Countries should address; **drivers** of Deforestation & Degradation, **land tenure** issues, **forest governance** issues, **gender** considerations and REDD+ **safeguards**

There are three phases in REDD+ implementation as shown in the figure below:



Structure of REDD+ in Cambodia

Handout



REDD+ Programme (source: http://www.cambodia-redd.org)

The structure of the REDD+ Programme consists of various groups and Technical Teams that through development of the REDD+ roadmap have been decided upon to ensure inclusivity and transparency in the REDD+ Readiness process in Cambodia. These are detailed below

The Cambodian REDD+ Taskforce

The Cambodia REDD+ Taskforce was established by Decision on Establishment of Cambodian REDD+ Taskforce, No. 87 of the Ministry of Agriculture Forestry and Fisheries (MAFF), dated February 26th, 2013.

The REDD+ Taskforce will act as the primary coordination and decision making body across government.

The mandate of the Taskforce is to:

- Manage and Coordinate a process of strategies and term of reference (ToR) for implementation of a project
- Manage and Coordinate the implementation of the programmes
- Coordinate and make decision for pilot project implementation
- Monitor results of project to ensure they are consistence with current context of Cambodia
- Report of project implementation to Minister of MAFF every month

The Taskforce is chaired by the Deputy Director General of Forestry Administration (FA), and vice-chaired by the Deputy Director General of General Department of Natural Protection and Conservation (GDANCP) of Ministry of Environment (MoE). Other members of the Taskforce are:

- Deputy Director General of Local Administration of the Ministry of Interior (MoI)
- Director of Department of Property of the Ministry of Economy and Finance (MEF)
- Deputy Director General of General Department of Energy of the Ministry of Industry, Mines, and Energy (MIME)
- Director of Department of Rural Water Supply of the Ministry of Rural Development (MRD)
- Acting Director of Department of Aquatic Conservation of the Fisheries Administration (FiA)
- Technical Deputy Director General of the Ministry of Environment
- Director of Department of Wildlife and Biodiversity of Forestry Administration
- Manager of Property of State Conservation Office, Department of Land Conservation of General Department of Land and Geography of Ministry of Land Management Urbanization and Construction (MLMUPC)

REDD+ Taskforce Secretariat

The REDD+ Taskforce Secretariat (RTS) is the principle operational unit of the Cambodia REDD+ Programme, providing a central hub for management of activities. The RTS will be based within the FA and will have staff assigned to it from the FA, GDANCP and FiA as well as long-term consultants recruited by Developments Partners.

REDD+ Consultation group

The REDD+ Consultation group (CG) was proposed in the Cambodia REDD+ Readiness Roadmap as a body that would provide comments to the REDD+ Taskforce (TF) on the REDD+ Readiness process and provide a forum to represent the views of different stakeholder groups. It is intended to be responsible for providing a link between the Cambodia REDD+ Programme and existing networks of stakeholder groups.

The CG consists of 18 members, made up of 2 members representing each of nine stakeholder groups. These groups were derived from the Roadmap and UN-REDD Programme document, and based on further discussions with stakeholders. The nine groups are:

- Academia
- International organizations
- National NGOs
- Indigenous Peoples
- CSO
- Private Sector
- Community Forest Groups
- Community Protected Area Groups
- Community Fishery Groups

Benefit Sharing Technical Team

An essential component of being REDD+ ready is to have in place a system of distribution of positive incentives (or "benefits") received for results achieved in terms of reduced emissions or enhanced removals which can be reported and verified following an UNFCCC process yet to be decided through the international negotiations. Benefits can be understood as both monetary and non-monetary benefits including improved rights and continued access to resources.

Such a system should share benefits in a manner that is equitable, provide incentives to participates, is transparent, and cost-efficient. Such a system needs to take account examples of benefit distribution currently or previously applied in Cambodia, but also the possible consequences of moving from demonstration projects financed via the voluntary carbon marked to a sub-national approach as an interim measure towards national implementation under the UNFCCC framework.

The objective of the Technical Team is to ensure that lessons and experiences from current or previous benefit sharing systems in Cambodia are adequately assessed in the context of REDD+ requirements; and that lessons from similar analyses in other countries are integrated to develop recommendations for a REDD+ benefit sharing system in Cambodia.

Membership will consist of representatives from:

- One representative from the Ministry of Interior (General Department of Local Administration).
- One representative from the Ministry of Industry Mine and Energy (General Department of Energy).
- One representative from the Ministry of Rural Development

- One representative from the Ministry of Economic and Finance.
- One representative from FA (relevant offices) ,
- One representative from GDANCP (relevant offices)
- One representative from FiA(relevant offices)
- Three CG members with skills and experience within relevant technical areas nominated by the Consultation Group.
- Up to two members of the REDD+ Taskforce Secretariat to be nominated by the Head of the REDD+ Taskforce Secretariat.

Safeguards Technical Team

Safeguards for REDD+ are included in the Cancun Agreements to ensure that REDD+ actions do not cause negative social or environmental impacts. Safeguards can be broadly understood as policies and measures that aim to address both direct and indirect impacts on communities and ecosystems, by identifying, analyzing, and ultimately working to manage risks and opportunities. If designed and implemented appropriately, safeguards can help REDD+ provide a suite of multiple benefits. While safeguards can be viewed as the "do no harm" principle, the idea of multiple benefits provides opportunities for benefits to be gained beyond what would have been the status quo when undertaking REDD+ activities. For example REDD+ related activities not only protect a forest area they also help to improve the quality of water flowing into nearby rivers and reduce the risk of flash flooding from rapid run off.

The Cancun Agreements on REDD+ contains an appendix listing seven safeguards which should be addressed and respected throughout the implementation of REDD+, and the REDD+ agreement reached at COP-17 in Durban provided further guidance on systems to provide information on how the safeguards are addressed and respected.

Each country must develop nationally appropriate systems of social and environmental safeguards and approaches to capture multiple benefits that are consistent with international agreements. Such a process will involve extensive consultative processes so as to achieve public acceptance in minimizing social, environmental and governance risks while avoiding too high a cost of implementation.

Stakeholder participation is also one of the safeguards in the Cancun Agreements.

The objective of the Technical Team is to support the assessment of and development of approaches to safeguards including stakeholder consultation and participation within the Cambodia REDD+ Programme.

Membership will consist of representatives from:

- One representative from the Ministry of Interior (General Department of Local Administration).
- One representative of the Ministry of Industry, Mine and Energy (General Department of Enegy)
- One representative of the Ministry of Rural Development.
- Two representatives from FA,
- One representative from GDANCP ,
- One representative from FiA

- Three CG members with skills and experience within relevant technical areas nominated by the Consultation Group.
- Up to two members of the REDD+ Taskforce Secretariat to be nominated by the Head of the REDD+ Taskforce Secretariat;

REDD+ Demonstration Technical Team

The aim of UNFCCC REDD+ is to implement REDD+ at the national scale but allows at the same time for implementation of REDD+ at a subnational scale as an interim measure while progressing towards national implementation. At the same time a number of carbon standards often referred to as the voluntary carbon market have rules and modalities for implementation on the project level. All of the three approaches have different challenges and opportunities and countries need to analyze and decide on the best approach taking the national circumstances and capacities into account.

If Cambodia is to progress effectively and efficiently with REDD+ it is important that information and lessons learned from the existing pilot projects is shared as well as any information from implementation of REDD+ at different scales in other countries are analyzed to help shape the decisions on how to move forward with REDD+ in Cambodia.

The objective of the Technical Team is to ensure that lessons and experiences from pilot projects are captured and analyzed with a view to support the move towards the development of sub-national approaches as part of a national Cambodia REDD+ Programme. The team should support the development of guidelines for possible REDD+ sub-national approaches as part of a nested approach in a national framework including recommendations for demonstration sites.

Membership will consist of representatives from:

- One representative from the Ministry of Interior (General Department of Local Administration).
- One representative of the Ministry of Industry, Mine and Energy (General Department of Energy)
- One representative of the Ministry of Rural Development.
- One representative of the Ministry of Land Management, Urbanization and construction.
- One representatives from FA (relevant office),
- One representative from GDANCP (relevant office) ,
- One representative from FiA (relevant office)
- Three CG members with skills and experience within relevant technical areas nominated by the Consultation Group.
- Up to two members of the REDD+ Taskforce Secretariat to be nominated by the Head of the REDD+ Taskforce Secretariat;

Measurement, Reporting and Verification (MRV) / Reference Emission Level (REL) Technical Team

An essential component of being REDD+ ready is to have in place a system following transparent and coherent methodological rules for monitoring and information-sharing. This system encompassed two functions to monitor outcomes of REDD+ activities: 1. a Monitoring function and 2. A Measurement Reporting and Verification (or "MRV") function.

a) **Monitoring** function
For REDD+, monitoring systems are required to assess forest areas and monitor forest area change over time in order to assess whether REDD+ is resulting in net positive outcomes. Cambodia can also use the systems for domestic uses, e.g. to evaluate a reforestation policy

b) **MRV** function
For REDD+, to **Measure** the emissions & removals coming from forests and land use change, to **Report** these emissions (or mitigation performance of REDD+ activities) to the UNFCCC through its national management system, and to make the emissions inventory available for review by the UNFCCC to undergo **Verification**.

In order for the system to be result-based, emissions & removals coming from forests and land use change under the five activities eligible under REDD+, are compared to a specific baseline; **Forest Reference Levels (RL) or Reference Emission Levels (REL)**.

The objective of the MRV/REL Technical Team for REDD+ is to ensure that the relevant technical capacities are built within REDD+ Taskforce institutions and the REDD+ taskforce secretariat, key technical components (under REDD+ taskforce secretariat) are established for the functioning of a transparent, consistent and accurate Monitoring, MRV and REL system.

Membership will be limited to .members, and consist of representatives from:
- One representative from each relevant offices within line ministries (i.e.MAFF, MoE, MoLMUPC, etc.) to be nominated by the line agencies.
- One representative of the Ministry of Industry, Mine and Energy (General Department of Enegy)
- 5 CG members with skills and experience within relevant technical areas nominated by the Consultation Group.
- Up to two members of the REDD+ Taskforce Secretariat to be nominated by the Head of the REDD+ Taskforce Secretariat.

National Climate Change Committee (NCCC)
The RGC established the National Climate Change Committee (NCCC) in 2006. The NCCC comprises senior policy-makers from 20 ministries and serves as a policy-making body that coordinates the development and implementation of policies, plans, and measures to address climate change issues within Cambodia. The Prime Minister accepted the position of the Honorary Chair of the NCCC by Sub-decree #174 dated 14 October 2009.

Forest management structure in Cambodia

Handout

Source:: Cambodia Readiness Preparation Proposal, 2011

Forestry Administration, Ministry of Agriculture, Forestry and Fisheries: Permanent Forest Reserve (State Public Property):

- Production Forests, including Community Forests and Forestry Concessions
- Protection Forests
- Conversion Forests (which can be transferred to state private property for other land-uses such as economic or social land concessions)
- Private Forests (Private Property), including:
- (The Permanent Forest Reserve and Private Forests together compromise the Permanent Forest Estate)

Ministry of Environment: *Protected Areas (State Public Property), including*:

- Community Protected Areas
- Flooded Forests and Mangroves inside Protected Areas

Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries:
Flooded Forests and Mangroves inside fisheries domains (State Public Property) outside Protected Areas, including:

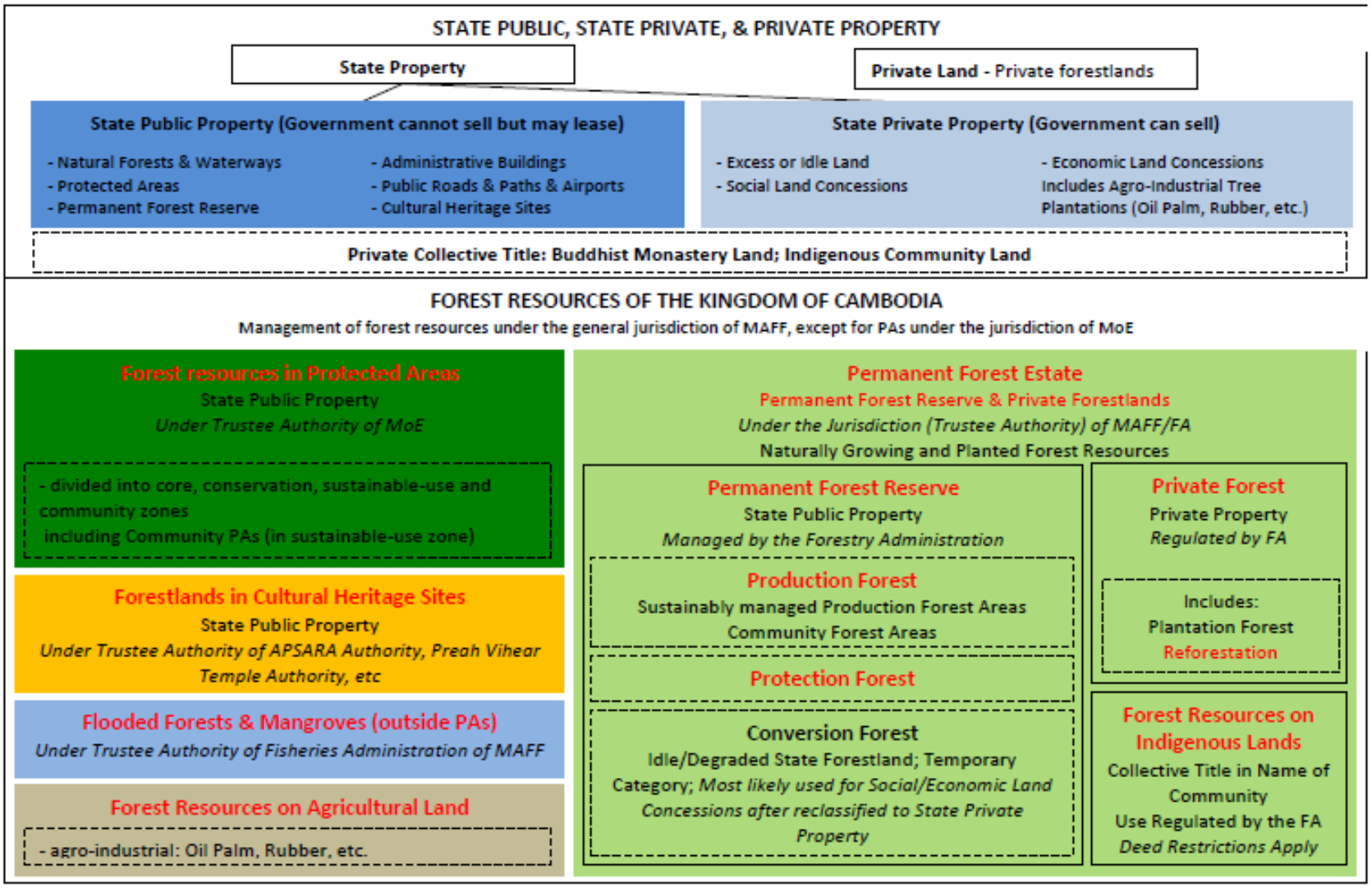
- Community Fisheries
- Fishing Lots
- Fisheries Protected and Conservation Areas

Apsara Authority and other Temple Authorities:

- Forested Areas around temple complexes (State Public Property)

Indigenous Peoples:

- Forest Resources within lands of indigenous peoples, registered as collective title (State Public Property)


STATE PUBLIC, STATE PRIVATE, & PRIVATE PROPERTY
State Property
Private Land - Private forestlands
State Public Property (Government cannot sell but may lease)
- Natural Forests & Waterways
- Protected Areas
- Permanent Forest Reserve
- Administrative Buildings
- Public Roads & Paths & Airports
- Cultural Heritage Sites
State Private Property (Government can sell)
- Excess or Idle Land
- Social Land Concessions
- Economic Land Concessions
Includes Agro-Industrial Tree Plantations (Oil Palm, Rubber, etc.)
Private Collective Title: Buddhist Monastery Land; Indigenous Community Land
FOREST RESOURCES OF THE KINGDOM OF CAMBODIA
Management of forest resources under the general jurisdiction of MAFF, except for PAs under the jurisdiction of MoE
Forest resources in Protected Areas
State Public Property
Under Trustee Authority of MoE
- divided into core, conservation, sustainable-use and community zones including Community PAs (in sustainable-use zone)
Forestlands in Cultural Heritage Sites
State Public Property
Under Trustee Authority of APSARA Authority, Preah Vihear Temple Authority, etc
Flooded Forests & Mangroves (outside PAs)
Under Trustee Authority of Fisheries Administration of MAFF
Forest Resources on Agricultural Land
- agro-industrial: Oil Palm, Rubber, etc.
Permanent Forest Estate
Permanent Forest Reserve & Private Forestlands
Under the Jurisdiction (Trustee Authority) of MAFF/FA
Naturally Growing and Planted Forest Resources
Permanent Forest Reserve
State Public Property
Managed by the Forestry Administration
Production Forest
Sustainably managed Production Forest Areas
Community Forest Areas
Protection Forest
Conversion Forest
Idle/Degraded State Forestland; Temporary Category; Most likely used for Social/Economic Land Concessions after reclassified to State Private Property
Private Forest
Private Property
Regulated by FA
Includes:
Plantation Forest
Reforestation
Forest Resources on Indigenous Lands
Collective Title in Name of Community
Use Regulated by the FA
Deed Restrictions Apply

National Responsibilities for REDD+ Readiness in Cambodia

Source:: Cambodia Readiness Preparation Proposal, 2011

Handout

RGC/Council of Ministers

- management of all state properties
- adopts management plans for state properties
- transfers, reclassifies and designates entrusted authorities for state properties

Ministry of Economy and Finance

- maintains inventory of state properties
- executive agent of the RGC in managing state properties, including transfer, sale, lease, concessions, etc
- management of state revenue
- co-chair of state trust funds

2008 Public Financial Management Law, 2006 Subdecree # 129 , 2000 Subdecree #04

Ministry of Land Management, Urban Planning & Construction

- manage cadastral administration of state land
- issue title/ownership certificates to all immovable properties
- management of maps of Cambodia

2001 Land Law, 1999 Subdecree # 62

Ministry of Agriculture, Forestry and Fisheries

- general jurisdiction for forests and forest resources (PA management under MoE)
- registration of permanent forest estates

Forestry Administration:

- responsibility for the Permanent Forest Estate
- developing and implementing national forest programme (including community forestry)
- studying and collecting data on all state forests
- conducting assessments of national forest carbon stocks
- developing forest carbon trades
- reforestation

Fisheries Administration:

- responsibility for flooded forest and mangrove areas
- developing and implementing national fisheries plan (including community fisheries)

2002 Forestry Law, 2008 Subdecree #188, 2006 Fisheries Law

Ministry of Interior (inc. NCDD)

- subnational administration (prov/dist/comm)
- commune development plans & funds

identify functions to be transferred to sub-national councils (NCDD) *2008 Organic Law*

Ministry of Environment

- management of Protected Areas
- review environmental impact assessments
- CDM interim designated national authority

General Department (GDANCP):

- developing and implementing National Protected Areas Strategic Management Plan
- responsibility for international environmental conventions

Department of Climate Change of GDANCP:

- cooperate with relevant institutions to : develop national climate change strategies, and carbon credit policy, manage climate change trust funds; Secretariat of NCCC
- UNFCCC focal point: negotiations, implementing UNFCCC decisions and preparing national GHG inventory reports
- coordinating implementation of CDM and carbon credit projects

2008 Protected Areas Law, 1993 Royal Decree; 2008 Subdecree #37, 2009 Subdecree #175

Ministry of Rural Development

- Recognize indigenous communities for registration with MoI

2001 Subdecree

Cambodia REDD+ Readiness

Handout

Source; REDD+ Road map, 2010

Cambodia developed a national road map for readiness for REDD+ in 2009-2010 and established its first REDD+ pilot project in 2008, submitted a Readiness Plan Proposal to the Forest Carbon Partnership Facility in 2009 and also became a partner country of the UN-REDD Programme in 2009 and signed a UN-REDD National Programme in 2011. Cambodia has now three pilot REDD+ projects (Oddar Meanchey, Seima and Kulen Promtep).

Cambodia is in stage 2 of the REDD+ Readiness process implementation of the REDD+ Roadmap.

Session 10: Basic and technical requirements for REDD+

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.

Materials

- 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

Time

1 hour and 30 minutes

Steps

1. Explain the objectives, contents, methodology and time of the session.
2. Ask participants in plenary to discuss the basic requirements for REDD+.
3. Note down the answers and group them into three categories (ranking technical, socio-economic, and policy)
4. Summarize the plenary discussions and present the basic requirements for REDD+ using multimedia.
5. Ask participants to discuss what they understand by the technical aspects and requirements for REDD+ implementation.
6. Note down the responses in white board.
7. Develop a list of technical requirements incorporating the responses. Add any missing requirements.
8. Request participants to explain the meaning of the points.
9. Present PowerPoint slides on the definition and clarify the meaning of each point.
10. List the major technical requirements found in the REDD+ program and the attempts made by the program to meet the requirements.
11. In the context of Cambodia, how are these requirements relevant? How could it be managed? Organize discussion on the key points.
12. Briefly summarize the subject discussed in the session and ask participants questions for clarification. Respond to the questions.

Basic and technical requirements for REDD+

Handout

Introduction

Countries should fulfill certain requirements to get payments under REDD+. Those requirements are not only beneficial for the nation who is 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.

Countries implementing REDD+ should work towards meeting the following requirements:

1. **Institutional and legal aspect**
    - Prepare a National REDD+ Strategy which addresses the drivers of 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.

National REDD+ Strategy

A national REDD Strategy should address the drivers of deforestation and forest degradation to be effective. Since the situation regarding drivers are more or less unique for each country. Countries have to develop the strategy which suits best in their national situation. The Cancun Agreements also requested countries, when developing and implementing their national strategies or action plans, to address, inter alia, the drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards ensuring the full and effective participation of relevant stakeholders, inter alia indigenous peoples and local communities;

2. **Technical aspects**
    - Development of a forest emission reference level and/or a forest reference level (baseline).
    - Develop a robust national forest monitoring system.
    - Develop capacity to measure, report and verify anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and forest carbon stock and forest-area changes.
    - Develop a system for addressing and respecting the seven safeguards and a system for providing information on how the safeguards are being addressed and respected throughout the implementation of the activities.

- Establishment of a national REDD+ Fund to receive REDD+ performance based payments
- Develop of a benefit sharing mechanism.

Possible development of a REDD+ registry for recording emission reductions and performance based payments.

Technical Requirements

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

1. Reference level 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 reference level proposed by countries will be submitted to the UNFCCC and go through a technical assessment of the proposed reference level. Countries can use a step-wise approach e.g. not include all activities or carbon pools from the beginning.

There are generally two approaches to establish a reference level.

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.

Historic baseline adjusted for national circumstances: Countries can propose adjustments if particular national circumstances can justify this. This is in particular for countries with a very low rate of historic emissions from deforestation and forest degradation and prospects of it increasing in the future. A reference level based on pure historic emission will not make it realistic for these countries to participate. A country which reduces carbon dioxide emissions below this baseline after implementation of REDD+ are entitled to the payments if the conditions are meet.

2. Monitoring, measuring, reporting and verification

Periodic monitoring is necessary to collect information about the change of forest area and forest carbon stocks and thus enables the measuring of carbon dioxide emission rate after implementation of a REDD+ program. Techniques, procedures, and methodologies applied for periodic monitoring have to be supervised and reviewed frequently.

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 the reported data.

Forest definition

In order to allow detecting deforestation there is a need to decide on a national forest definition as well as a definition of natural forests as this later definition is required for the implementations of the safeguards. Cambodia already has a forest definition for the CDM under the UNFCCC, but another definition is also possible. If the forest definition is different from definitions used for other international purposes e.g. the FAO World Forest Resource Assessment this difference should be explained.

3. Benefits-sharing mechanism

Benefits from REDD+ can come in many forms, improved forest resources, improved availability of non-wood forest products, steady supply of clean water, mangroves protecting inland cost lines and providing good fishing opportunities etc. This is often referred to as multiple benefits. Some of these benefits are by default local in nature while others provide goods and services further way from the forest area e.g. clean water for cities. Payments for performance from REDD+ is an incentive for countries to do REDD+ and when talking about benefit-sharing this is often what people refer to. But in most cases the other benefits are much more valuable. One problem with some of the multiple benefits is that we sometimes don't value them before they are lost and then it's sometimes too late to get them back.

Sometimes we talk about revenue sharing if we only include the money part of the equation.

Benefit sharing is a contested topic and it is important to have a very transparent decision making process when designing a benefit sharing mechanism. In some cases in the past some stakeholders have had different understandings of benefit sharing and this has lead to disappointment which in the end could be counterproductive for REDD+ efforts. There are no UNFCCC rules or guidance regarding benefit sharing. The payments are provided by the international level aim to incentivize actions which reduces emissions of carbon dioxide from deforestation and forest degradation and enhance removals of carbon dioxide by establishment of new forests. And if there are no positive results then there will be no payments made. This performance based mechanism is one reason REDD+ has been attractive for develop countries.

So far we have very few experiences with benefit sharing from REDD+. Brazil and Ecuador has some experiences with payments to people conserving their forest environment and Costa Rica has experiences from PES scheme lined to forest conservation.

For all of the above payments have been linked to particular actions communities, a farmer etc. have to do. It's not just a simple sharing amongst all people living in and around forests. It has been payments to achieve further emission reductions and thereby sustain the efforts. In most cases payments have not been linked to actual measured emissions reductions on the land. To do this will in most cases be much too expensive.

To be effective considerations should include which actions contribute to the reduction in emissions of carbon dioxide. This includes an understanding of the drivers of deforestation and forest degradation. In some cases this could lead to investments outside the forest sector e.g. the agricultural sector.

To be fair considerations should also include considerations on the costs and benefits of implementing REDD+. If costs are higher than (multiple) benefits then a payment can help make it interesting to do the action anyway. If the value of the benefits already is higher than the costs then perhaps there is no need for a payment to incentivize this action.

What is considered fair will depend on who you ask. It will be very important with transparent discussions on how to design a benefit sharing mechanism acceptable for all and when doing so also consider the practicalities and costs of implementing such a mechanism. If all REDD+ revenue are used to cover transaction costs then there is no revenue left to share and incentive actions. In any case it seems likely that REDD+ revenues will be used to cover costs of implementing REDD+ including activities on the ground, for monitoring and reporting of emissions as well as safeguards.

Revenue sharing and tenure - Secure tenure often promotes better stewardship of the land but it is not necessary a condition for benefitting from REDD+ revenues. In the case of encroachment in forest areas of poorer households, then perhaps REDD+ actions could be used to help find alternative options for these families. In this case they might benefit from REDD+ even without tenure. And as the most important drivers often are coming from outside the forest some activities probably also need to address these activities.

Forms of revenue sharing: Sometimes revenue sharing is pictured as money shifting from one person to another. In practice this can happen in many ways. It might not be the most practical thing to include individual people directly but rather focus on communities and use REDD+ revenues to fund activities for the community such as livelihood projects. In this case communities will have an important role in decisions on how to spend funds. Other forms of revenue sharing could be through the provision of jobs. e.g. for tree planting, rehabilitation of degraded forests or patrolling of existing forests.

Up-front or performance-based funding.
The key principle of phase three of REDD+ is payments for performance which are fully measured, reported and verified. In practice investments are often needed to generate these results which requires up-front investments. For individual actors and communities it might be difficult to first do the activities and then wait a number of years on the possible REDD+ revenue. By establishing a REDD+ Fund Cambodia could explore funding activities which will reduce emissions from deforestation and forest degradation regardless of fact that the actual verified emissions reductions on a national scale only will be rewarded later. This will move the revenue sharing from ex-post to ex-ante which is likely better for communities but include a risk at the national scale in case the expected results on the national scale do not materialize. REDD+ is not only for part of Cambodia but for all of Cambodia if it should be successful. This is a key difference between participating in an international REDD+ mechanism and the project based voluntary carbon market.

4. REDD+ Fund and REDD+ registry
At this point in time there are no UNFCCC requirement for countries to establish a REDD+ Fund or a REDD+ registry but negotiations on funding of REDD+ is still taking place and these two elements are often brought up. In order for a country to receive

performance based funding there is likely a need for a dedicated REDD+ fund able to receive and disburse funding for REDD+.

The REDD+ registry is to ensure that REDD+ emission reduction transaction are well recorded. Emission reduction is a very particular service/commodity as its emissions which did not occur. It's not something you pack in boxes and transport by truck and ship. It's basically only numbers on a piece of paper or a computer file and therefore there is a need to have strict rules about who can transfer emission reductions and receive payments and maintain the link to the MRV results on the ground. This is basically to prevent fraud and double counting of emission reductions. The UNFCCC process already have registries for emission reductions in other sectors which may or may not also be appropriate for REDD+.

5. Safeguards Information Systems (SIS)

The seven safeguards mentioned in the Cancun Agreements (COP-16) shall be addressed and respected throughout the implementation of REDD+. (Safeguards for REDD+ are explained in more detail in a subsequent session) In this context addressed means being implemented in the rules and regulations governing REDD+ implementation, and respected means that the before mentioned rules and regulations are respected throughout the implementation of REDD+. Also according to the Cancun Agreements countries are requested to develop a system for providing information on how the safeguards are being addressed and respected throughout the implementation of the REDD+ activities, while respecting sovereignty.

Furthermore COP-17 provided guidance on systems for providing information on how the safeguards have been addressed and respected. Such a system should:

(a) Provide transparent and consistent information that is accessible by all relevant stakeholders and updated on a regular basis;
(b) Be transparent and flexible to allow for improvements over time;
(c) Provide information on how all of the safeguards are being addressed and respected;
(d) Be country-driven and implemented at the national level;
(e) Build upon existing systems, as appropriate;

The decision also requested countries to provide a summary of information on how all of the safeguards are being addressed and respected throughout the implementation of the activities. This summary shall be submitted to the UNFCCC after the start of the REDD+ activities.

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.
Booklet prepared by REDD+ Pilot Project-ICIMOD, FECOFUN and ANSAB.
REDD CELL- draft version of REDD Terminologies.

Module 3: Components of REDD+

Session 11: Analysis of REDD+ stakeholders in Cambodia

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

- Understand the concept of stakeholders in REDD+ and stakeholder mapping and analysis of REDD+ in Cambodia and its importance in the REDD+ process
- Using lessons learnt from previous days understand and map the REDD+ stakeholders in Cambodia
- Understand REDD+ stakeholders how they relate to the individual participants role in REDD+ and REDD+ Awareness Raising

Materials

- 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.

Time 1 hour and 30 minutes

Steps

1. Start the session explaining its objectives, contents, methods and time.
2. Ask what do you mean by stakeholders? Difference between stakeholders and rights holders?
3. Note down the answers, including listing the characteristics of rights holders and stakeholders. Add any characteristics missing to differentiate between them.
4. Brainstorm to explain the importance of differentiating between stakeholders and rights holders.
5. Summarize the discussion and present (through PowerPoint presentation or brown sheet) the importance and process of stakeholder analysis. Clarify the analysis process and importance of each method.
6. Select one method and provide format for analysis as given in the reading material.
7. Divide the participants in groups according to format.
8. Ask each group to identify stakeholder/rights holders in each category.
9. 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.
10. Ask each group to present their findings in plenary. Encourage other group members to contribute or comment.

11. Ask participants to provide suggestions for equitable and people-oriented benefit sharing under REDD+.
12. Distribute the list of stakeholders in different categories as maintained in Cambodia's REDD+ readiness proposal.
13. Analyze and allocate (for information) the stakeholder identified according to REDD+ readiness proposal.
14. Summarize the discussions and ask participants to raise questions and respond accordingly.

Analysis of REDD+ stakeholders

Handout

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 rights 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.

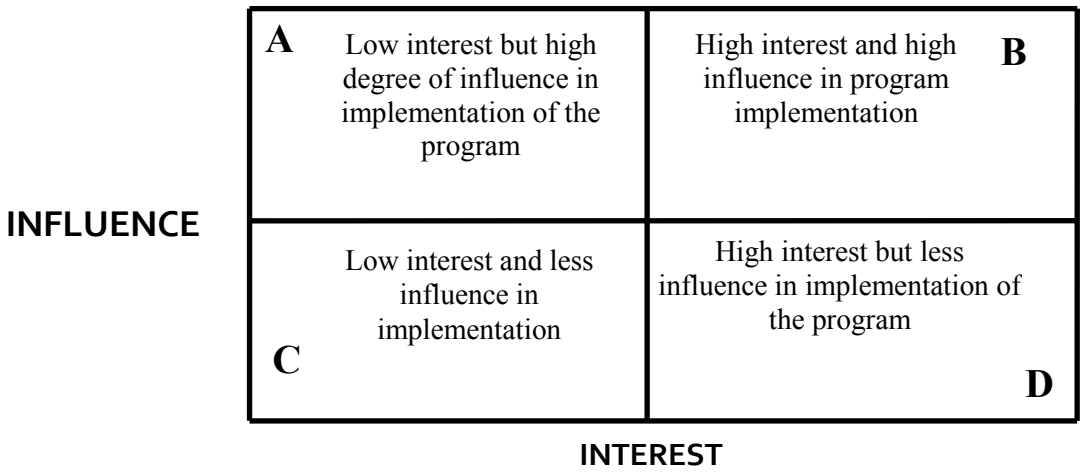
- Maintaining a common understanding on issues such as effectiveness of program, requirements, etc.

Analysis of Interest and Influence

In this process, the level of REDD+ stakeholders we are concerned with is clarified, and a list of individuals, institutions and groups, who are concerned with the REDD+ program is developed. The listed stakeholders are categorized into 4 categories on the basis of their interest in the REDD+ program and capacity to influence in REDD+ implementation

1. High degree of interest on program but has low capacity to influence the implementation process.
2. Less interest in program but, are 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 conducted analytical study.



Session 12: Social and environmental safeguards in REDD+

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

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

Materials

- 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.

Time 1 hour and 30 minutes

Steps

1. Explain the objective, subject matter, methodology, and time of the session.
2. Facilitate short discussion on the impact on existing forests conservation, management practices, and community rights with and without REDD+.
3. 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 social and environmental conditions if REDD+ is implemented.
4. Ask each group to present their findings of group work.
5. Add if any important points are missing in the group work and summarize the discussion.
6. Facilitate a short discussion in plenary on how the impacts are assessed and methods to minimize those impacts.
7. Distribute meta-cards to participants and ask them to write 2-3 key impacts of REDD+ on livelihoods and poverty alleviation.
8. Arrange all responses in 3-5 different groups.
9. 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.
10. Display the responses recorded on the charts and ask participants to review them through gallery walk.
11. Summarize the discussion and ask participants to raise questions for clarification.

Social and environmental safeguards in REDD+

Handout

Introduction

REDD+ comes with a set of safeguards as obligatory requirements so that countries can mitigate/avoid any negative social and environmental impacts of REDD+ but also to ensure multiple co-benefits. The seven safeguards included in the Cancun Agreements cover both social and environmental safeguards. Addressing and respecting the safeguards is a prerequisite for receiving performance based payments and this principle applies regardless of whether REDD+ is financed by the carbon market of a fund based approach.

1. Why are safeguards mandatory for REDD+?

REDD+ safeguards are mainly to address the following social and environmental concerns.

Social concerns: In developing countries, millions of rural indigenous peoples depend on forest resources for subsistence and income (World Bank 2012). Yet, their rights to own, manage, and use forest resources have received limited legal recognition from states in many of these countries. Thus, there is the social risk that REDD+ may adversely affect their forest based livelihoods as follows:

- *Social risk 1: Adverse impacts on the livelihoods of indigenous peoples and local communities:*
  - Restriction and ban on their current use of forests: REDD+ may induce stringent measures and controls over forests in order to sequester forest carbon and thus may (further) restrict and prohibit the current use of forests by indigenous peoples and forest dependent communities.
  - Involuntary resettlement of IPs and local communities from their forests: In the worst case, they may lose customary access to forests and may even be forced to move out from the forests they presently settle in.
- *Social risk 2: Exclusion and further marginalization of indigenous peoples and local communities (especially those who are most vulnerable) in decision making and benefit sharing:*
  - REDD+ may exclude indigenous peoples and local communities in decision making and benefit sharing. Even if they are included in decision making and benefit distribution, elite capture may occur where wealthy and powerful members among them monopolize decision-making power and REDD+ benefits. In consequence, the socially vulnerable people such as the poorest of the poor, people of lower classes, and women may be excluded and further marginalized under REDD+.

Environmental concerns: forests provide important ecosystem services such as supply of clean water, prevention of soil erosion, and preservation of biodiversity (Millenium Ecosystem Assessment 2003). Main environmental risks include:

- *Environmental risk 1: Conversion of natural forests*
  - REDD+ may promote the conservation of natural forests into mono-culture plantation forests, which may have adverse impacts on existing ecosystem services and biodiversity.
- *Environmental risk 2: Sisplacement (of pressure to outside REDD+ areas)*
  - The effort of arresting deforestation and forest degradation in one area may shift such pressure on forests located outside the REDD+ areas. For example, if REDD+ introduces restrictions over the use of a particular forest, those who used to use the forest for their livelihoods may exploit the forests in other areas. In consequence,
- *Environmental risk 3: Reversals*
  - A risk of reversals refers to a possibility that the areas protected and treated under REDD+ will be deforested and degraded in the future after carbon accounting and accreditation is completed. This risk relates to the issue of permanence, i.e., ensuring the volume of forest carbon stock to be maintained (without being lost) permanently after the carbon payment is made.

2. What do safeguards for REDD+ aim to achieve?

To address these social and environmental risks under REDD+, safeguards have been developed to achieve the following two main goals:

"**DO NO HARM" risks** (FCMC 2012): safeguards are expected at minimum to avoid, eliminate or minimize the negative social and environmental impacts of REDD+.

"**DO GOOD" outcomes** (FCMC 2012): in addition to the "do no harm" approach, safeguards are envisaged to provide co-benefits. Co-benefits generally refer to additional benefits including improved forest governance, securing and clarification of customary tenure rights for local forest dependent peoples, creation of new job opportunities and improved ecosystem services and biodiversity.

3. . UNFCCC guidelines

At present, two UNFCCC guidelines, namely Cancun Agreements and Durban Guidance , provide important criteria and procedures for all participating countries to follow in implementing REDD+ policy initiatives. These safeguards closely correspond with social and environmental risks and concerns that were outlined above.

Cancun Agreements issued at COP-16 in 2010 in Mexico lay out key decisions about what measures the system of safeguards should entail (see Table 1 for original texts).

Table1. Cancun Agreements Decision 1/CP.16

When undertaking the activities referred to in paragraph 70 of this decision, the following safeguards should be promoted and supported:

a. That actions complement or are consistent with the objectives of **national forest programmes** and relevant **international conventions and agreements**;

b. Transparent and effective **national forest governance structures**, taking into account national legislation and sovereignty;

c. Respect for the knowledge and rights of **indigenous peoples and members of local communities**, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;

d. The **full and effective participation of relevant stakeholders**, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of this decision;

e. That actions are consistent with the **conservation of natural forests and biological diversity**, ensuring that the actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits;

f. Actions to address the **risks of reversals**

g. Actions to reduce **displacement of emissions**.

Durban Guidance issued at COP-17, in 2011 provides guidance for how to provide information on how safeguards are addressed and respected by each country (see Table 2 for original texts).

Table 2. Durban Guidance Decision 12/CP.17

Decision 12/CP.17 agrees that systems for providing information on how the safeguards referred to in appendix I to decision 1/CP.16 are addressed and respected should, taking into account ***national circumstances and respective capabilities****, and recognizing* ***national sovereignty and legislation****, and relevant* ***international obligations and agreements****, and respecting* ***gender considerations***:

a. Be consistent with the guidance identified in decision 1/CP.16, appendix I

b. Provide transparent and consistent information that is accessible by all relevant stakeholders and updated on a regular basis;

c. Be transparent and flexible to allow for improvements over time

d. Provide information on how all of the safeguards are being addressed and respected;

e. Be country-driven and implemented at the national level;

f. Build upon existing systems, as appropriate;

The Cancun Agreements on REDD+ also includes a set of principles for which REDD+ should:

(a) Contribute to the achievement of the objective set out in Article 2 of the Convention;
(b) Contribute to the fulfilment of the commitments set out in Article 4, paragraph 3, of the Convention;
(c) Be country-driven and be considered options available to Parties;
(d) Be consistent with the objective of environmental integrity and take into account the multiple functions of forests and other ecosystems;
(e) Be undertaken in accordance with national development priorities, objectives and circumstances and capabilities and should respect sovereignty;
(f) Be consistent with Parties' national sustainable development needs and goals;
(g) Be implemented in the context of sustainable development and reducing poverty, while responding to climate change;
(h) Be consistent with the adaptation needs of the country;
(i) Be supported by adequate and predictable financial and technology support, including support for capacity-building;
(j) Be results-based;
(k) Promote sustainable management of forests;

Different from the safeguards there are no requirements to report on how REDD+ follow to the principles, but they are of course still relevant for the implementation of REDD+.

4.. Impact assessment technique

REDD+ may include social and environmental impact assessments which can be facilitated through different methods. The below diagram is one possible technique that can be adopted.

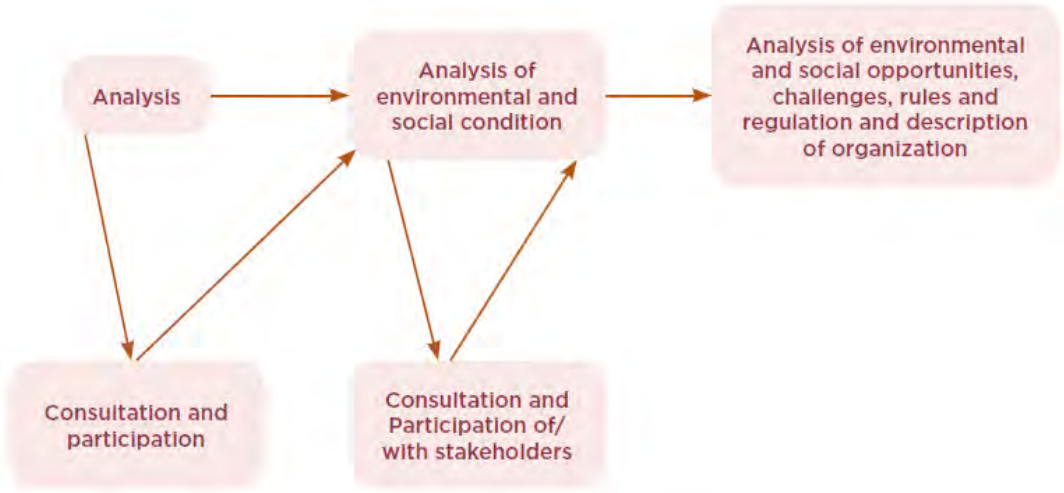


Diagram 1: Social and environmental impact assessment of REDD+ (Modified from FCPF)

5. Participation opportunity of Forest-Dependent Groups and other relevant stakeholders

While implementing REDD+, the existing use of forest resources by forest-dependent people should be assured. Situations should be created to secure the customary 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 full and effective participation of forest-dependent local communities and other relevant stakeholders in forest management related decisions, including implementation and benefit sharing is part of the safeguards.