THE REPUBLIC OF THE UNION OF MYANMAR

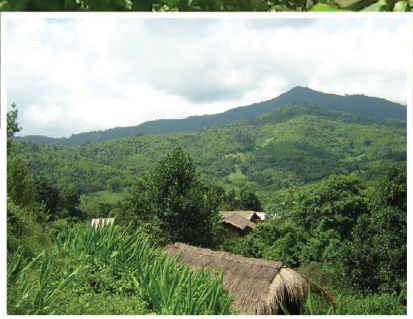
MINISTRY OF ENVIRONMENTAL CONSERVATION AND FORESTRY

FOREST DEPARTMENT

PROCEEDINGS

OF THE INCEPTION WORKSHOP ON CAPACITY BUILDING FOR DEVELOPING REDD-Plus ACTIVITIES IN THE CONTEXT OF SUSTAINABLE FOREST MANAGEMENT

ITTO Project RED-PD 038/11 Rev.3 (F)



Organized by Project Unit, Forest Department
Ministry of Environmental Conservation and Forestry,
Nay Pyi Taw, Myanmar,

THE REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF ENVIRONMENTAL CONSERVATION AND FORESTRY
FOREST DEPARTMENT

PROCEEDINGS OF THE INITIAL WORKSHOP

ON

CAPACITY BUILDING FOR DEVELOPING REDD-Plus ACTIVITIES IN THE CONTEXT OF SUSTAINABLE FOREST MANAGEMENT

ITTO Project RED-PD 038/11 Rev.3 (F)

Held at the Ingyin Hall, Forest Department, Nay Pyi Taw
Myanmar on 26th December 2012

Organized by Project Unit, Forest Department
Ministry of Environmental Conservation and Forestry,
Nay Pyi Taw, Myanmar,

January 2013

Proceeding of the Inception Wrokshop

TABLE OF CONTENTS

Background

Myanmar is one of the forest rich countries in the tropical region. Its forest has contributed to the provision of abundant and indirect benefit to local, regional and global communities especially in reducing Green House Gas (GHG) emissions and enhancing forest carbon stocks and environmental services. In Myanmar, the emissions to be accounted for REDD mechanism would probably come from both deforestation and degradation due to various causes. As concept and methodologies of REDD-plus are new to Myanmar, capacity building and awareness raising for all level of stakeholders are currently important and urgently needed. It has been almost two decades of cooperation between Myanmar and ITTO since Myanmar became ITTO member country in 1993. Myanmar became a partner country of UN-REDD Programme in November 2011 which reflects Myanmar's initiatives and efforts for REDD+ readiness activities. This project " Capacity building for developing REDD+ Activities in the context of Sustainable Forest Management" RED-PD 038/11 Rev.3 (F) is based on national priority and recommendations identified by the international organization such as ITTO and UN – REDD Programme that capacity building is needed at all level in order to fully implement REDD-Plus. Despite the fact that negotiation for REDD-Plus is on-going process under UNFCCC, REDD-Plus has the potential to deliver large cuts in emissions at a low cost within a short time frame. At the same time, it contributes to the positive impact on biodiversity, reducing poverty and sustainable development in addition to carbon benefit. The Government of the Republic of Union of Myanmar, Cabinet approved this project with the meeting 38/2012 on 25-10-2012 and was signed by Executive Agency (FD) and ITTO on 8-11-2012. A crucial aim of this project is to build capacity among stakeholders and communities on the important of SFM and climate change mitigation. This could be implemented through awareness programmes such as organizing workshops and meetings for policy makers, forest officers, field staff, local communities and relevant stakeholders. Information on the project's finding could be disseminated as well for better understanding of deforestation and forest degradation in the country through outreach activities (i.e – publications, seminars, workshops). This Project Initial Workshop was held on 26th December 2012 at Ingyin Hall of Forest Department (FD), Ministry of Environmental Conservation and Forestry (MOECAF) according to the timeline for the implementation of the project activities. (Agenda – Annex – 1)

II. Objective of the workshop

By bringing together a range of stakeholders including national authorities, ITTO, forestry institutions, international consultants, national NGOs, the workshop is expected : -

(1) To share current status of implementing REDD – Plus in Myanmar: -

- Status of the ecological productivity and environmental values of REDD-Plus
- Understanding the community's perspective and participation in REDD-Plus
- Social and economic benefits occurred from REDD-Plus
- Economic potential of REDD-Plus

(2) To improve Ministry of Environmental Conservation and Forestry (MOECAF), staff and related Stakeholders knowledge on REDD-Plus including concepts objectives and implementation activities and to understand and promote the economy and environmental, benefits that on be accepted form REDD-Plus.

(3) To assist Sustainable Forest Management by REDD-Plus activities and to support in development of National REDD-Plus programme.

III. The Workshop

The workshop was held on 26th December 2012 at Ingyin Hall, Forest Department, Nay Pyi Taw, and Myanmar. It was attended by (51) participants (Annex-2) including staff from Planning and Statistics Department (PSD), Environmental Conservation Department (ECD), Forest Department (FD), Myanmar Timber Enterprise (MTE) of Ministry of Environmental Conservation and Forestry (MOECAF), and staff formed related Departments such as Land Record and Settlement Department, Meteorology and Hydrology Department, General Administration Department, National Planning Department, Rural Development Department, Non-Government Organizations (NGOs) including WCS, BANCA, ECCDI and Professor YOUN Yeo-Chang of Seoul National University and ITTO Projects Manager Dr Hwan Ok Ma. The workshop concluded with suggestions and recommendations on the following (7) strategies of

REDD-Plus Road Map.

(1) Tackling deforestation and forest degradation.

(2) Enabling policies

(3) Strengthening forest governance.

(4) Establish MRV System and Set Reference Emission Level (REL) at the national level.

(5) Strengthen institution, building capacity and raising awareness about REDD-Plus.

(6) Ensure, stakeholder consultations and engagement and

(7) Ensure sustainable financing for REDD-Plus

The following is a record of the initial workshop's proceedings

1
OPENING SESSION

1.1 Opening Remarks

Dr. Myint Oo, Rector of the University of Forestry, expressed his thanks for giving him the opportunity to give the opening remarks on behalf of the Ministry of Environmental Conservation and Forestry (MOECAF). He said that he is glad to welcome everyone who participates in this workshop on "capacity building for developing REDD-Plus Activities in the context of sustainable forest management". He highlighted that MOECAF is emphasizing Global Climate Change and has been actively collaborating with International

Organizations and Institutions in order to combat climate change. He recalled the cooperation between Myanmar and ITTO since Myanmar became an ITTO member country in 1993. He also highlighted Myanmar's commitment and efforts to conserve and sustainably manage their forest resources and to eradicate poverty. He also clearly stated that Myanmar recognized the important role of the regional cooperation and coordination to support the implementation of sustainable forest management (SFM). He acknowledged ITTO, that with introduction of Myanmar's lesser – known Species to world market since 1997 and ITTO providing opportunity to collaborate and contributed over US Dollar 2.4 millions for (8) ITTO Projects up to this present REDD-Plus activities project supporting three years period. He said that this project was signed on 8th November 2012, by Union Minister H.E U Win Htun and ITTO Executive Director, Dr. Emmanuel Ze Meka at 48th Session of the International Tropical Timber Council (ITTC) held in November 2012 in Yokohama, Japan. The project started 1st December 2012 and the project period is (3) years up to 30th November 2015. The First Meeting of the Project Steering Communities (PSC) was held on 19th December 2012 at Meeting Room of Forest Department, Nay Pyi Taw and approved Yearly Plan of Operation. He also mentioned and explained about the objective and detailed statements of the initial workshop. In addition, he said that a crucial aim of this project is to build capacity amongst stakeholders and communities on the importance of SFM and climate change mitigation. This could be implementing through awareness programmes such as organizing workshop and meeting for policy makers, forest officers, field staff, local communities and relevant stakeholders. Expected outcomes at project completion will be a capacity building of Ministry of Environmental Conservation and Forestry, local communities and relevant stakeholders regarding reducing emission form deforestation and forest degradation and enhancing environmental service. He continued that this project would result significant reduction in loss of forest biomass and consequent emission. Enhancement in forest carbon stocks would have been increased. Improvement in biodiversity, watershed conditions and other environmental services are expected. Some lessons on extensions activities; MRV of carbon stock, governance issues

and benefit sharing arrangements for REDD-Plus in Myanmar would be generated. He explained that Myanmar is one of (12) Asia and Pacific developing countries participated in Partner Country of UN-REDD Programme, out of (44) member countries of including Latin America, Africa and Caribean Countries. Myanmar became a partner country of UN-REDD Programme in November 2011, which reflects Myanmar's initiative and efforts for REDD-Plus readiness activities. The preparation of REDD-Plus Readiness is of upmost important for us and multi-stakeholder participation at all level will be encouraged. NGOs will be vital part of the implementation approach to share experiences in local community development and capacity building in forest-based climate change mitigation action. Academic and researcher will be involved with providing, some capacity building training workshops. He stated that, the main objectives of the workshop are (i) to share current status of implementing REDD-Plus in Myanmar (ii) to assist Sustainable Forest Management and (iii) to improve Ministry of Environmental Conservation and Forestry (MOECAF) staff and related stakeholders knowledge on REDD-Plus and he finally urged the participants to make open, constructive and implementable recommendations to promote REDD-Plus activities. (Opening Remarks by Dr. Myint Oo in Myanmar attached in Annex .3)

1.2 Keynote Speech from ITTO

On behalf of ITTO, Dr Hwan Ok Ma, Projects Manager, ITTO expressed his appreciations and thanks to Forest Department for the long time cooperation and partnership with ITTO. He also expressed his appreciation to the Minister of MOECAF for joining the 48th session of the International Tropical Timber Council (ITTC) held in November 2012 in Yokohama, Japan. He also highlighted about the brief account on

Thematic Programme and Project Agreement including of guidelines, procedures, ITTO Manual for Project and Reporting System. He then invited the participants to take part activities in the workshop, particularly providing their comments and inputs during the discussion session. Lastly he expressed his appreciation to MOECAF, Forest Department, other related departments and NGO for their participation and located forward to the success of the initial workshop of the project. (Opening Remarks by Dr. Hwan Ok Ma attached in **Annex .4**)

2
PAPER PRESENTATION SESSION

2. Paper Presentation Session

The presentation session was chaired by U Bo Ni, Director of Watershed Management Division, Forest Department, and Ministry of Environmental Conservation and Forestry (MOECAF). The following six topics were presented by the speakers.

a. Project orientation and Current Status of REDD-Plus Readiness Preparation in Myanmar by Dr. Thaung Naing Oo, National Project Manager, Deputy Director, Planning and Statistic Division of Forestry Department.

b. Development of REDD-Plus by Dr Hwan Ok Ma, Projects Manager, ITTO

c. Research and Development in REDD-Plus by Professor YOUN Yeo- Chang.

d. Summary on the Implementation of REDD-Plus Project Supported by Korea Forest Service (KFS) by Naing Zaw Htun, Ph.D

e. National Forest Inventory and Measuring Reporting and Verification (MRV) for REDD-Plus by Myat Su Mon, Ph.D, RS & GIS Section, Planning and Statistics Division, Forest Department.

f. Stakeholder Engagement and Development of Community Forestry in REDD-Plus in Myanmar.

Part 1. Development of Community Forestry for REDD-Plus in Myanmar by Dr. Rosy Ne Win, Staff Officer, Planning and Statistics Division, Forest Department.

Part 2. Concept Note for Stakeholder Engagement in REDD-Plus in Myanmar, by Nanda Win Aung, Staff Officer, Watershed Management Division, Forest Department.

2.1 Project orientation and current status of REDD-Plus Readiness preparation in Myanmar

Overview of the project "Capacity Building for Developing REDD-Plus Activities in the context of Sustainable Forest Management [RED-PD 038/11 Rev.3 (F)]" was explained by Dr Thaung Naing Oo, National Project Manager, Deputy Director, Planning and Statistics Division, Forest Department. First, he touched on Project orientation, which included Project Profile, Project Site, Objectives, expected outputs, Activities, Project structure, Role and Responsibilities of collaborating institutions and mechanisms for ensuring sustainability after project completion. Second part of this presentation was on current status of REDD-Plus Readiness Preparation in Myanmar. The National Project Manager reported the scope of presentation, which included: - Introduction, ongoing projects for REDD-Plus Readiness, Current Status of REDD-Plus Readiness Preparation and the way forward. His full text is given in Annex.5.

Question and Answer / Comments

Chairman U Bo Ni made a remark that since REDD-Plus activities is late in Myanmar, comparing neighboring countries; we need to try our best. Since we have a lot of knowledge on basic needs on REDD-Plus activities such systematic Myanma Selection System and Sustainable Forest Management, we could be stand up with the neighboring countries for the successful implementation of the project.

U Aung Kyaw Soe, staff officer of Forest Department, suggested including Private Plantation Sector in REDD-Plus Activities for preparation of National Strategy.

Dr Thaung Naing Oo, replied that for developing countries like Myanmar, it needs to conserve Resources. Capacity Building Programmes and Financial Resources are already available for NGO and Private Sector that we need to conserve our present resources. For Financial Sustainable Mechanism, it is important that private entrepreneurs and companies require to understand and interested on Environmental Conservation Activities.

2.2 Development of REDD-Plus

Dr Hwan Ok Ma, Projects Manager of ITTO started the presentation with outline of the presentation including: - Brief to Rio+20 and Global carbon cycle; UNFCCC, Kyoto Protocal, REDD-Plus challenges and ITTO REDDEs Thematic Programm. He recalled the presences of Union Minister H.E U Win Htun at the 48th session of the International Tropical Timber Council (ITTC) held in November 2012 in Yokohama, Japan. He also explained his working experiences with MOECAF. Then he presented on : - Brief to Rio+20, Global carbon cycle, Global Anthropogenic GHG emissions, UNFCCC and Kyoto Protocal, UNFCCC objective & structure strategies and instruments of UNFCCC, Forests and Climate Change Mitigations and Adaptation. How forest management helps tackle climate change Kyoto Protocal, the nature of CDM, Forest Carbon Projects Concepts, Forest carbon Project Types, Kyoto Protocal and tropical forests, Afforestation / reforestation in the CDM, current situation of the A/R CDM. Dr. Hwan Ok Ma continued on REDD-Plus Definition, understanding the "plus". State of world forests, Forest Transition Theory, carbon stocks difference in Land use changes, Bali Road map & Copenhagen Accord; concern Agreements, COP 16 decision on REDD-Plus, Durban Platform, COP 18 ITTO Side Event which included REDD-Plus MRV, Capturing benefits from community forest management in the tropics. He also explained on Doha

Climate Gateway (COP18, 2012) including Kyoto protocol and Post 2020 Climate Deal, REDD-Plus works programme and process to address issues. He also stated Country Position in Doha of China, Australia, Japan, USA and decisions. Dr Hwan Ok Ma finally touch on ITTO Thematic Programme on REDDS, ITTO REDDS Projects Cycle 2009, ITTO Projects Cycle 2011, REDD-plus Demonstration Project in Mera Betiri National Park, Indonesia, Bilateral offset Mechanism of Japan, lessons from ITTO REDDS, and REDD-Plus : Enabling Conditions of SFM. He concluded with the remarks on the concept of SFM, opportunities in REDD-Plus and effectively addressing REDD-Plus in the context of SMF for sustaining tropical forests in the 21st century. His full text is given in **Annex – 6**.

Questions/Answers/Comments

U Aung Myint Than,Director, planning Department of Ministry of National Planning and Development stated that in Myanmar natural resources management and agriculture development faces challenges related to the general enabling environment as well as specific issues such as governance and availability of technology and finance. He said the country is also extreme weather events by the devastating Cyclone Nargis. He would like to know how this project could support. Dr Hwan Ok Ma replied that, this project included capacity building programmes and Demonstration plots which would be supported and fulfilled the requirement of community.

2.3 Research and Development in REDD-Plus

Professor YOUN Yeo-Change from Seoul National University started his presentation with concept of REDD-Plus. He then explained on what needs to be ready for implement REDD-Plus Programme. He continued on REDD-Plus in would including UNREDD Programme partners countries, Forest Carbon Partnership. The presentation follows with current status of Research on REDD-Plus including literature review, carbon stock estimation, supply potential of REDD carbon credits, studies on Reference Emission Level, Research on REDD-Plus at cost, estimates of opportunity cost of REDD-Plus, Institutional approach, Research on REDD-Plus at CIFOR, Research on REDD-Plus at IGES, Research on REDD-Plus at Korea Forest Research Institute and Research and REDD-Plus at Center for Forestry Research on Climate Change, Seoul National University. Professor YOUN continued on a case study at SNU, Deforestation in N.Korea and Feasibility of REDD Project in N. Korea. Finally he concluded with the needs of Research on REDD-Plus in Myanmar, collaborative Research and Development between Myanmar and Republic of Korea and International Training Workshop on REDD-Plus Governance. His full text is given in **Annex.7**.

Questions/Answers/Comments

Dr. Thaung Naing Oo, Project Manager requested the support from Korea University on Trainings and Scholarships for Researchers, Departmental officials and University Students. Dr. Hwan Ok Ma, Projects Manager, ITTO explained that he understand that whoever has prescribed qualification could supported by Korea University for Scholar and Training.

2.4 Summary on the Implementation of REDD-Plus Pilot Project Supported by Korea Forest Service (KFS)

Dr. Naing Zaw Htun, Team Leader of the ITTO REDD-Plus Project started his presentation with introduction on the REDD-Plus pilot project. He continued on the implementation of the project, project activities, such as Restoring degraded forest land, Training, Workshop, Public talk and study tour, estimating above ground biomass at the landscape level using the satellite image, supporting the community and preparation of technical reports. He then concluded with the REDD-Plus pilot achievements and suggestions on the efforts of Myanmar to be breast of the other countries in the region in implementing REDD-Plus scheme. His full text is given in **Annex . 8**

Questions/Answers/Comments

Dr Hwan Ok Ma, Projects Manager, ITTO requested to explain the activities of second period of the implementation of REDD-Plus Pilot Project supported by Korea Forest Service (KFS). Dr Naing Zaw Htun replied that, the preferences will be on the conservation activities during the project period.

explained on Carbon Enhancement. U Kyaw Thinn Latt from WCS, suggested that the project activities implementation sites should be selected after consultation with the local community. Then Professor YOUN Yeong-Chang

2.5 National Forest Inventory and Measuring Reporting and Verification (MRV) for REDD-Plus

Dr. Myat Su Mon, Team leader of ITTO REDD-Plus Project presented on National Forest Inventory and Measuring, Reporting and Verification (MRV) for REDD-Plus. She mainly emphasizing on General Introduction which included REDD-Plus and MRV and current practices and suggestion. She started with General introduction and explained on what is REDD-Plus . She continued with Time line of REDD-Plus, REDD-Plus Activities, National Forest Monitoring Systems for REDD-Plus, Functions of the National Forest Monitoring System and MRV, MRV for REDD-Plus and overview of MRV for REDD-Plus. She also touched on current practices such as Forestry Database Management, National Forestry Inventory, Forest Inventory Design, Forest Inventory and Brief Information of Forest Inventory. She also explained on current Activities of RS and GIS, Forest Cover Assessment of Myanmar at different periods including, Bago Mountain Areas, Taninthayi Nature Reserve Project Area, Ayeyardady Delta. Dr. Myat Su Mon, next presented on estimating aboveground biomass of tropical mixed deciduous forests using land sat ETM image. She also explained on Study Area, Methodology, field inventory, estimation of AGB using equation and results of AGB-estimation. She finally concluded with suggestion on successful REDD-Plus mechanism, clear and practical metrologies, and consistency of satellite data and importance of field survey. Full text is given in **Annex.9**

Questions/Answers/Comments

U Thant Shin, Assistant Lecturer of University of Forestry, Yezin, Ministry of Environmental Conservation and Forestry discussed on application of Participatory Monitoring System in the field during the second period of the project. He requested that he would like to know, whether it would be applicable of Participatory Monitoring System in the field.

Dr. Myat Su Mon explained in details how to apply Participatory Monitoring System in the field during second period of the project.

Dr Thaung Naing Oo, National Project Manager and Deputy Director of Forest Department also supplemented by discussing that, Asia Air Survey company will be organized a training for Deputy Rangers and Foresters of Inlay Lake Watershed Management Zone at Nyaung Shwe and Pindaya Township during 1st February to 15th February 2013 and a workshop will be organized at Forest Department Headquarter. He added that there will be Trainings at Taungoo District to be organized. Dr Hwan Ok Ma, Projects Manager also suggested on MRV System and TNR operated land cover and land use.

Dr. Myat Su Mon in replied discussed on land cover and land use.

2.6 Development of Community Forestry for REDD-Plus in Myanmar

As first part of the session, Dr Rosy Ne Win, Deputy Project Manager of ITTO REDD-Plus Project, started her presentation on causes of Deforestation and Forest Degradation. She continued on Preparedness for REDD in Myanmar and on-going project for the preparation of REDD-Plus Readiness. Dr. Rosy Ne Win also explained on Role of Community in REDD-Plus activities, Key Elements of Community Forestry Approach, Progress of Community Forestry in Myanmar and Annual Forest Area and over to Community.

She also presented the facts on international collaboration with ASFN and RECOFTC for CF development in Myanmar and Future CF Development Activities supported by RECOFTC. She concluded her presentation with Main challenges for the CF development in REDD-Plus and Way forward for CF Development in REDD-Plus. Full text is given in **Annex -10**.

2.7 Concept Note for Stakeholder Engagement in REDD-Plus in Myanmar

As second part of the presentation, U Nanda Win Aung, Staff Officer of Watershed Management Division, Forest Department, MOECAF, introduced outlines for stakeholder Engagement in REDD-Plus in Myanmar.

He included in his explanation on Climate Change in Forestry Sector, Contemporary Sustainable Forest Management, Stakeholders engagement in REDD-Plus, Forest and Stakeholders, Stakeholders analysis Components of Stakeholder Engagement and conclusion. Full text in given in **Annex -11**

Questions/Answers/Comments

U Pyi Soe Aung, Range Officer of Nature and Wildlife Conservation Division of Forest Department, requested to explain on benefits and distribution of activities of the REDD-Plus programmes. U Nanda Win Aung explained, on difference on distributions and benefits as well as on FPIC. He pointed out that, it would be more related with FPIC. Due to Forest Conservation its benefit would be proportionately distributed among state and local community and explained that more benefit will be on conservation activities.

Prof YOUN from Seoul University suggested on power and leader for REDD-Plus activities. Dr Hwan Ok Ma, Projects Manager ITTO has also discussed on land use conflict in Community Forestry.

3. GROUP DISCUSSIONS AND RECOMMENDATIONS

The following individual participants lead discussions and suggestion and the related facts for National REDD-Plus Strategies.

a) **Dr. Thaung Naning Oo** Capacity Building

b) **U Pyi Soe Aung** Stabilization of shifting cultivation

c) **U Thant Shin** Implementation Free, Prior Informed Consent Preparation Application of Free, Prior Informed Consent

d) **Prof. U Ohn Lwin**

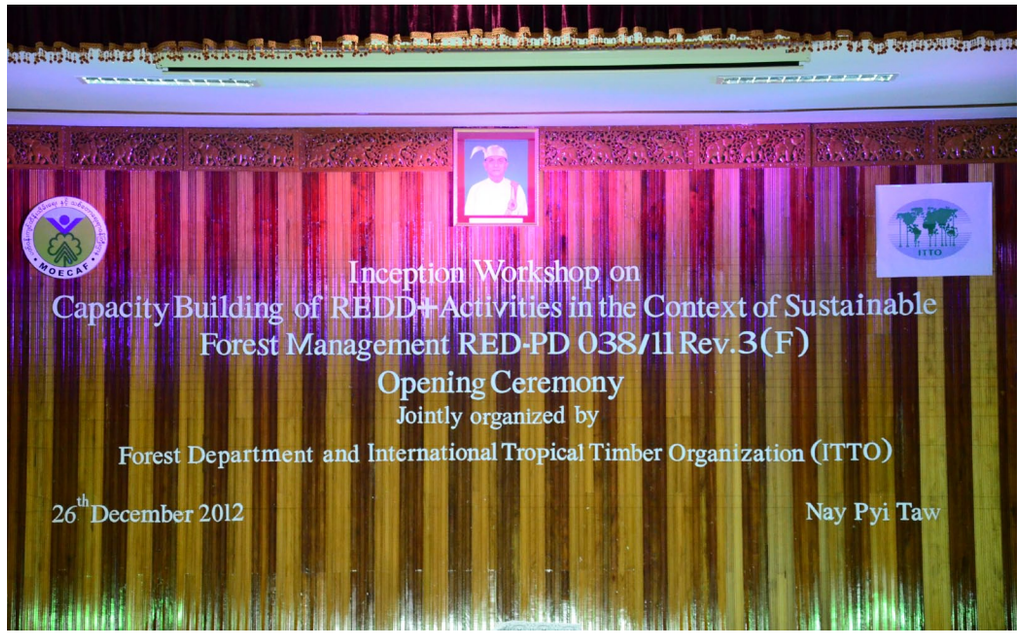
- Establish National REDD-Plus committee / REDD National Working Group
- Establish Equitable benefit Distribution System. Develop technical and Institutional guidance to implement REDD-Plus.

Finally, it was recommended to include the following (7) strategies in REDD-Plus Road Map.

1. Tackling deforestation and forest degradation
2. Enabling polices
3. Establish MRV System and set Reference Emission Level (REL) at the national level.
4. Strengthen institution, building capacity and raising awareness about REDD-Plus
5. Strengthen institution, building capacity and raising awareness about REDD-Plus
6. Ensure stakeholder consultation and engagement
7. Ensure sustainable financing for REDD-Plus

4. CONCLUDING REMARKS BY THE CHAIRMAN

The workshop was concluded with closing remarks by U Bo Ni (Chairman), Director of Watershed Management Division of Forest Department, Ministry of Environmental Conservation and Forestry. In his conclusive remarks, he made remarks that, this workshop is one of the output of ITTO Project, " Capacity Building for Developing REDD-Plus Activities in the Context of Sustainable Forest Management, (RED-PD 038/11 Rev.3 (F)" executed by Forest Department of Ministry of Environmental Conservation and Forestry. He expressed his special thank to Dr Hwan Ok Ma, Projects Manager, ITTO and Professor YOUN Yeo-Chang of Seoul National University for supporting to hold this workshop and project. And he was very thankful to all Departmental heads from MOECAF and related Ministries and all participants from MOECAF, related ministries, NGOs and all guest. The chairman acknowledged that, it has covered all the agenda items of the workshop and he wished to express his sincere appreciation for fruitful and productive intern of actively participation by all the participants. He also wishes to express his deep appreciation to all the resource persons, invited representative from the stakeholders for their valuable presentation, contribution and participation. He recalled that, REDD-Plus is a major opportunity for tropical forest conservation. Myanmar has recognized



that REDD-Plus is and innovatic concept that can complement ongoing forest policies. Myanmar is also aware of REDD-Plus as a mechanism to create on incentive for developing countries to protect, better manage and wisely use their forest resources, contributing to the global fight against climate change. In addition, he stated that, Myanmar recognizes the relationship of the deforestation and forest degradation with the increase in emissions of greenhouse gases and the reduction of carbon sequestration potential. Thus Myanmar continues to emphasize the significance of sustainable management of existing sinks and reservoir as fulfilling the commitment outlines in the convention on Biological Diversity which ratified in 1994. Myanmar is very keen to initiate REDD-Plus mechanism since 48% of total country area is forested. Myanmar has very much potential to contribute mitigating climate change by conservation existing natural forests and restoration of degraded forests across the country. The chairman finally stated that the project will identify and implement innovative and socially sound interventions that contribute to poverty alleviation and improved livelihoods for forest dependent people while securing the tropical timber resource base and he concluded his remarks by expressing that much of recommendations and suggestion would be actions. Full text of his remarks in Myanmar is in Annex-12.

Capacity Building for Developing REDD-Plus Activities in the Context of Sustainable Forest Management

RED-PD 038/11 Rev.3 (F)

Initial Workshop Programme
26th December 2012 (Wednesday)

No	Time	Particulars
1.	8:00 – 8:30	Registration
2.	8:30-9:00	Opening Ceremony (1) Opening Announcement (2) Opening Remarks by Rector, University of Forestry (UoF) (3) Words of Thank by Dr. Hwan Ok Ma (Projects Manager, ITTO) (4) Closing Announcement (5) Photo session (6) Refreshment
		Paper Presentation
3.	9:30-9:45	**Paper (1)** Current Status of REDD+ Readiness Preparation in Myanmar By Dr. Thaung Naing Oo, Deputy Director , Planning and Statistics Division, National Project Manager, ITTO Project
4.	9:45-10:00	Discussion
5.	10:00-10:30	**Paper (2)** Introduction to REDD-Plus Negotiation in UNFCCC By Dr. Hwan Ok Ma (Projects Manger, ITTO)
6.	10:30-10:45	Discussion
7.	10:45-11:15	**Paper (3)** Research and Development in REDD-Plus By Prof. Yong Yeo-Chang, Professor, Seoul National University
8.	11:15-11:30	Discussion
9.	11:30-11:45	**Paper (4)** Experience Sharing on Implementation of REDD-Plus Pilot Project Supported by Korea Forest Service (KFS) By Dr. Naing Zaw Htun, Assistant Director, Forest Department

10.	11:45-12:00	Discussion
11.	12:00-13:00	Break
12.	13:00-13:15	**Paper (5)** National Forest Inventory and Measuring, Reporting and Verification (MRV) for REDD-Plus in Myanmar By Dr. Myat Su Mon, Assistant Director, Planning and Statistics Division, Forest Department
13.	13:15-13:30	Discussion
14.	13:30-13:45	**Paper (6)** Stakeholder Engagement and Development of Community Forestry in REDD-Plus in Myanmar By Dr. Rosy Ne Win, Staff Officer, Planning and Statistics Division, Forest Department & U Nanda Win Aung, Staff Officer, Forest Department
15.	13:45-14:00	Discussion
16.	14:00-14:15	Group Discussion
17.	14:15-15:15	Tea Break
18.	15:15-16:00	Group Leader Presentation
19.	16:00-16:15	Closing Remarks by U Bo Ni (Chairman), Director of Watershed Management Division , Forest Department

Capacity Building for Developing REDD-Plus Activities in the Context of Sustainable Forest Management
RED-PD 038/11 Rev.3 (F)

Initial Workshop on ITTO REDD-Plus Project
Participants list
26th December 2012 (Wednesday)

Representative from ITTO

No	Name	Position	Organization / Department
1.	Dr. Hwan Ok Ma	Projects Manager	ITTO
2.	Dr. Youn Yeo-Chang	Professor	Seoul National University

Representative from Ministry of Environmental Conservation and Forestry

No	Name	Position	Organization / Department
1.	U Khin Maung Oo	Director	Planning and Statistics Division
2.	U Zaw Win Myint	Director	Forest Research Institute
3.	Dr. San Thwin	Professor	University of Forestry
4.	U Ohn Lwin	Professor	University of Forestry
5.	U Tin Maung Win	Professor	University of Forestry
6.	U Myo Lwin	Deputy Director	Dry Zone Greening Department
7.	U Ye Htut	Deputy Director	Nature and Wildlife Conservation Division
8.	U Myo Min	Deputy Director	Plantation and Natural Forest Division
9.	Dr. San Oo	Deputy Director	Environmental Conservation Department
10.	Dr. Thaung Naing Oo	Deputy Director	Planning and Statistics Division
11.	Dr. Min Tin Maung	Lecturer	University of Forestry
12.	U Thein Oo	Deputy General Manager	Myanma Timber Enterprise
13.	U Saw Jon Shwe Ba	Assistant General Manager	Myanma Timber Enterprise
14.	U Nyint Maung	Assistant Director	Planning and Statistics Division
15.	U Saw Daniel	Assistant Director	Planning and Statistics Division
16.	Dr. Myat Su Mon	Assistant Director	Planning and Statistics Division
17.	U Win Naing	Assistant Director	Planning and Statistics Division
18.	U Thein Shwe	Assistant Director	Taungoo District
19.	U Pe Chit	Assistant Director	Training and Research Development Division

20.	U Than Naing	Assistant Director	Planning and Statistics Division
21.	U Thaung Oo	Assistant Director	Planning and Statistics Division
22.	U Myint Aung - 3	Assistant Director	Forest Research Institute
23.	Daw Khin May Lwin	Assistant Director	Forest Research Institute
24.	U Than Naing Win	Staff Officer	Dry Zone Greening Department
25.	Dr. Naing Zaw Htun	Staff Officer	Nature and Wildlife Conservation Division
26.	U Aung Kyaw Soe	Staff Officer	CFDTC
27.	Dr. Rosy Ne Win	Staff Officer	Planning and Statistics Division
28.	U Nanda Win Aung	Staff Officer	Watershed Management Division
29.	U Moe Thu	Staff Officer	Taungoo District
30.	Dr. Tin Zar Kywe	Staff Officer	Forest Research Institute
31.	U Nyan Hlaing	Staff Officer	Planning and Statistics Division
32.	U Phone Htut	Staff Officer	Planning and Statistics Division
33.	U Zaw Zaw Naing	Staff Officer	Plantation and Natural Forest Division
34.	U Moe Aung	Staff Officer	Planning and Statistics Division
35.	Dr. Chaw Chaw Sein	Assistant Lecturer	University of Forestry
36.	U Thant Shin	Assistant Lecturer	University of Forestry
37.	U Beli Ne Win	Research Assistant - 2	Forest Research Institute
38.	Daw Thida Swe	Research Assistant - 2	Forest Research Institute
39.	Daw Phyu Phyu Swe	Research Assistant - 2	Forest Research Institute
40.	Daw Nyo Mi Htun	Range Officer	Training and Research Development Division
41.	U Pyi Soe Aung	Range Officer	Nature and Wildlife Conservation Division
42.	U Aung Thu Moe	Range Officer	Forest Research Institute

Representative from Line Ministry

No	Name	Position	Organization / Department
1.	U Aung Myint Than	Director	Planning Department
2.	U Saw Win	Deputy Director	Settlement and land Record Department
3.	U Khin Maung San	Assistant Director	General Administrative Department
4.	Daw That Htar Su Hlaing	Staff Officer	Department of Meteorology & Hydrology

NGOs

No	Name	Position	Organization / Department
1.	U Maung Maung Pyone	Secretary	Biodiversity and Nature Conservation Association (BANCA)
2.	Dr. Khin Lay Swe	Pro – Rector (Ret.)	Ecosystem Conservation and Community Development Initiative (ECCDI)
3.	U Kyaw Thin Latt	RS/GIS coordinator	Wildlife Conservation Society (WCS)

Proceeding of the Inception Wrokshop

opfawmjyKefwD;ifESifh opfawmtwef;tpm;uqif;jcif;rSaxGufvTwfrIavQmhcsjcif; (REDD+) pDrHudef; (ITTO RED-PD 038/11 Rev. 3) ueOD;vkyfief;aqG;aEG;yGJG ywf0ef;usif xdef;odrf;a&;ESifh opfawma&;&m 0ef;uD;Xme? opfawmOD;pD;Xmeudk &nf&G,fí a'oqkdif&m pGrf;aqmif&nf jrifhwif;a&;

၂၆–၁၂–၂၀၁၂ ရက်နေ့၊ နံနက် (၀၈း၃၀) နာရီ၊ အင်ကြင်းခန်းမ၊ သစ်တောဦးစီးဌာန

ကြွရောက်လာကြသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာ ဝန်ကြီးဌာနမှ ဒုတိယဝန်ကြီး များ၊ ဌာနဆိုင်ရာ အကြီးအကဲများ၊ ဆက်စပ်ဝန်ကြီးဌာနများနဲ့ ကုလသမဂ္ဂအဖွဲ့အစည်းများမှ ကိုယ်စား လှယ်များ၊ အပြည်ပြည်ဆိုင်ရာ သစ်နှင့်ပတ်သက်သော အဖွဲ့အစည်း (International Tropical Timber Organization - ITTO) မှ ကိုယ်စားလှယ်များ၊ အစိုးရမဟုတ်သော အဖွဲ့အစည်းများမှ ပုဂ္ဂိုလ် များနဲ့ ကြွရောက်လာသော ဧည့်သည်တော်များ အားလုံး ကိုယ်စိတ်နှစ်ဖြာ ကျန်းမာချမ်းသာစေကြောင်း ဆုတောင်းမေတ္တာပို့သရင်း နှုတ်ခွန်းဆက်သအပ်ပါတယ်။

ယခု အခမ်းအနားကတော့ ''အပြည်ပြည်ဆိုင်ရာ သစ်နှင့်ပတ်သက်သော အဖွဲ့အစည်း (ITTO) နဲ့ ပူးပေါင်းဆောင်ရွက်မယ့် သစ်တောပြုန်းတီးခြင်းနှင့် သစ်တောအတန်းအစား ကျဆင်းခြင်းမှ ကာဗွန်ထုတ် လွှတ်မှု လျှော့ချခြင်းဆိုင်ရာ လူ့စွမ်းအားအရင်းအမြစ် ဖွံ့ဖြိုးရေးစီမံကိန်း (Capacity Building for Development REDD-plus Activities in the Context of Sustainable Forest Management) ရဲ့ ကနဦးအလုပ်ရုံဆွေးနွေးပွဲ''ဖြစ်ပါတယ်။ အလုပ်ရုံဆွေးနွေးပွဲ ဖွင့်ပွဲအခမ်းအနားကို အခုလို စုံစုံလင်လင် တက်ရောက်လာကြတဲ့အတွက် အားလုံးကို အထူးကျေးဇူးတင်ပါတယ်။

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ITTO နဲ့ ပူးပေါင်းဆောင်ရွက်မည့် REDD+ စီမံကိန်းနဲ့ ပတ်သက်ပြီး အနည်းငယ်ပြောကြားလိုပါတယ်။ မြန်မာနိုင်ငံဟာ ၁၉၉၃ ခုနှစ်မှာ ITTO ရဲ့အဖွဲ့ဝင်နိုင်ငံ တစ်နိုင်ငံဖြစ်ခဲ့ပြီး သစ်တောကဏ္ဍ စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးတိုးတက်ရေးအတွက် စီမံကိန်းများကို ပူးပေါင်းအကောင်အထည်ဖော် ဆောင်ရွက်ခဲ့ပါတယ်။

၁၉၉၇ ခုနှစ်မှာ မြန်မာ့လူသုံးနည်း သစ်မျိုးများ ကမ္ဘာ့ဈေးကွက်သို့ မိတ်ဆက်ခြင်းစီမံကိန်းကို စတင် အကောင်အထည်ဖော်ခဲ့ပြီး ယခုလက်ရှိ REDD+ လူ့စွမ်းအား အရင်းအမြစ် ဖွံ့ဖြိုးရေးစီမံကိန်း အပါအဝင် စီမံကိန်း ၈ ခုကို ပူးပေါင်းအကောင်အထည်ဖော် ဆောင်ရွက်နိုင်ခဲ့ပါတယ်။ ရန်ပုံငွေအားဖြင့် အမေရိကန် ဒေါ်လာ ၂.၄ သန်းကျော် ထောက်ပံ့ပေးခဲ့ပါတယ်။

ယခု စီမံကိန်းကို ၂၀၁၂ ခုနှစ်၊ နိုဝင်ဘာလအတွင်း ဂျပန်နိုင်ငံ၊ ယိုကိုဟားမားမြို့မှာ ကျင်းပတဲ့ ၄၈ ကြိမ်မြောက် International Timber Council အစည်းအဝေး တက်ရောက်စဉ်မှာ ITTO, Executive Director, Dr. Emmanuel Ze Maka နှင့်အတူ လက်မှတ်ရေးထိုးခဲ့ပါတယ်။ စီမံကိန်းကာလကတော့ ၂၀၁၂ ခုနှစ်၊ ဒီဇင်ဘာလ (၁) ရက်နေ့ကစတင်ပြီး ၂၀၁၅ ခုနှစ်၊ နိုဝင်ဘာလ ၃၀ ရက်နေ့အထိ (၃)နှစ် တိတိ ဖြစ်ပါတယ်။ ပထမအကြိမ် စီမံကိန်းလမ်းညွှန်ကြီးကြပ်မှုကော်မတီ အစည်းအဝေးကို ၂၀၁၂ ခုနှစ်၊

ဒီဇင်ဘာလ ၁၉ ရက်နေ့မှာ သစ်တောဦးစီးဌာနမှာ ကျင်းပခဲ့ပြီး စီမံကိန်းအောင်မြင်စွာ အကောင်အထည်ဖော်နိုင်ရေးအတွက် နှစ်စဉ်လုပ်ငန်းအစီအစဉ်များ (Yearly Plan of Operation) ကို ရေးဆွဲအတည်ပြုခဲ့ပါတယ်။ စီမံကိန်းကာလအတွင်း အကောင်အထည်ဖော်မယ့် လုပ်ငန်းတွေကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာဝန်ကြီးဌာန လက်အောက်ရှိ ဦးစီးဌာနများ၊ ဆက်စပ်ဝန်ကြီးဌာနများ၊ အစိုးရမဟုတ်သော အဖွဲ့အစည်းများ၊ ဒေသခံပြည်သူများနဲ့ Stakeholder များအားလုံး သိရှိနိုင်စေဖို့အတွက် ယခုလို ကနဦးအလုပ်ရုံဆွေးနွေးပွဲ ကျင်းပရခြင်း ဖြစ်ပါတယ်။

စီမံကိန်းမှာ ပါဝင်တဲ့ အဓိကလုပ်ငန်းတွေကတော့ REDD+ နဲ့ စဉ်ဆက်မပြတ် သစ်တောစီမံအုပ်ချုပ်လုပ်ကိုင်မှုအတွက် လူစွမ်းအားအရင်းအမြစ် ဖွံ့ဖြိုးတိုးတက်ရေးလုပ်ငန်းများ၊ သိမြင်နိုးကြားမှု တိုးပွားလာစေရေးလုပ်ငန်းများ၊ အဖွဲ့အစည်းဆိုင်ရာ စွမ်းဆောင်ရည် တိုးမြှင့်ရေးလုပ်ငန်းများ၊ နိုင်ငံအဆင့် REDD+ မဟာဗျူဟာရေးဆွဲရေး လုပ်ငန်းများ၊ သစ်တောကာဗွန်တိုင်းတာရေးနဲ့ သစ်တောကာဗွန်ထုတ်လွှတ်မှု ရည်ညွှန်းပမာဏ (Reference Emissions Level) သတ်မှတ်ရေးလုပ်ငန်းများ ဖြစ်ပါတယ်။

ဒေသခံပြည်သူများ ပူးပေါင်းပါဝင်တဲ့ သဘာဝတောများ ထိန်းသိမ်းကာကွယ်ရေးနဲ့ ကျေးလက်ဒေသ ဖွံ့ဖြိုးရေး လုပ်ငန်းများကိုလည်း ပေါင်းစပ်ဆောင်ရွက်သွားမှာ ဖြစ်ပါတယ်။ REDD+လုပ်ငန်းစဉ်များသာမက စဉ်ဆက်မပြတ် သစ်တောစီမံအုပ်ချုပ် လုပ်ကိုင်မှု လုပ်ငန်းစဉ်များနဲ့ ကျေးလက်ဒေသ ဖွံ့ဖြိုးရေးလုပ်ငန်းစဉ်များကိုပါ အထောက်အကူပြုမယ့် လူစွမ်းအားအရင်းအမြစ် ဖွံ့ဖြိုးရေးစီမံကိန်း တစ်ခုဖြစ်ကြောင်း ပြောကြားလိုပါတယ်။

{nTo nawmfsm;ciAsm;

ရာသီဥတုပြောင်းလဲမှု လျော့ပါးသက်သာစေဖို့ အဓိကရည်မှန်းပြီး ကမ္ဘာနှင့်အဝန်း သစ်တောကြွယ်ဝတဲ့ ဖွံ့ဖြိုးဆဲနိုင်ငံများမှာ REDD-plus လုပ်ငန်းတွေကို အကောင်အထည်ဖော်ဖို့ ကြိုးပမ်းလျက်ရှိပါတယ်။ REDD-plus လုပ်ငန်းတွေဆိုတာကတော့ သစ်တောပြုန်းတီးခြင်းနှင့် သစ်တောအတန်းအစား ကျဆင်းခြင်းအား တားဆီးကာကွယ်ခြင်း၊ သစ်တောများအား စဉ်ဆက်မပြတ် စီမံအုပ်ချုပ်ခြင်း၊ သစ်တောများထိန်းသိမ်းခြင်းနဲ့ သစ်တောစိုက်ခင်း တည်ထောင်ခြင်းလုပ်ငန်းတွေပဲ ဖြစ်ပါတယ်။

REDD-plus ရဲ့ အခြေခံသဘောသဘာဝကတော့ သစ်တောပြုန်းတီးခြင်းနဲ့ သစ်တောအတန်းအစား ကျဆင်းခြင်းမှ ကာဗွန်ထုတ်လွှတ်မှု အမှန်တကယ် လျော့ချနိုင်တဲ့ ဖွံ့ဖြိုးဆဲနိုင်ငံများကို လျော့ချနိုင်တဲ့ ပမာဏအလိုက် Carbon Credit အဖြစ် ငွေကြေးတန်ဖိုး သတ်မှတ်ပြီး ထောက်ပံ့ကူညီမှုပြုလုပ်မယ့် လုပ်ငန်းစဉ်ပဲ ဖြစ်ပါတယ်။

တစ်နည်းအားဖြင့် အပင်များမှာ သိုလှောင်ထားတဲ့ ကာဗွန်ပမာဏအတွက် ငွေကြေးတန်ဖိုးတွက်ချက်ဖော်ပြပြီး သစ်တောများကို ခုတ်လှဲခြင်းထက် ပင်ထောင်အတိုင်း ဆက်လက်တည်ရှိစေရန် ထိန်းသိမ်းကာကွယ်ခြင်းက ပိုမိုတန်ဖိုးကြီးမားကြောင်း သိစေဖို့နဲ့ သစ်ထုတ်ရောင်းချသကဲ့သို့ ဝင်ငွေရရှိစေဖို့ ဆောင်ရွက်ခြင်းဖြစ်ပါတယ်။

ယနေ့အချိန်အထိ အာရှနှင့်ပစိဖိတ်ဒေသမှ ဖွံ့ဖြိုးဆဲနိုင်ငံပေါင်း (၁၂)နိုင်ငံအပါအဝင် လက်တင်အမေရိက၊ အာဖရိကနဲ့ ကရစ်ဘီယန်ဒေသမှ နိုင်ငံပေါင်း ၄၄ နိုင်ငံဟာ UN-REDD Programme ရဲ့ အဖွဲ့ဝင်နိုင်ငံ (Partner Country)အဖြစ် ပါဝင်ပြီး REDD-plus လုပ်ငန်းများ ဆောင်ရွက်လျက်ရှိပါတယ်။

မြန်မာနိုင်ငံအနေနဲ့ ၂၀၁၁ ခုနှစ်၊ နိုဝင်ဘာလမှာ UN-REDD Programme ရဲ့ အဖွဲ့ဝင်နိုင်ငံဖြစ်လာခဲ့ပြီး အပြည်ပြည်ဆိုင်ရာ အဖွဲ့အစည်းများနဲ့ ပူးပေါင်းဆောင်ရွက်မှုများကို စတင်ခဲ့ပါတယ်။

REDD+ လုပ်ငန်းစဉ်များဟာ ရာသီဥတုပြောင်းလဲမှုနဲ့ ကမ္ဘာကြီးပူနွေးလာမှုကို လျော့ချနိုင်မယ့် နည်းလမ်းကောင်းတစ်ခု ဖြစ်တဲ့အပြင် ဆက်စပ်အကျိုးကျေးဇူးများဖြစ်တဲ့ ဇီဝမျိုးစုံမျိုးကွဲများ ထိန်းသိမ်းခြင်း၊ ရေလည်ပတ်မှုစနစ်အား ထိန်းကျောင်းပေးခြင်း၊ မြေဆီလွှာတိုက်စားမှုမှ ကာကွယ်ပေးခြင်း၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဝန်ဆောင်မှု တိုးပွားစေခြင်း၊ ကျေးလက်ဒေသ ဖွံ့ဖြိုးခြင်းစတဲ့ အကျိုးကျေးဇူးတွေကိုလည်း ရရှိစေနိုင်တဲ့ လုပ်ငန်းစဉ်များ ဖြစ်တဲ့အတွက် ကမ္ဘာနှင့်အဝန်း စိတ်ဝင်စားစွာ အကောင်အထည်ဖော် ဆောင်ရွက်လာခြင်း ဖြစ်ပါတယ်ဆိုတာ ပြောကြားလိုပါတယ်။

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REDD+ လုပ်ငန်းစဉ်များ ထိရောက်စွာ အကောင်အထည်ဖော်နိုင်ဖို့အတွက် လူစွမ်းအား အရင်းအမြစ် ဖွံ့ဖြိုးရေးလုပ်ငန်းများ မဖြစ်မနေ လိုအပ်ပါတယ်။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောကဏ္ဍ သာမက နယ်ပယ်အသီးသီးအတွက် စဉ်ဆက်မပြတ် အရှိန်အဟုန်နဲ့ ဆောင်ရွက်ကြရမယ့် လုပ်ငန်းများ ဖြစ်ပါတယ်။

ခေတ်စနစ်နဲ့အညီ တိုးတက်ပြောင်းလဲလာတဲ့ Concept နဲ့ ရှုမြင်ပုံများ၊ အတွေးအခေါ် အယူအဆများ၊ နည်းပညာများ၊ ရုပ်ဝတ္ထုပစ္စည်းများကို နားလည်တတ်ကျွမ်းဖို့၊ သယံဇာတများ အကျိုးရှိရှိ အသုံးပြုနိုင်ဖို့၊ နိုင်ငံတကာနှင့် တန်းတူရင်ပေါင်တန်းနိုင်ဖို့အတွက် လူတစ်ဦးချင်းစီရဲ့ စွမ်းဆောင်ရည်တွေကို တိုးတက်ထက်မြက်နေအောင် ဆောင်ရွက်ကြရမှာ ဖြစ်ပါတယ်။ အလားတူပဲ Institutional Strengthering လို့ခေါ်တဲ့ အဖွဲ့အစည်းဆိုင်ရာ စွမ်းဆောင်ရည်ကိုလည်း တိုးတက်ကျစ်လစ် ခိုင်မာနေအောင် တစိုက်မတ်မတ် ဆောင်ရွက်ကြရမှာ ဖြစ်ပါတယ်။

ခေတ်နဲ့အညီ ပေါ်ပေါက်လာတဲ့ လုပ်ငန်းစဉ်တွေကို နိုင်ငံတကာနဲ့ ရင်ပေါင်တန်းပြီး ဆောင်ရွက်ကြရမှာ ဖြစ်သလို မိမိဌာနရဲ့ ပင်မလုပ်ငန်းတွေကို အထောက်အပံ့ ပြုပေးနိုင်အောင် ပေါင်းစပ်ဆောင်ရွက်ကြရမှာ ဖြစ်ပါတယ်။ တစ်ဆက်တည်းမှာပဲ နိုင်ငံတကာ ကူညီထောက်ပံ့တဲ့ ရန်ပုံငွေကြေးနဲ့ နည်းပညာအကူအညီတွေကို ထိထိရောက်ရောက် အကျိုးရှိရှိ စနစ်တကျ အသုံးချကြဖို့ မှာကြားလိုပါတယ်။

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ကမ္ဘာ့သစ်တောသယံဇာတများ ယိုယွင်းပျက်စီးမှုများကြောင့် ယနေ့အချိန်မှာ ပတ်ဝန်းကျင်ဆိုင်ရာ ပြဿနာများ ကမ္ဘာနှင့်အဝန်း ရင်ဆိုင်ကြုံတွေ့လျက် ရှိပါတယ်။ ကာဗွန်ဒိုင်အောက်ဆိုက် ဓာတ်ငွေ့ထုတ်လွှတ်တဲ့ အရင်းအမြစ်များစွာထဲက အဓိကအရင်းအမြစ်တစ်ခုကတော့ သစ်တောများ ဖြစ်ပါတယ်။ သစ်တောပြုန်းတီးခြင်းနဲ့ သစ်တောအတန်းအစား ကျဆင်းခြင်းကနေ ထုတ်လွှတ်တဲ့ ကာဗွန်ဒိုင်အောက်ဆိုက် ပမာဏဟာ ကဏ္ဍအသီးသီးက ထုတ်လွှတ်တဲ့ စုစုပေါင်းပမာဏရဲ့ (၂၀)ရာခိုင်နှုန်းရှိပြီး ဒုတိယအများဆုံးထုတ်လွှတ်တဲ့ အရင်းအမြစ်လည်း ဖြစ်ပါတယ်။

ဒါကြောင့်လည်း ၂၀၁၂ ခုနှစ်၊ ဇွန်လမှာ ဘရာဇီးလ်နိုင်ငံ၊ ရီယိုဒီဂျေနေးရိုးမြို့မှာ ကျင်းပခဲ့တဲ့ Rio+20 ကမ္ဘာ့မြေထိပ်သီးညီလာခံ ထုတ်ပြန်ကြေညာချက်မှာ ''သစ်တောများသည် လူများအတွက် လူမှု

ရေး၊ စီးပွားရေး၊ လူမှုရေးအကျိုးကျေးဇူးများ ဖြစ်ထွန်းစေပြီး နိုင်ငံ၏ စဉ်ဆက်မပြတ်ဖွံ့ဖြိုးတိုးတက်မှုကို အထောက်အကူပြုကြောင်း၊ ဖွံ့ဖြိုးဆဲနိုင်ငံများတွင် သစ်တောပြုန်းတီးခြင်းနှင့် သစ်တောအတန်းအစား ကျဆင်းခြင်းမှ ကာဗွန်ထုတ်လွှတ်မှု လျော့ချခြင်းနှင့် သစ်တောကာဗွန် တိုးပွားစေရေးလုပ်ငန်းများ အကောင်အထည်ဖော်နိုင်ရေးအတွက် ကြိုးပမ်းဆောင်ရွက်မှုများကို အသိအမှတ်ပြု အားပေးပါကြောင်း အတိအလင်း ဖော်ပြခဲ့ပါတယ်။

ယခုအချိန်မှာ နိုင်ငံတော်အစိုးရအနေနဲ့ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးကို အလေးထားဆောင်ရွက်လျက်ရှိပြီး အစိမ်းရောင်စီးပွားရေးနဲ့ အစိမ်းရောင်ဖွံ့ဖြိုးတိုးတက်မှုကို ဦးတည်တဲ့ မူဝါဒများ၊ ပြုပြင်ပြောင်းလဲရေး မဟာဗျူဟာများကို ချမှတ်အကောင်အထည်ဖော် ဆောင်ရွက်နေတာကြောင့် REDD+ လုပ်ငန်းစဉ်များ ကျယ်ကျယ်ပြန့်ပြန့် အကောင်အထည်ဖော်ဖို့အချိန်အခါကောင်းဖြစ်တယ်ဆိုတာ အလေးအနက်ပြောကြားလိုပါတယ်။

သစ်တောဦးစီးဌာနအနေနဲ့ ITTO နဲ့ပူးပေါင်းပြီး REDD-plus လုပ်ငန်းစဉ်များဆိုင်ရာ လူစွမ်းအား အရင်းအမြစ် ဖွံ့ဖြိုးရေးစီမံကိန်းကို စတင်အကောင်အထည်ဖော် ဆောင်ရွက်သကဲ့သို့ Korea Forest Service နဲ့ပူးပေါင်းပြီး REDD-plus ရှေ့ပြေးသရုပ်ပြစီမံကိန်း၊ ဂျပန်နိုင်ငံအခြေစိုက် Asia Air Co., Ltd နဲ့ပူးပေါင်းပြီး REDD-plus အထောက်အကူပြု အဝေးမှစူးစမ်းခြင်းနှင့် ပထဝီဝင်သတင်း အချက်အလက်နည်းပညာ (RS/GIS) ဆိုင်ရာ ပူးပေါင်းဆောင်ရွက်ရေး စီမံကိန်း၊ UN-REDD Programme နဲ့ပူးပေါင်းပြီး REDD-Plus လမ်းပြမြေပုံရေးဆွဲရေး၊ နိုင်ငံအဆင့် မဟာဗျူဟာရေးဆွဲရေး စီမံကိန်းတို့ကို ပူးပေါင်းဆောင်ရွက်လျက်ရှိပါတယ်။

ဒါ့အပြင် နော်ဝေနိုင်ငံ ပတ်ဝန်းကျင်ရေးရာ ဝန်ကြီးဌာနနဲ့ ပူးပေါင်းပြီး REDD-plus လုပ်ငန်းစီမံကိန်းများ အကောင်အထည်ဖော်ဆောင်ရွက်ဖို့ မကြာသေးခင်က သွားရောက်ခဲ့တဲ့ ခရီးစဉ်အတွင်းမှာ သဘောတူညီမှု ရရှိထားပြီးဖြစ်သလို အခြားအပြည်ပြည်ဆိုင်ရာ အဖွဲ့အစည်းများနဲ့လည်း ပူးပေါင်းဆောင်ရွက်ဖို့ ဆွေးနွေးညှိနှိုင်းလျက်ရှိကြောင်း အသိပေးပြောကြားလိုပါတယ်။

ပြည်သူများအားလုံးနဲ့ Stakeholders များအားလုံး ပူးပေါင်းပါဝင်နိုင်ရေး၊ ဆင်းရဲနွမ်းပါးမှု လျော့ချရေးနဲ့ ကျေးလက်ဒေသဖွံ့ဖြိုးရေးအတွက် ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင် သစ်တောလုပ်ငန်းများ၊ လူမှုသစ်တောလုပ်ငန်းများ၊ သီးနှံသစ်တောရေးရောနှော စိုက်ပျိုးရေးလုပ်ငန်းများကို REDD-plus လုပ်ငန်းစဉ်များမှာ ချိတ်ဆက်ပြီး ကျယ်ကျယ်ပြန့်ပြန့် ဆောင်ရွက်သွားမှာဖြစ်ပါတယ်။

အစိုးရအဖွဲ့အစည်း၊ မြို့ပြလူမှုအဖွဲ့အစည်း၊ အစိုးရမဟုတ်သော အဖွဲ့အစည်းများနဲ့ ပြည်သူများ ဟန်ချက်ညီညီ ပူးပေါင်းပြီး Public Private လုပ်ငန်းစဉ်ကို ပြည့်ပြည့်ဝဝ အကောင်အထည်ဖော် ဆောင်ရွက်သွားမှာဖြစ်ကြောင်း ထပ်လောင်းပြောကြားလိုပါတယ်။

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ယခုကျင်းပတဲ့ ကနဦးအလုပ်ရုံဆွေးနွေးပွဲကို ရည်ရွယ်ချက် (၃)ခုထားရှိပြီး ကျင်းပသွားမှာဖြစ်ပါတယ်။ အဲဒီ ရည်ရွယ်ချက်တွေကတော့–

– စီမံကိန်းလုပ်ငန်းများအား ပိုမိုထိရောက်စွာ အကောင်အထည်ဖော်နိုင်ရေးအတွက် ညှိနှိုင်းဆွေးနွေးရန်။

– စဉ်ဆက်မပြတ် သစ်တောစီမံအုပ်ချုပ်လုပ်ကိုင်မှုအား အထောက်အကူပြုစေရန်နဲ့

– REDD-plus ၏ စီးပွားရေးနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ အကျိုးကျေးဇူးများကို သိမြင်နားလည်ပြီး ပူးပေါင်းညှိနှိုင်းဆောင်ရွက်မှု အရှိန်အဟုန်တိုးမြှင့်ရန်နှင့် ဆက်စပ်ပတ်သက်သူများအားလုံး၏ စွမ်းဆောင်ရည် တိုးတက်လာစေရန်ဆိုတဲ့ ရည်ရွယ်ချက်များ ထားရှိပြီး ကျင်းပသွားမှာ ဖြစ်ပါတယ်။

အလုပ်ရုံဆွေးနွေးပွဲမှာ REDD-plus အကောင်အထည်ဖော်နိုင်ရေးအတွက် အရေးအကြီးဆုံးဖြစ်တဲ့ နည်းပညာစာတမ်း (၆)စောင်ကိုကို သစ်တောဦးစီးဌာန၊ ITTO နဲ့ Seoul National University တို့မှ ကျွမ်းကျင်သူများက ဖတ်ကြားမှာ ဖြစ်ပါတယ်။ ဒါ့အပြင် REDD-plus လုပ်ငန်းစဉ်များ ဖွံ့ဖြိုးရေး၊ စီမံကိန်းလုပ်ငန်းများ ထိရောက်စွာ အကောင်အထည်ဖော်နိုင်ရေးအတွက် အဖွဲ့ ၃ ဖွဲ့ခွဲပြီး ဆွေးနွေးဖို့စီစဉ်ထားကြောင်း သိရပါတယ်။ REDD-plus လုပ်ငန်းများကို အခြေပြုပြီး သစ်တောကဏ္ဍအတွက် လူစွမ်းအား အရင်းအမြစ်ဖွံ့ဖြိုးရေး လုပ်ငန်းများ၊ စဉ်ဆက်မပြတ် သစ်တောစီမံအုပ်ချုပ်ရေး အထောက်အကူပြုလုပ်ငန်းများ၊ ကျေးလက်ဒေသ ဖွံ့ဖြိုးရေးလုပ်ငန်းများကို ဆွေးနွေးဖော်ထုတ်မှာ ဖြစ်တဲ့အတွက် အကျိုးကျေးဇူးများမယ့် ဆွေးနွေးပွဲတစ်ခု ဖြစ်တယ်ဆိုတာ ပြောကြားလိုပါတယ်။

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နိဂုံးချုပ်အနေနဲ့ အခုကျင်းပတဲ့ အလုပ်ရုံဆွေးနွေးပွဲကို အောင်မြင်စွာကျင်းပနိုင်ရေးနဲ့ REDD-plus ဆိုင်ရာ လူစွမ်းအားအရင်းအမြစ် ဖွံ့ဖြိုးတိုးတက်ရေးစီမံကိန်း အကောင်အထည်ဖော်နိုင်ရေးအတွက် ငွေကြေးအထောက်အပံ့ပေးတဲ့ အပြည်ပြည်ဆိုင်ရာ သစ်နှင့်ပတ်သက်သောအဖွဲ့အစည်း (ITTO) နဲ့တကွ အလုပ်ရုံဆွေးနွေးပွဲကို အချိန်ပေးတက်ရောက်လာကြတဲ့ ဌာနဆိုင်ရာအသီးသီးမှ ကိုယ်စားလှယ်များ၊ ကုလသမဂ္ဂအဖွဲ့အစည်းများမှ ပုဂ္ဂိုလ်များ၊ အစိုးမရဟုတ်သော အဖွဲ့အစည်းများမှ ကိုယ်စားလှယ်များအားလုံးကို အထူးကျေးဇူးတင်ကြောင်း ပြောကြားလိုပါတယ်။ ဒီအလုပ်ရုံဆွေးနွေးပွဲဟာ REDD-plus လုပ်ငန်းများ အရှိန်အဟုန်နဲ့ ဖွံ့ဖြိုးလာစေရေး၊ စဉ်ဆက်မပြတ် သစ်တောစီမံအုပ်ချုပ်ရေးနဲ့ ကျေးလက်ဒေသဖွံ့ဖြိုးရေး အတွက် လိုအပ်နေတဲ့ လူစွမ်းအားအရင်းအမြစ်တွေကို ဖွံ့ဖြိုးတိုးတက်စေဖို့ အချိန်ကိုက်ထွက်ပေါ်လာတဲ့ အလုပ်ရုံဆွေးနွေးပွဲ ဖြစ်ရုံသာမက ဆက်စပ်ဝန်ကြီးဌာနများနဲ့ အစိုးမရမဟုတ်သော အဖွဲ့အစည်းများနဲ့ ပူးပေါင်းပြီး အခွင့်အလမ်းကောင်းတွေ ဖော်ဆောင်နိုင်မယ့် ဆွေးနွေးပွဲလည်း ဖြစ်ပါတယ်။ ဒါကြောင့် တက်ရောက်လာကြသူများအနေနဲ့ အသေးစိတ်ညှိနှိုင်း တိုင်ပင်ဆွေးနွေးကြပါ။ ရလဒ်ကောင်းတွေ ထွက်ပေါ်လာအောင် အားသွန်ခွန်စိုက် ကြိုးပမ်းကြပါလို့ တိုက်တွန်းပြောကြားရင်း နိဂုံးချုပ်လိုက်ပါတယ်။

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Opening remarks by Dr Ma Hwan-Ok, ITTO
National Workshop on REDD+ Strategy Development
26 December 2012, Nay Pyi Taw, Myanmar

Dr. Myint Oo, Rector of the University of Forestry,

U Zaw Win, Deputy Director General of Forest Department,

Prof Youn Yeo-Chang from Seoul National University, President of the Korea Forest Science Society,

Distinguished guests, Ladies and Gentlemen,

It is, indeed, my great honour and pleasure, on behalf of International Tropical Timber Organization (ITTO), to welcome you all on the occasion of the opening of the National Workshop on REDD+ Strategy Development which is being organizing by the Ministry of Environmental Conservation and Forestry of Myanmar under ITTO project PD 38/11 "Capacity Building for Developing REDD+ Activities in the Context of Sustainable Forest Management".

The project agreement was signed by H.E. U Win Tun, Minister of Environmental Conservation and Forestry and Emmanuel Ze Meka, ITTO Executive Director at the occasion of the 48th Session of the International Tropical Timber Council which was held in Yokohama, Japan on 5-10 November this year. In his statements at this Council session in Yokohama, the Honourable Minister commended ITTO's contribution to sustainable forest management in its member countries through the adoption of guidelines and internationally agreed policies as well as the implementation of projects in the field. The Honourable Minister noted that since Myanmar become a member of ITTO in 1993, ITTO had implemented various projects on SFM in the country and underlined the importance of the current REDD+ capacity building project in the sustainable development of the forestry sector.

In light of this, I would like to express our deep gratitude for the Honourable Minister and all colleagues in Myanmar who have made great efforts to enhance the partnership between ITTO and Myanmar. In fact, ITTO began our project work with Myanmar by initiating projects on utilization of lesser-used species and wooden furniture manufacturing in 1997 just 15 years ago. After these initial projects, our partnership have been expanded to the utilization of bamboo, in-site and ex-site conservation of teak, community-based agro-forestry development, utilization of plantation teak and an assessment of mangrove restoration in Cyclone Nargis affected in Ayeyarwady Delta area. I have been privileged to observe the dedicated work of many project

teams and invaluable contributions of various stakeholders which have led to many lessons and success stories.

We are very confident that under the leadership of the Forest Department, the REDD+ capacity building project will contribute not only to the development of national REDD+ strategy but also to the strengthening of institutional capacity for the forest resources monitoring system in collaboration with relevant line Ministries, academic institutions and non-governmental organizations. Moreover, we believe that the project will contribute to achieving synergy between REDD+ and SFM by harmonizing technical assistance and capacity building. It is also hoped that it will open a new chapter in the country for enhancing environmental services rendered by tropical forests to support the advancement of SFM in the country.

Distinguished guests, ladies and gentlemen,

We note that sustainable forest management means more than just the production of timber and non-timber forest products. It also consists of social and environmental sustainability. ITTO has recognized that SFM of natural tropical forests is the most challenging task, as natural tropical forests are not competitive in timber production in contrast to many forests in the temperate and boreal zones. We believe that markets should be the main driver of SFM implementation by providing the required investment but we have seen that market forces are actually driving deforestation in the tropics. A lack of financial remuneration for the many ecosystem services provided by natural tropical forests is one of the reasons for their low financial competitiveness against other land uses such as agriculture and cattle-ranching.

We noted high international attention has given to the role of tropical forests in climate change mitigation and adaptation as well as biodiversity conservation. For instance, international climate change negotiations at COP 16 of in Cancun, Mexico and COP 17 in Durban, South Africa supported the phased REDD+ mechanism to reduce forest-based emissions and enhance forest carbon sinks with advancement of MRV, and social-environmental safeguards. The recent COP 18 in Doha, Qatar decided to undertake a work programme on results-based REDD+ finance to contribute to the ongoing efforts to improve the effectiveness of finance for REDD+ activities.

Distinguished guests, ladies and gentlemen,

As a follow-up on previous national level workshops on REDD+ in 2010 and 2011 which were assisted by UNDP-Myanmar, Korea Forest Services and UN-REDD Programme, this national workshop is designed to increase the understanding of REDD+ opportunities and challenges by updating recent negations and discussions on REDD+ under the UNFCCC. It also aims at identifying and analyzing lessons from the implementation of forest management in the country in the context of REDD+ strategy and action plan development and implementation.

Since Myanmar has long history of systematic forest management practices, there will be many important lessons which can contribute to the development of a sound national REDD+ strategy and action plan to provide a comprehensive framework towards reducing green house-gas emissions from forests and increasing carbon sequestration but also enhancing co-benefits such as biodiversity conservation and forest-dependent local communities development.

It is hoped that this workshop will contribute to analyzing existing draft REDD+ country strategies and developing an action plan in the context of SFM since achieving REDD+ objectives will be facilitated by building on best-practice guidelines on various aspects of SFM.

Distinguished experts, Ladies and gentlemen,

Last but not least, I wish to put on record ITTO's profound appreciation to the donor to the ITTO project, namely the Governments of Norway, Switzerland, USA and Japan for raising the funds required to make this important project possible in Myanmar. In addition, I would like to express my sincere appreciation to the Ministry of Environmental Conservation and Forestry and all participants for their valuable cooperation and support in organizing this workshop. I would like to conclude my remarks by wishing each and every one of you all the best for the coming year.

Thank you for your kind attention.

Workshop on Development of REDD+ National Strategies in Myanmar
Jointly Organized by Forest Department and International Tropical Timber Organization (ITTO)

Current Status of REDD+ Readiness Preparation in Myanmar

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January, 2013

Current Status of REDD+ Readiness Preparation in Myanmar

1. Introduction

The Republic of the Union of Myanmar is geographically located in Southeast Asia between latitudes 9°32' and 28°31'N and longitudes 92°10'E and 101°11'E. Myanmar is bordered on the north and northeast by China, on the east and southeast by Laos and Thailand, on the south by the Andaman Sea and the Bay of Bengal and on the west by Bangladesh and India.

The total area of Myanmar is 676,577 km^2. Myanmar is endowed with a rich diversity of habitat types arising largely from its unusual ecological diversity. About 47% of the country's total land area is still covered with natural forests. Myanmar has been protecting and conserving its diverse biological resources on a sustainable basis. Myanmar's forests are socially and economically significant to the country. As a matter of fact, over 70% of the country's total population is rural and dependent on forest resources for basic needs such as food, fodder, fuel, and shelter. Relative abundance of natural forests in the country is a reflection of the consistent exercise of sound forest management practices for years. In Myanmar, all the lands belong to the government. However, like other developing countries, Myanmar has been facing deforestation and forest degradation due to various reasons. During the last two decades (1990 to 2010), according to FAO 2010, the loss of forest cover amounted to 0.95 percent during 1990-2010. Therefore, REDD+ Readiness Preparation is of utmost important not only to mitigate climate change but also for strengthening sustainable forest management and rural community development.

2. Forest resource based

Myanmar is rich in forest resources. The forest flora of Myanmar is diverse: it covers sub-alpine, dry and moist deciduous forests, tropical rain forests and mangrove forests. Howeve, due to the rapid deforestation rate, according to the Forest Resource Assessment (FRA 2010), the forest cover was reduced from 52% in 1997 to 47% in 2010 of the country's land total area of 676,577 km2. But Myanmar is still one of the highest in the Asia-Pacific Region. The status of forest cover is shown in Table 1 and Permanent Forest Estate (PFE) which is under the management of MOECAF in Table 2.

Table 1. Forest covers status in Myanmar (2010)

Category	Area (,000 ha)	Percentage
Closed forest	13445	19.9
Open forest	18329	27.1
Total forest	31773	47.0
Other Wooded land	20113	29.7
Other land	13869	20.5
Inland Water bodies	1 903	2.8
Total Area of Country	**67658**	**100.0**

Source: Forest Resource Assessment, 2010 (FAO)

Table2. the Permanent Forest Estate (PFE)

Category	Area (km2)	Percentage of land area
Reserve Forest	121,842.91	30.73
Protected Public Forests	40,949.60	18.0
Protected Area System	35,106.85	6.05
Permanent Forest Estate	**197,899.36**	**6.67**

Source: FRA 2010

3. Outcomes of climate change negotiations on REDD+

According to the outcomes of COP 15 which was held in Copenhagen in 2009, There are five "activities" under REDD (para 3 of FCCC/AWGLCA/2009/L.7/Add.6).

1. Reducing emissions from deforestation (RED);
2. Reducing emissions from forest degradation;
3. Conservation of forest carbon stocks;
4. Sustainable management of forest; and
5. Enhancement of forest carbon stock (AR).

In order to implement the above mentioned activities, capacity building and readiness efforts in developing countries are requested through

- identification of the drivers and the means to address deforestation, etc.;
- application of IPCC guidance and guidelines;
- establishment of national monitoring systems; and
- preparation and implementation of relevant policies and plans associated with related capacity building.

  The international communities are also requested to promote such efforts.

Cancun Agreement (2010) also suggested, in accordance with national circumstances and respective capabilities, to develop the following elements:

- A national strategy or action plan to address, inter alia, the drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards identified for ensuring the full and effective participation of relevant stakeholders, inter alia indigenous peoples and local communities;
- A national forest reference emission level and/or forest reference level or, if appropriate, as an interim measure, sub-national forest reference emission levels and/or forest reference levels;
- A robust and transparent national forest monitoring system for the monitoring and reporting of the activities;
- A system for providing information on how the safeguards are formulated;
- Developing national strategies or action plans; and
- Capacity-building, technology development and transfer and results-based demonstration activities, including consideration of the safeguards.

Myanmar, as a one of the signatory country to the UNFCCC, has been preparing for REDD+ readiness in response to the decisions of climate change conference.

4. REDD relevant policies, laws, strategies and plans

The forestry section in Myanmar Agenda 21 is an advanced document to guide sustainable forest and forestry development. However, proper implementation requires financial support, institutional strengthening, and political commitment. Apart from Agenda 21, the 1995 Myanmar Forest Policy emphasized the future development process for the forestry sector and sustainability of the forests.

The Forest Law (1992), Forest Rules (1995), Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law (1994), Community Forestry Instructions (1995), National Forestry Action Plan (1995), Criteria and Indicators for Sustainable Forest Management (1999), Format and Guidelines for District Forest Management Plans (1996), National Code of Practice for Forest Harvesting and National Framework for Environmental Law are major tools to realize forest policy. National Forest Management Plan (2001-02 to 2030-31) has been formulated as a long term plan for SFM. In order to achieve it, 63 Forest Management Units (FMU) has been formed across the country. Forests in each FMU are managed according to the Working Plan of respective FMU (District). Production Working Cycle, Protection Working Cycle, Plantation Working Cycle, Watershed Working Cycle and Local Supply/Community Forestry Working Cycle are included in each Working Plan of FMU.

5. Strategies and Plan relevant to REDD+

The Forest Department has set the strategies and plan relevant to REDD+:

1. Reservation of forest lands (Reserved Forest and Protected Public Forest) up to 30% of the country's total land area from the present status of about 18.04%.
2. Establishment of forest lands under Protected Areas System up to 10% of the country's total land area from the present status of about 6.67%.
3. Continued practice of re-afforestation programme at an annual rate of about 20,000 ha.
4. Updating of 10-year Management Plan at the district level for efficient conservation and development of forestry sector.
5. Phased-out plan to reduce logging and enhancement of forest ecosystem services
6. Initiation to introduce "polluter pays" system for the protection of forest resource.
7. Introduction of management responsibilities through community forestry and community-based forest management to rehabilitate degraded forest lands.
8. Periodical review on Forest Policy, Legislation, and Institutional Arrangement to keep pace with social preference and international priorities.
9. Continued effort and stakeholder consultation to formulate and adopt multi-sectoral national land use policy respected by all parties concerned.
10. Promoting public private partnership without compromising the carrying capacity of forest ecosystems for the well-being of future generations.

11. Promotion of wood-based industries for increased production of value-added finished products.
12. Capacity development and institutional strengthening for development of forestry sector
13. Strengthening research and development in forestry sector.

5.1 Actions relevant to REDD+ within the context of SFM

5.1.1 Forest management system

Forest management during the colonial period was solely based on teak, as teak was the most intensively studied timber species at that time. The Brandis Selection System, modified into the Myanmar Selection System in 1920, is merely a Selection-cum-Improvement system with the main features being to carefully protect the immature stock and assist it to attain maturity. It is a method of exploiting tree species of prescribed minimum harvestable girth limits from a complex multi-species forest. Forests are managed under working plans, which generally form the working circles on the basis of the objects of management and accessibility, and also on the nature and form of the forest produce required. The working circles consist of a group of reserves, which are divided into felling series for the convenience of working according to the drainage and geographical situation. The felling series are subdivided into annual coupes, which can be subdivided into compartments. The compartments are the basic management units, which are approximately 250 hectares in size. The felling series to be worked is divided into approximately 30 equally productive annual coupes. Each year, trees are selected for felling in one of these coupes and the whole felling series is therefore worked over in a felling cycle of 30 years.The prescribed girth size varies with the type of forest. In good (moist) teak forests, the diameter at breast height limit is 73 cm (7.5 ft gbh) and in poor (dry) forests, 63 cm (6.5 ft gbh).

5.1.2 Criteria and Indicators (C&I) for SFM

Identification of Myanmar's C&I for SFM at both national and Forest Management Unit (FMU) levels was completed in October 1999, and formally approved by the Ministry of Forestry. Myanmar's document, which is based on ITTO's C&I of 1998, contains 7 criteria each at both national and FMU levels. There are 78 indicators and 257 required activities at the national level, and 73 indicators and 217 activities at the FMU level, together with standards of performance for each activity. The FD has been testing the adequacy and application of Myanmar's C&I at FMU level for further improvement. The Ministry of Forestry and Forest

Resources and Environment Development Association (FREDA), a forestry-related NGO in Myanmar took this initiative with the financial and technical support from Japan Overseas Forestry Consultants Association (JOFCA).

5.1.3 Stabilizing Shifting Cultivation

It is evident that shifting cultivation is a major cause of forest depletion and degradation. It is, on the other hand, not merely an economic practice for the landless poor living in and around the forests, but it is both a cultural practice and a way of life evolved in consonance with the physiographic set up. To address this issue, a national level multi-sectoral programme of highlands reclamations has been developed and actions are underway. The program clearly encourages the upkeep of traditional land use system, customary rights and cultural values. In cooperation with other sectors, FD has been implementing activities as follow;

- Community forestry and agroforestry practices;
- Provision of improved technologies for their respective livelihood;
- Complementing traditional forest-related local knowledge;
- Recruiting shifting cultivators into routine forestry operations;
- Enhancing income-generating opportunities; and
- Provision of awareness raising campaigns and extension services.

5.1.4 Combating illegal Logging

Today illegal logging is almost under control and the measures are being intensified to meet the ultimate goal to eliminate the threat to deforestation. The following measures have been undertaking to reduce illegal logging:

(i) Strengthening enforcement of the existing forest law, rules and regulations;

(ii) Setting up the checkpoints along the main shipping routes across the country;

(iii) Inspection of logging operations to ensure that they are carried out in accordance with the procedures and prescribed rules and regulations;

(iv) Adoption of an incentive scheme for the staff and those who are actively engaged in protecting illegal logging;

(v) Forming a partnership with the institutions concerned and local communities in combating illegal logging; and

(vi) Cooperation and coordination with the neighboring countries in fighting the illegal logging along the borders (eg. ASEAN-WEN)

6. Strengthening and Enhancing Protected Area System

Although rich in biodiversity in the region, loss of biodiversity due primarily to the socio-economic pressure is unavoidable in a developing country like Myanmar. The general trend of wild animal population is appeared to be decreasing compared with their relative abundance over the past 20 or 30 years. But Myanmar is trying to conserve the habitats of wildlife species through establishment of protected areas. Therefore, there is an up-ward trend of wildlife in protected areas in general. Up till the September 2012, 36 Protected Areas, constituting about 6.67 percent have been formed and managed. Myanmar has intended to increase PAS coverage up to 10 percent of its total land area in the long run.

6.1 Afforestation and Reforestation Activities

Plantation forestry has a complementary role to natural forest in order to control deforestation and forest degradation. The objectives of plantation establishment in Myanmar have been to rehabilitate degraded forest lands, restore deforested areas and supplement various timber yields from the natural forests. Reforestation in Myanmar got momentum in early 1960s and large-scale plantation forestry begun in the 1980s. Since then the annual plantation programme has been intensified gradually till it has reached the annual planting rate of over 20,000 ha. FD establishes four types of plantations, of which local supply plantations and watershed plantations especially aim at satisfying wood-fuel demand of local communities and rehabilitation of degraded watershed areas. Private teak and other hardwood plantations started in 2005 to accelerate reforestation and to increase private investment in forestry sector.

6.2 Assessment and Monitoring of Forest Resources

The national forest inventory (NFI) is the key tool for generating country-specific emission factors (i.e. estimates of greenhouse gas emissions from forest land as a result of human activities), which will inform the compilation of the greenhouse gas inventory for the forestry sector. Myanmar has a long history of forest measurement and inventory activities. Modern-era NFI activities began in the 1980s, with the support of FAO. From 1982-2003, the NFI was based on a systematic sampling approach using an inverse L-shaped plot. Of the total 9,800 sampling units, 2,845 were designated as permanent sample plots – with the objective to re-measured these permanent ones every five years. The planned NFI cycle period was 10 years.

Due to budgetary constraints, in 2003 the NFI was redesigned to reduce sampling intensity, and based on the sampling of closed and open forest; the method now incorporates a rectangle sample plot.

Over the last 20 years, new technology has increasingly been used in assessing forest resources, including microcomputers, long-distance surveying via low- or high-resolution satellite, and Geographic Information System (GIS) and global positioning systems (GPS). Like other developing countries, Myanmar is in inadequate forest inventory resources. The accurate and updated information is very critical for SFM.

6.3 Preparation for REDD+ Readiness

6.3.1 Organizing national workshops

Myanmar is aware of REDD+ as a mechanism to create an incentive for developing countries to protect, better manage and wisely use their forest resources, contributing to the global fight against climate change.

With active participation of the NGOs, line departments and UN agencies, two national level workshops (REDD+ national level workshop in April 2010 and climate change adaptation and disaster risk reduction national level workshop in December 2010) were already organized and a number of at least 50 participated the workshops. In addition, Forest Department and Korea Forest Service (KFS) jointly organized a "Regional level workshops on REDD+" in May 2011 in Nay Pyi Taw. About 80 participants from ASEAN Member States, UN-REDD Programme, representatives from line Ministries, local NGOs and civil societies were attended.

6.3.2 Forming REDD+ Task Force

FD facilitates and formed REDD Task Force after REDD+ national level workshop. The current REDD+ Taskforce has an interim mandate to support for development of the Myanmar REDD+ Roadmap and national strategies. However, it is proposed to enlarge the future working arrangements, involving key technical representatives from Forest Department (FD), Dry Zone Greening Department (DZGD) and Myanmar Timber Enterprise (MTE), Department of Environmental Conservation, Ministry of Environmental Conservation and Forestry (MOECAF) and Ministry of Agriculture and Irrigation (MOAI) and Department of Metrology and Hydrology (DMH) for effective implementation of REDD+ readiness.

6.3.3 Community forestry programme

According to the National Constitution, all the land belongs to the State. Accordingly, forests are also owned and managed by the Government. With the support of the new Forest Law (1992), the Forest Department initiated community forestry in 1995 soon after the Community Forestry Instructions (CFIs) were issued in 1995. CFIs are a major breakthrough in forestry sector in order to keep pace with the changing socio-economic and environmental concerns. Government also opens for the investment of private sectors in forest plantations establishment in 2005. The main objective is to plant trees on barren

lands and to reforest degraded areas with the active participation on the people in order to contribute to national economy, to regain environmental stability and to assist in satisfying the basic needs for the local communities. CFI stipulates areas where Community Forest (CF) could be established and areas where CF will be permitted. CFI offers local people (rural people) to be able to participate in forest management activities such as establishment of forest plantations and in some areas conservation of natural forests especially in watershed areas. Up to June (2011), 108364 acres (43,872 ha) of community forests have already been established across the country (Forest Department, 2011).

7. Major drivers of deforestation and forest degradation

Similar to other developing countries, the major drivers of deforestation in Myanmar are overexploitation, illegal logging, shifting cultivation, expansion of agricultural land, urbanization, infrastructure development and conversion of forest into other land uses. In addition, other compounded factors of deforestation are conversion of forest land into other land uses aiming at to support the development of national economy. These are:

a) Special development projects (eg. Dawai Special Economic Zone)
b) Construction of express way, hydropower dams and gas-pipeline;
c) Expansion of urban area;
d) Establishment of private teak and hardwood plantations;
e) Establishment of industrial plantations (eg. rubber plantation and oil palm plantations); and
f) Mining (eg. gold and metal mining)

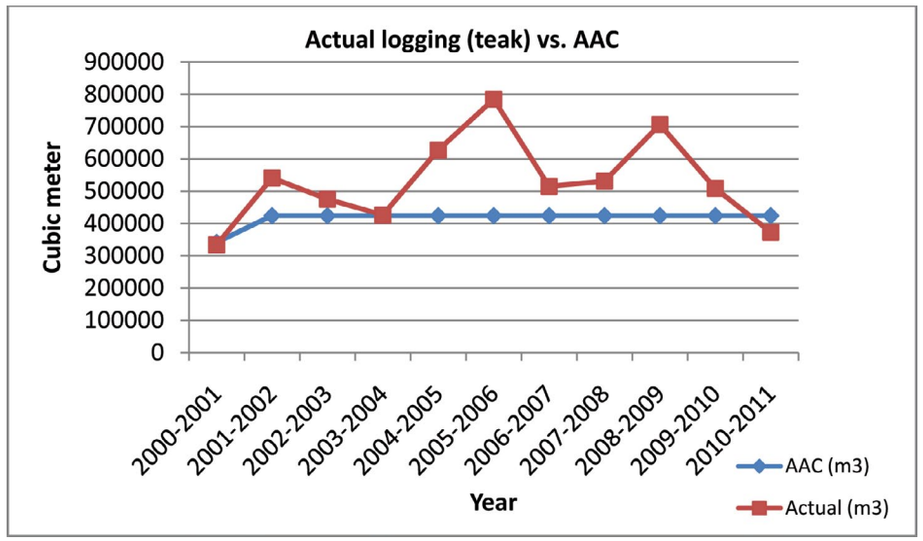

Figure 1. Comparison between actual logging and AAC at the national level (for teak)

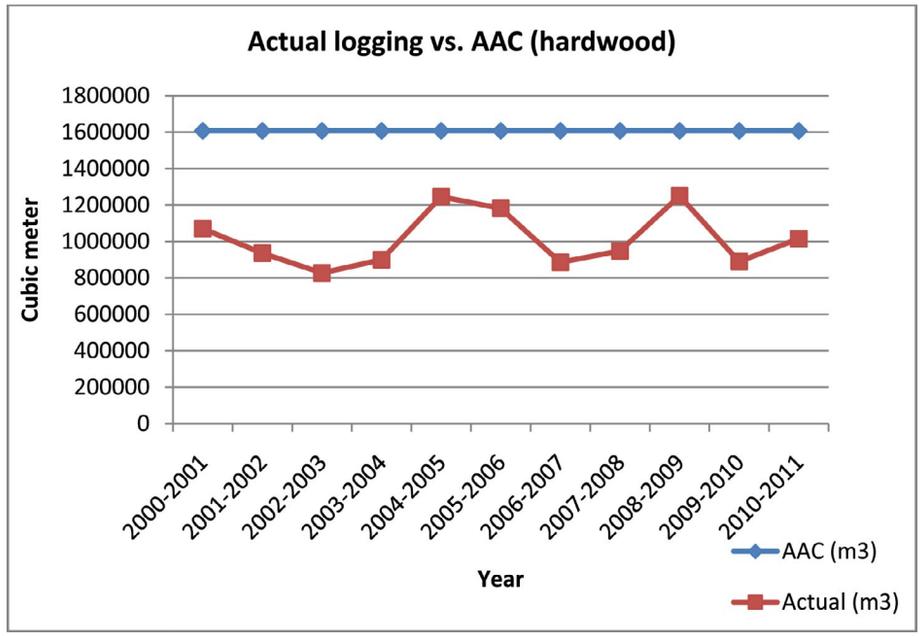

Figure 2. Comparison between actual logging and AAC at the national level (for hardwood)

7.1 Underlying causes of deforestation

The major underlying causes are macroeconomic factors, governance factors, deomographic factors, technological factors. With the increasing market force, the people will often clear land to accommodate higher demand for products that can be cultivated (or grazed) on forest land.

Economic growth may increase deforestation at early economic development stages, when forests are cleared for agricultural commodity production. In later stage of economic development, pressures on forests may decrease as agricultural production becomes more intensive, service sectors increase their share in the economy, and the demand for forest products and services rises, making timberland more valuable. The higher the profitability of the agriculture is the main economic factor underlying the conversion of forests to other uses. Rising agricultural products prices and reduced input prices render agriculture more profitable, and lead to expanded areas under production.

Other macroeconomic factors with significant potential to impact upon deforestation include external debt, foreign exchange-rate policy, and trade policies governing sectors linked to deforestation (Kanninen et.al, 2007). Economic crisis can also stimulate deforestation. When country's economy grows very slow, many people who had lost their jobs in the formal sector or who need additional income, turned to the forest for supplemental income. Their activities include the clearing of forest for cultivation, illegal logging and the use of fire to facilitate access to bush meat. Policies supporting the expansion of forest product industries and related debt can be a significant force driving deforestation.

Generally, the underlying causes of deforestation and forest degradation are lack of land use policy and land tenure system, conflicting policy and planning, weak law enforcement and coordination between government agencies, limited cooperation and coordination of government agencies with NGOs and civil societies, weak monitoring and evaluation, limited access to alternative sources of livelihood products, particularly fuel wood and timber, poverty and lack of livelihood alternatives. Figure 4 shows viscous cycle of poverty.

7.2 Elements of REDD-plus in Myanmar

Under the circumstance of global climate change, the term REDD+ is very new for Myanmar as is in other developing countries. Myanmar has realized REDD+ as an innovative concept of adding monetary incentive to forest conservation activities. Regardless of monetary incentive mechanism and technical matters for carbon measures, forest conservation in sustainable manner has been an age-

old conventional practice for Myanmar. Thanks to proper management system so called Myanmar Selection System (MSS), about 47 percent of the country area is still forested. UN-REDD Programme identified six elements of REDD+ readiness process as follows:

i. Management of the REDD+ readiness process;
ii. Stakeholder participation;
iii. Implementation framework;
iv. REDD+ strategy setting;
v. Reference scenario and
vi. National monitoring system.

The following table shows the subjective evaluation of current status of readiness preparation in accordance with six components of REDD+ Readiness Process:

Table 3. Components of REDD+ readiness and current status (1 = VERY HIGH, 2=HIGH, 3=MEDIUM, 4=LOW, 5=VERY LOW)

1	Management of the REDD+ Readiness process	Status	Remarks
	Establishment of multi-stakeholder information network	3	Already established, needs to strengthen and sustainability
	Establishment of coordination mechanism	3	Already established, but weak, needs to strengthen and sustainability
	Preparation of a REDD+ readiness roadmap	3	Two national workshops already held, need to prepare Roadmap
	Analysis of sectoral approaches to REDD+ (e.g., timber industry; agricultural sector)	4	Needs to conduct research, NCEA conducted some stages eg. INC report
2	**Stakeholder Engagement**		
	Awareness raising – government agencies	3	Only few officials aware about REDD
	Awareness raising – communities	3	Low level of awareness opportunities
	Awareness raising – other (industry, armed forces, etc.)	4	Only few officials aware about REDD

	Preparation/application of FPIC procedures	4	Initial stage of preparation and already start some activities
	Other		
3	**Implementation Framework**		
	Mainstreaming REDD+ into planning (land use and socio-economic development)	2	Forest Policy and FD management plan is very inline with REDD+, easy to integrate with management plan
	Design of benefit distribution system (including establishment of REDD+ Fund)	4	Have Experiences in CF but needs to explore more
	Strengthening forest governance – community or social forestry development	2	CFIs 1995, Forest Policy 1995, Forest Law 1992, Wildlife Law 1994, Myanmar Agenda 21, Signatory to the Conventions such as CITES, CBD, UNFCCC, UNCCD, ILO
	Strengthening forest governance – law enforcement and reduction of corruption	3	Forest Law 1992, Wildlife Law 1992, Code of Timber Harvesting, C&I for SFM, needs to follow FLEG-T (of Asean) and Lacey Act
	Application of social and environmental safeguards	3	CFIs 1995, Forest Policy 1995, Forest Law 1992, Wildlife Law 1994, National level poverty reduction and rural development programme, Signatory to the Conventions such as CITES, CBD, UNFCCC, UNCCD, ILO
	Other		
4	**REDD+ Strategy Setting**		
	Analysis of drivers of deforestation and degradation	3	Have reliable data and information, suggested to conduct for specific area to explore major drivers

	Analysis of opportunities to enhance forest carbon stocks (reforestation, rehabilitation, etc.)	1	Reforestation, Afforestation across the countries by Govt and Private, annual planting rate of 32000 ha per year
	Identification of options	2	Many forest rehabilitation and conservation activities including PAS (6.07% of total area)
	Preparation of National REDD+ Strategy, including consultation processes	3	National strategy (draft) already prepared and need to be finalized and adopted.
	Other		
5	Reference Scenario		
	Analysis of past trends in forest cover and forest quality	2	Available RS/GIS images and experts in FD, needs specific image for specific area (potential pilot project area)
	Estimation of biomass equations (allometric equations)	4	Have experimental scale, and some experts but need for comprehensive study for each and every forest types of Myanmar
	Scenario setting for future trends in forest development	4	Needs more discussion and consultation to set scenario
	Estimation of interim reference scenarios	4	Available for generalized reference scenario
	Other		
6	**National Monitoring System**		
	Strengthening the national forest inventory process	2	Already have but needs to strengthen
	Establishment/capacity building for remote sensing	3	Have some experts but needs new generation for long term
	Development of participatory monitoring techniques	3	Already established CF and needs to develop the capacity of rural community, have CF training centres and training regularly basis

	Data management/capacity building for reporting (link to National Communications)	4	Needs more experts and more new generation for the future
	Other		

Note: Subjective evaluation of the author.

7.3 Preparation of REDD+ readiness in Myanmar

Indeed, Myanmar has long history of Forest legislation and systematic forest management. Burma Forest was enacted in 1902. In order to reflect the present political, social, ecological and economic situations, it was replaced by the new Forest Law in 1992. Likewise, the Wildlife Protection Act could be enacted in 1936 and it was replaced by Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law in 1994. Myanmar Selection System (MSS) has been principle forest management system since 1856 and sustained timber production is the basic concept of the system. It is a selection-cum-cultural system and selective cutting has been done with least negative impacts to the environment and remaining forests. Therefore, all forest related legislations and systematic forest management practices have been over 100 years in experience in Myanmar.

Nowadays, REDD+ become an important mechanism not only to reduce emissions from deforestation and forest degradation and to enhance forest carbon stocks, but also to enjoy co-benefits such as increasing biodiversity, stabilizing water regulation, poverty reduction and rural development. In order to reflect the changing global trend including REDD+, Forest Department of MOECAF has formed a REDD+ Core Unit which is composed of experts of relevant subject matters of REDD+ and forestry sector. There are 21 members from various Divisions including Forest Research Institute, Planning and Statistics Division (RS/GIS and Inventory), Training and Research Development Division, Natural Forest and Plantation Division, Nature and Wildlife Conservation Division, Extension Division and University of Forestry. Core Unit is Chaired by Director of Forest Research Institute (FRI) and Deputy Director of Planning and Statistic Division serves as a Secretary. With the director supervision of Director General of the Forest Department, the Core Unit has been working for the development of REDD+ readiness activities.

The team was encouraged to find that many enabling conditions for REDD+ readiness are already in place in Myanmar, or are in the process of development. These include:

7.4 Forest Management and Policy

- REDD+ Task Force: A REDD+ Task Force was established in 2010, and meets at monthly intervals, albeit thus far including only staff from the Ministry of Environmental Conservation and Forestry (MOECAF). The current REDD+ Taskforce has an interim mandate to support for development of the Myanmar REDD+ Roadmap. However, it is proposed to enlarge the future working arrangements, involving key technical representatives from Forest Department (FD), Dry Zone Greening Department (DZGD) and Myanmar Timber Enterprise (MTE), MOECAF and Ministry of Agriculture and Irrigation (MOAI) and Department of Metrology and Hydrology (DMH) for effective inter-agency cooperation
- Land-use and Socio-economic Development Planning: There is a clear recognition at the highest levels of government that past top-down planning processes are inappropriate. Since July 2011, the MNPED has switched to broadly bottom-up planning, with responsibilities devolved to Townships, Districts and Regions/ States. The inter-ministerial Land Scrutiny group, chaired by the Minister of MOECAF, has been formed with a presidential mandate to devise national-level regulations for land-use planning. At State/Region, District, and Township levels, Land-use Advisory Committees are to be established, which will include civil society and private sector representatives, although in many locations these committees still do not exist. There are also Agricultural Oversight Committees, consisting of representatives of sector ministries, which meet once a month or more often during the rainy season to resolve land-use conflicts. Civil society engagement has been actively sought on reform of the planning process, and recommendations from the Land Core Group, and the Food Security Working Group are forthcoming.
- Community Forestry Instruction revision: There is widespread acknowledgement that the Community Forests Instruction of 1995 (CFI, 1995) requires revision. These were developed to address the omission of community forests from the Forest Law of 1992. Currently amendments to the Forest Law are being drafted by FD, which will include clearer reference to CF, and the technical content of the CFI is being reviewed. Although external consultation is not being explicitly sought in these processes, suggestions from the Environmental Technical Working Group (ETWG) are being submitted through informal channels.
- Private Sector investment in forestry: The government recently relaxed previously strict controls of ownership of teak plantations, leading to a spurt in private sector-supported plantation establishment. The Korean International Cooperation Agency (KOICA) recently initiated a project to improve rehabilitation capacity of the deforested Nyaung U region through private sector involvement.
- Forest Law Enforcement: Prosecution of serious forest crimes is apparently

highly effective, with a reported 100% conviction rate of crimes referred to the prosecution service in the District visited by the team (Thaungngu District) during 2011.

- Overall: The current period of transition in policymaking, planning and stakeholder participation suggests that this is the ideal time for a UN-REDD-supported REDD+ Readiness programme to make a significant impact.

7.5 National Forest Monitoring System and Forest Reference Emission Levels/ Forest Reference Levels (RELs/RLs)

Remote Sensing and GIS

- Remote sensing and GIS (RS/GIS) are essential tools for 1) the monitoring and assessment of forest cover and forest cover change and 2) the generation of national-level activity data for the forestry sector, to support the development of the national greenhouse gas inventory.
- Levels of awareness, expertise and experience in RS/GIS in the Forest Department are considerable, with the Remote Sensing and GIS Section of the Planning and Statistics Division being headed by two Assistant Directors and hosting a team of 20 RS/GIS analysts in a specialized lab containing 22 computer stations and cartographic printing hardware.
- International support to the RS/GIS Section dates back to the 1990s, with image classification support received from JICA. Contemporary international support is received from JICA, the International Centre for Integrated Mountain Development (ICIMOD) and the Government of India.
- Forest cover maps are produced by the RS/GIS Section and are passed to the National Forest Inventory (NFI) Section to inform their sampling.
- Forest cover change assessments have been completed, for specific target regions of the country, from 1990-2000-2005-2010.
- RS/GIS Section is promoting the use of freely-available satellite imagery (e.g. Landsat) for land cover mapping and land-use change analyses, which is the same approach recommended by FAO/UN-REDD.
- The RS/GIS Section has close links to the University of Forestry, which teaches a graduate course in RS/GIS and there is therefore a steady stream of technical experts.

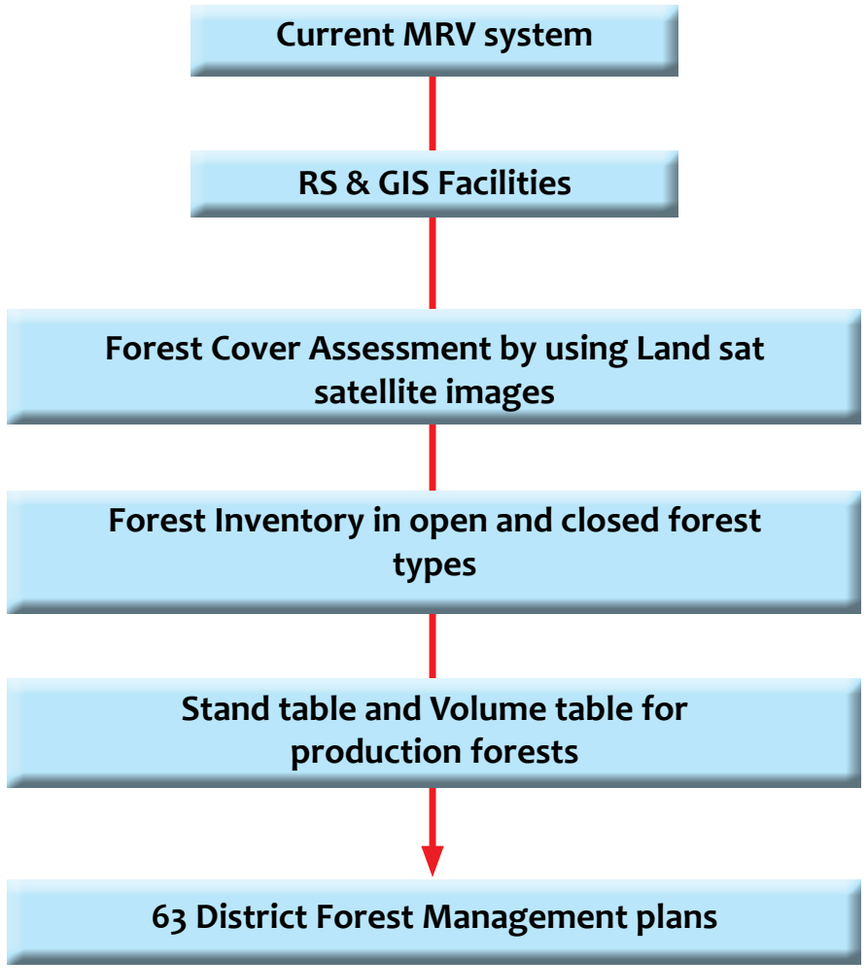

Figure 3. Flow chat of forest monitoring system in Myanmar

7.6 National Forest Inventory

- The national forest inventory (NFI) is the key tool for generating country-specific emission factors (i.e. estimates of greenhouse gas emissions from forest land as a result of human activities), which will inform the compilation of the greenhouse gas inventory for the forestry sector.
- Myanmar has a long history of forest measurement and inventory activities. Modern-era NFI activities began in the 1980s, with the support of FAO.

- From 1982-2003, the NFI was based on a systematic sampling approach using an inverse L-shaped plot. Of the total 9,800 sampling units, 2,845 were designated as permanent sample plots – with the objective to re-measured these permanent ones every five years. The planned NFI cycle period was 10 years.
- Due to budgetary constraints, in 2003 the NFI was redesigned to reduce sampling intensity, and based on the sampling of closed and open forest; the method now incorporates a rectangle sample plot. Data collection is targeted at priority forest areas, with the aim of completing two districts per year. 800 temporary sample plots are assigned to each district. Data variables collected are focused on growing stock. In parallel to the NFI, tree selection marking for logging purposes is carried out every year at the national level.
- A separate Forest Inventory Database Section has a team of 10 inputting NFI data into spreadsheets.

7.7 Forestry Research

- The Forest Research Institute (FRI) employs 57 research staff and has eight field research stations across the country. The FRI hosts a soil science laboratory (capable of assessing soil carbon content) and wood drying facilities. Research staff have derived biomass figures for 54 tree species. The FRI currently has extensive capacities and is well-staffed, but knowledge of REDD+ is limited.

7.8 Greenhouse Gas Inventory/National Communication

- The National Communication to the UNFCCC Secretariat is the means through which countries communicate their national greenhouse gas inventory reports, including emissions and removals from the forestry sector.
- Myanmar recently completed and submitted its Initial National Communication (INC) to the UNFCCC, which was the result of a UNEP-funded project begun in 2008 (Myanmar joined negotiations under the UNFCCC in 2005). The base year for the INC was 2000.
- Default values from the IPCC's global Emissions Factor Database (EFDB) were used to compile the forestry sector inventory; and the 2006 IPCC Guidelines for National Greenhouse Gas Inventories were followed for the compilation of the inventory report.
- A project proposal is being prepared to compile the Second National Communication.

7.9 Stakeholder engagement

- There have been a number of previous cross-Ministry coordination efforts which could provide lessons learnt and working models for the REDD+ readiness process. These include the formation of the National Adaptation Plan, the National Biodiversity Strategy Action Plan and the work of the National Environmental Conservation Committee.
- NGO coordination mechanisms, such as the ETWG, already exist in Myanmar and could provide important channels for stakeholder engagement during the REDD+ readiness process.
- Some of the key national and international NGOs relevant to the REDD+ readiness process are well networked with MOECAF and other government agencies, paving the way for potentially strong communications across the government and NGO sectors.
- The MOECAF has recently demonstrated a willingness to recognize Indigenous Peoples' rights, for example, by acknowledging the right to Free, Prior and Informed Consent.
- Though civil society associations are fewer in number than in many other countries in the region, the sector appears to be expanding rapidly. It is encouraging to see that many of the civil society associations already in place are represented at both the national, state/regional and district/township level, often with some degree of government involvement or representation. Engagement with these civil society associations will be vital for a successful REDD+ readiness process, particularly ethnic group, religious, women's and farmers' associations.
- It was not possible to get a detailed overview of the private sector stakeholders relevant to the REDD+ readiness process during the scoping mission. However a number of important private sector associations within the forestry and land-use sector were identified, which will be important to engage with early in the REDD+ readiness process.
- Though small in number, the knowledge institutions that do exist have substantial technical capacity considering the limited external resources they have at their disposal (as shown in the 'National Forest Monitoring System and Forest Reference Emission Levels/Forest Reference Levels' section above). These institutions can play a number of key technical roles in the REDD+ readiness process.

7.10 Capacity Development

- There is substantial existing capacity (in Government as well as civil society), at individual level but also within specific organizations/institutions; of particular

importance is the fact that much of this has been a truly endogenous CD process with limited external support (or interference!)

- The general atmosphere is one characterized by optimism, positive momentum, and opportunities for positive change; in the context of REDD+, the overall reform in the country provides entry points for linking CD efforts with other ongoing reform and change initiatives. More specifically:
- The mission observed 'change agents' who are committed and energetic, but, just as importantly, that the leadership (in MOECAF) appears to give space and encouragement
- On the part of Government, there appears to be a genuine openness to engaging with civil society and other stakeholders, and exploring mechanisms for constructive engagement
- On the side of development partners, the national reform process means a number of new programs and initiatives are being formulated—this provides entry points for seeking synergies (and perhaps economies of scale) with REDD+
- Within MOECAF/Forestry Department, the mission observed that there is capacity to perform 'business as usual' functions, such as implementing annual work plans along the main activity areas and in accordance with instructions issued by HQ
- Also within MOECAF/FD, the communication between HQ and district offices appears to be regular and reasonably effective (for example, through monthly FD journal), with good collaboration and joint efforts for achieving targets

7.10.1 Key Challenges

Whilst these numerous positive conditions are laudable, inevitably some key challenges remain. These include:

7.10.2 Forest Management and Policy

- Private Sector investment in forestry: Decision making on investment, at least for plantation establishment, does not require consultation with local stakeholders, and this has led to subsequent conflicts. FD guidelines on approval for licenses require substantial improvement, including decentralization of decision making, inclusion of stakeholder consultation and revision of criteria on forest quality suitable for plantation establishment.
- Community Forestry: CF has largely been confined to reforestation of degraded land. There has been little effort to extend the concept to natural forest areas, and formalizing handover procedures in Unclassed Forest areas in coordination with Departments of Agriculture and Land Settlement and Records.
- Local communities and commercial forestry: Indications that up to 80% of

the income of some forest-dependent communities may stem from the trade in illegally-harvested forest products suggest that there is room for more formal involvement of local people in forest product value chains, including timber.

- Livelihood conflicts: Animal feed is a limiting factor in rural livelihoods, particularly in the dry zone. Forests are a key source of animal fodder, and exclusion of local stakeholders has led to conflict.
- Forest Law Enforcement: Despite the effectiveness of current enforcement procedures, the number of forest crimes is very high, and it appears that in forest-dependent communities, villagers are obliged to break the law in order to earn income. Therefore some rationalization of forest laws and regulations would seem to be necessary, such that there is a strong focus on serious crimes and some relaxation of the law concerning local usage.
- Overall: Improvements in the "rule of law" are required to effectively address drivers. Gains through improved planning, participation, and technical improvements in forest management are vulnerable to being undermined through ad hoc top-down decisions at the highest level.

8. Process for the preparation of National REDD+ Strategies (Draft)

First National Level Workshop on Reducing Emissions from Deforestation and Forest degradation (REDD) was jointly organized by the Forest Department of the Ministry of Environmental Conservation and Forestry and United Nations Development Programme (UNDP-Myanmar) on 9th November 2010 at the Ingyin Hall of Forest Department in Nay Pyi Taw, Myanmar. The workshop was attended by the representatives from the Ministry of Environmental Conservation and Forestry, Ministry of Agriculture and Irrigation, Ministry of Live Stock and Fisheries, Ministry of Education, Ministry of Health, Ministry of Home Affairs, Legal Institution, FAO, UNDP, UN-HABITAT and also representatives from local non-governmental organizations, and the invited guests totaling 56. The objectives of the first National Level Workshop were as follows:

(a) To inform all relevant stakeholders about the REDD-plus;

(b) To built capacity and to improve awareness raising of Forest Department staffs and relevant stakeholders about REDD-plus;

(c) To establish the coordination mechanism among stakeholders including government ministries, UN agencies such as UNDP, FAO, UN-HABITAT, NGOs and local communities; and

(d) To present enabling conditions in implementing REDD-plus as well as opportunities and constraints

In addition, second National Level Workshop was also jointly organized by the Forest Department of the Ministry of Environmental Conservation and Forestry and United Nations Development Programme (UNDP-Myanmar) from 10-11 November 2010 in Forest Department, Nay Pyi Taw, Myanmar. The objectives of the first National Level Workshop were as follows:

(a) To built capacity and to improve awareness raising of Forest Department staffs and relevant stakeholders about REDD-plus;

(b) To strengthen the coordination mechanism among relevant stalkholders for REDD-plus readiness;

(c) To discuss and identify possible financial supports for capacity building for REDD-plus readiness; and

(d) To formulate the future programme related to REDD-plus readiness in Myanmar.

Major outputs of the Second Workshop were as follows:

(a) To build the capacity of Ministry of Environmental Conservation and Forestry and relevant stakeholders in REDD-plus readiness;

(b) To find every possible means and ways to secure project financing for capacity building;

(c) To establish REDD-plus demonstration plot for capacity building for measuring, reporting and verification (MRV) of carbon stock and REDD-plus related matters

(d) To promote international cooperation to accelerate capacity building and aware raising of REDD-plus;

(e) To include REDD-plus in the mainstream of national forest management plan; and

(f) To prepare REDD readiness roadmap and REDD-plus national strategy through workshops and consultation meetings

In addition, Regional Level Workshop on REDD-plus was also organized in cooperation with Korea Forest Service (KFS), UNDP (Myanmar office) and UN-REDD Programme. Regional level workshop is schedule was held from 12 to 13 May, 2011 in Nay Pyi Taw, Myanmar. The main objective was to formulate REDD-plus readiness roadmap and REDD-plus National Strategy in consultation with all relevant stakeholders and UN-REDD programme. The Regional Workshop was attended by representatives from Government Ministries, ASEAN Member States (AMS), Korea Forest Services, UN-REDD Programme, UNDP, FAO, UN-HABITAT, Wildlife Conservation Society (WCS), Japan International Cooperation Agency (JICA), local authorities, NGOs and invited guests totaling of 65. The main objective of the REDD-plus Regional Workshop were:

(a) To formulate REDD-plus national strategy and roadmap;

(b) To inform the current status of REDD-plus readiness in Myanmar;

(c) To learn and share experiences of REDD-plus readiness activities among ASEAN member states;

(d) To discuss about potential financial mechanism for REDD-plus readiness in Myanmar.

With the technical assistance of UN-REDD Coordinator, basic framework of REDD-plus roadmap and National Strategies were identified.

8.1 National REDD+ Strategies (Draft)

National REDD+ strategies have been identified as one of the outputs of the National level workshops on REDD+ held in Myanmar. The followings are the REDD+ roadmap (Phase Approach) for the implementation of REDD+ readiness and the National REDD+ Strategies (Draft) of Myanmar:

Phase I: Preparation Phase

- Need assessment, data collection, awareness raising, capacity building, policy review, formulation of REDD+ Roadmap and National Strategies

Phase II: Readiness Phase

- Awareness raising, capacity building, pilot activities, policy adjustment, formulation and adoption

No.	National REDD+ Road Map	Time Frame								
		1st Year		2nd Year		3rd Year		4th Year		5th Year
		1st	2nd	1st	2nd	1st	2nd	1st	2nd	
1.	Phase I									
2.	Phase II									
3.	Phase III									→

Phase III: Implementation Phase – beyond 2020

Strategy		Major tasks	Remarks
Strategy 1: **Tackling deforestation and forest degradation**	1.1	Analyze major drivers of deforestation and forest degradation	
	1.2	Develop more effective conservation and management of Permanent Forest Estate (PFE)	
	1.3	Develop more effective management of planted forests and enhance forest carbon stock	
	1.4	Stabilization of shifting cultivation	
	1.5	Integrate forestry with rural development programme	
Strategy 2: **Developing enabling policies**	2.1	Establish institutional mechanism	
	2.2	Clarify and ensure legal carbon and land tenure right	
	2.3	Establish quantifiable national forestry emissions reduction targets	
	2.4	Develop long-term policy on payment for Ecosystem Service (PES)	
	2.5	Ensure REDD-plus social and environmental safeguard	
	2.6	Adjust or formulate the policy and action plan to support REDD+	
Strategy 3 **Strengthening Forest Governance**	3.1	Establish National REDD+ Committee/REDD National Working Group	
	3.2	Integrate/mainstream REDD+ into sectoral plans	
	3.3	Establish equitable benefit distribution system	
	3.4	Develop technical and institutional guidance to implement REDD+	

	3.5	Strengthen law enforcement and anti-corruption scheme	
Strategy 4. **Establish MRV System and Set Reference Emission (REL) at the National level**	4.1	Analysis of past trends in forest cover and forest quality	
	4.2	Develop biomass allometric regression equations of various forest types	
	4.3	Measurement of baseline carbon stock at the national level (sub-national level) with appropriate MRV tools	
	4.4	Establish MRV system at national level (sub-national level)	
	4.5	Implementation of pilot project for MRV and REL	
Strategy 5 **Strengthen institution, building capacity and raising awareness about REDD+**	5.1	Development of infrastructures for REDD+	
	5.2	Establishment of multi-stakeholdres coordination mechanism	
	5.3	Building capacity of all relevant stakeholders	
	5.4	Implementing Free, Prior Informed Consent	
	5.5	Promote REDD+ through information, education and communication (IEC)	
	5.6	Enhancing learning exchange	
	5.7	Sustaining government and non-government cooperation	

Strategy 6 **Ensuring stakeholder consultation and engagement**	6.1	Organizing series of consultation with the participation of all relevant stakeholders	
	6.2	Preparation/application of Free Prior Informed and Consent.	
	6.3	Application of social and environmental safeguards.	
	6.4	Promote community forestry and social forestry.	
	6.5	Design benefit distribution system.	
Strategy 7. **Securing sustainable financing for REDD+**	7.1	Implementing multilateral and bi-lateral approaches for sustaining financing (diverse long-term funding mechanism)	
	7.2	Seeking immediate donor funding for REDD+ readiness	
	7.3	Pursuing equitable and reasonable benefit sharing among stakeholders	

8.2 On-going REDD+ projects in Myanmar

There are four bilateral on-going REDD+ projects in Myanmar supported by different organizations. These projects are as follows:

Project 1

Project title	Mitigation of climate change impacts through restoration of degraded forests and REDD-plus activities in Bago Yoma Region, Myanmar
Supporting organization	Korea Forest Service (KFS), the Republic of Korea
Project duration	24-11-2011 to 23-11-2012 (one year) November 2012 to November 2013 (project extension for one more year)
Implementation agency	Planning and Statistics Division and Forest Research Institute, Forest Department (REDD+ Core Unit)

Project objectives	■ To initiate pilot activities for restoration of degraded forests and conservation of ecosystem for mitigating climate change impacts and supporting sustainable forest management ; ■ To measure baseline carbon stocks and set reference scenario of carbon emissions through a reliable MRV system focusing on REDD+ readiness; and ■ To strengthen capacity and enhance awareness of FD Staff and relevant stakeholders in REDD+ readiness and ecosystem conservation.
Major project activities	■ Awareness raising about REDD+, climate change and forests ■ Capacity building and development of MOECAF and relevant stakeholders ■ Rural development activities as an initial step of formulating performance based benefit distributing system ■ Demonstration on enhancing forest carbon stock with people's participation (establishing community woodlot, arboretum, forest conservation) ■ Measuring, reporting and verification (MRV) and carbon measurement according to IPCC guidelines ■ Forest inventory and forest cover change assessment (ground check, RS/GIS) ■ Research on major drivers of deforestation and forest degradation (District level as an initial step of conducting national level)

Project 2

Project title	Myanmar REDD+ Readiness Assessment with the technical support of UNREDD Programme and RECOFTC (9 months) (It needs to be approved by the Norwegian Government for the financial supports to UNREDD Programme and RECOFTC.)
Supporting organization	Norwegian Government, UN-REDD Programme and RECOFTC (technical support to the Forest Department of MOECAF)
Project duration	9 months (proposed duration, not yet approved the exact time frame)
Implementation agency	Planning and Statistics Division and Forest Research Institute, Forest Department (REDD+ Core Unit)

Project objectives	■ To support the formulation of REDD+ roadmap and National REDD+ Strategies
Major project activities	■ Supporting in stakeholder consultation processes ■ Reviewing the existing REDD+ related (sectoral) policies, laws, regulations, documents and practices ■ Facilitating the formulation of of REDD+ roadmap and National REDD+ Strategies through working groups which are composed of representatives of relevant government ministries, NGOs, academia and research insitutions

Pr**oject 3**

Project title	The study on the strengthening methodological and technological approaches for reducing deforestation and forest degradation within the REDD implementation framework: application in Myanmar (1 year) (2012-2013)
Supporting organization	Asia Air Survey Co.Ltd., from Japan. Technical Cooperation and Capacity Building Programme
Project duration	12 months (2012 -2013)
Implementation agency	Planning and Statistics Division and Forest Research Institute, Forest Department (REDD+ Core Unit)
Project objectives	■ To strengthen RS/GIS capacity of staff of FD in order to support REDD+ readiness process ■ To demonstrate the preparation of carbon mapping in selected areas ■ To share and exchange knowledge and experiences regarding REDD+ readiness activities
Major project activities	■ Organizing RS/GIS training in Myanmar (20 participants) and in Japan (3 Myanmar participants) ■ Organizing REDD+ workshop in Myanmar ■ Conducting survey (socio economic, forest cover and growth, community forestry activities) in Nyaung Shwe and Kalaw Townships ■ Developing carbon mapping of some selected areas (eg. Community forests and some areas of Nyaung Shwe township)

Project 4

Project title	Capacity building for developing REDD-plus activities in the context of sustainable forest management
Supporting organization	International Tropical Timber Organization (ITTO)
Project duration	3 years project (2012-15)
Implementation agency	Planning and Statistics Division and Forest Research Institute, Forest Department (REDD+ Core Unit)
Project objectives	■ To strengthen the individual capacity and institutional capacity to implement REDD+ in Myanmar
Major project activities	■ Capacity development programme ■ Institutional development programme ■ Pilot activities of REDD+ in Toungoo District

9. National Biodiversity Safeguard

9.1 National Biodiversity Asset

Conservation of biological resources primarily wildlife, wild plants and pristine forests has traditionally been prioritized at the national level. Wildlife conservation in Myanmar dates back to 1860 when King Mindon set up a wildlife sanctuary of nearly 7100 ha. The Elephant Preservation Act (1879), the Wild Bird and Animals Protection Act (1912), the Wildlife Protection Act (1936) were the earliest legal tools for Biodiversity safeguard in Myanmar. The 1995 Myanmar Forest Policy stipulates to form a network of naturally protected areas 5 % of the country's landmass and intended up to 10% in the long run. As of 2011, 29 wildlife sanctuaries and 6 national parks accounting for 14631.53 square miles has been established across the country and further 7 areas of 72784.73 square miles are under the process of PAS formation and thus total area of PAS amounted to 6.7% of the total land area. The richness of biodiversity in Myanmar is estimated at over 20,000 species and of which about one fourth is endemic species. This magnitude of biodiversity asset is will helpful for biodiversity safeguard in REDD mechanism.

9.2 National Strategy on Biodiversity Conservation

The National Forest Master Plan for 30 years (2001-02 to 2030-31) emphasizes, in chapter 9,

current status, objectives and programs on biodiversity conservation in Myanmar.

National Biodiversity Strategic Action Plan (NBSAP) has also been developed through a series of national workshops and consultation processes. Some salient points noted in the master plan with regard to develop National Strategic Plan are as follows, and those are in general in conformity with requirements for REDD-plus.

- Collection baseline data on genetic diversity and species diversity by 2016-17
- Collaboration with relevant ministries death with environmental and resource
- management, including cultural heritage and hotel tourism development
- Institutional strengthening and capacity building of staff
- Public awareness programme and offering opportunity of public cooperation
- Gain for Political commitment
- Law enforcement and flexibility of amendment of law
- Programme to develop Indigenous medicinal usages
- Socio-economic development local communities through eco-tourism
- International and inter-departmental cooperation
- Establishment of Funds

To safeguard this national biodiversity asset, Environment and Wildlife Division was formed under the Forest Department. So as to enhance the capacity and knowledge of the wildlife staff, in-house trainings and oversea trainings, on-job trainings together with international experts in the field and dispatch for regional and international workshops and seminar are arranged. Various plans and projects including research program, In-situ and Ex-situ conservation programs, public awareness program, law enforcement program, habitat restoration program, and so on are laid down and conducted not only with its own resource but also with regional and international collaboration.

9.3 Collaboration with NGOs and INGOs in Biodiversity Conservation

Now some numbers of local NGOs showing keen interest in environmental and biodiversity conservation arise in Myanmar. Among others Forest Resource and Environment Development Association (FREDA), Biodiversity and Nature Conservation (BANCA), ECCDI, etc are founded by retired high-ranked forest officers. Those NGOs play a key role in sharing national responsibility of biodiversity conservation by executing either their own projects or in collaboration with the FD. Furthermore, they are promising stakeholders in a new mechanism of REDD-plus. Some important international agreements and organizations linked with FD are as follows:

- Global Tiger Forum
- UN Convention on Biological Diversity
- Convention on International Trade in Endangered Species of Wild Fauna and Flora
- Botanic Gardens Conservation International
- Cartagena Biosafety Protocol
- Wildlife Conservation Society
- Ramsar Convention

Elephants (Elephus maximus), tigers (Panthera tigris), golden deer (Cervus eldi) and crocodile (Crocodilus poroosus) which are enlisted in CITES Appendix (I) and star turtles (Geochelone platynnota) enlisted in CITES Appendix (II) are totally protected in Myanmar and gain much attention for conservation projects from INGOs.

9.4 Indigenous and Local Community Safeguards

Since long time before, Myanmar Forest Act (1902) acknowledged the rights and privileges of local people when ever forest reservation was made. Thus, existing Myanmar Forest Law (1992) has also clearly mentioned in the section 6 (b) as follows:

"The Minister shall in respect of constituting a reserved forest appoint a forest Settlement Officer to inquire into and determine in the manner prescribed the affected rights of the public on the relevant land and to carry out demarcation of the reserved forest."

In line with this legal stipulation, Settlement Officer must issue prior notice on constitution of reserved forest so that local communities and indigenous peoples can ask for their rights and privileges if affected. They can put forward their claims to the Settlement Officer through the respective Township Forest Office. The Local Supply Working Circles in Forest Management Plans at Forest Management Unit level are also formed with the aim of providing basic needs of forest products to local communities and indigenous.

Community Forestry Instruction - CFI (1995) opened a new front for local communities to fully participate in planning and implementing forest activities. According to the CFI, local communities are permitted to establish community forests for 30-years and with extension on performance basic. They have to develop management plan on their own, with the technical support of the Forest Department and manage their forest themselves until harvesting and their products and benefit sharing. Now community forests (CF) are merging throughout the country. About 102,402 acre (41,458 ha) of community forests have already been established and about 40,000 user members involved by the

end of November 2012. (Unpublished, FD 2012). This essence of grass-root level involvement with bottom-up approach starting from drawing up planning and drawing management plan through implementing the activities will reflect very well to the mechanism in REDD+ requirements.

Along with the REDD+ initiative, free prior informed consent (FPIC) process will be started for the active participation of the local communities.

9.5 Modifications needed

The existing national experience and programmes are, as stated earlier principally, aimed at to conserve forests and biodiversity. So do the ultimate aim of the REDD-plus. However the approach of REDD-plus to reach the ultimate aim is designed with financial incentive for conservation activities. It includes financial transaction and measurement of CO_2 products or commodity. As such implications of transaction mechanism, distribution of benefits and technical issues of measuring CO_2 arise. Therefore although REDD-plus is simple in concept but complex in implementation. Accordingly, it is no doubt some modifications in existing structure and programme are needed to be suited for REDD-plus. Major areas in needs of modification in existing national programme are human resource development, capacity building, law enforcement, credible policy, secure finance and comprehensive master plan.

10. Conclusion

REDD-plus is a major opportunity for tropical forest conservation. Myanmar has recognized that REDD-plus is an innovative concept that can complement ongoing forest policies. Myanmar is also aware of REDD-plus as a mechanism to create an incentive for developing countries to protect, better manage and wisely use their forest resources, contributing to the global fight against climate change. REDD-plus strategies aim to make forests more valuable standing than they would be cut down, by creating a financial value for the carbon stored in trees. Once this carbon is assessed and quantified, the final phase of REDD involves developed countries paying developing countries carbon offsets for their standing forests. REDD-plus is a cutting-edge forestry initiative that aims at tipping the economic balance in favour of sustainable management of forests so that their formidable economic, environmental and social goods and services benefit countries, communities, biodiversity and forest users while also contributing to important reductions in greenhouse gas emissions.

The COP 15 which was held in Copenhagen, 2009 recognized the increasingly important roles of reducing emissions from deforestation and forest degradation, forest conservation, sustainable forest management, and enhancement of carbon sinks in developing countries (REDD-plus). The FD of Myanmar is very keen to initiative

REDD-plus mechanism since about 48% of total country area is forested. Myanmar has very much potential to contribute mitigating climate change by conservation existing natural forests and restoration of degraded forests across the country.

There are a number of driving forces that impact upon the forest sector and it has to be noted that their impact is collective. Thus, in considering probable scenarios, the focus should be on a limited number of drivers, with the other forces assumed to be constants. Forests are increasingly intertwined with economic, social, environmental, policy and institutional issues such that any changes in society affect forests and vice versa. The Myanma forestry sector is affected by environmental, technological, economic, social, demographic, and policy/institutional drivers of change (Forest Department 2007).

Some of the key areas include environmental awareness, demand for forest products and forest conversion, energy demand, wood-based industry and infrastructure development (dams, roads, etc.), poverty, and shifting cultivation, transboundary issues, national economic and land-use policy, financing, capacity to manage forests, market access, and law enforcement and combating illegal logging.

Screening of these drivers led to the selection of a limited number considered to be important and yet uncertain in their future trajectory. Of these, demand for forest products and land, energy demand, infrastructure development, illegal logging, transboundary issues, national economic policy, international conventions and capacity to manage forests are expected to improve in the future. Thus, poverty and land-use policy were selected as key drivers of change for Myanma forest and the forestry sector.

As in many other developing countries, poor people in Myanmar depend heavily on agriculture, forestry and fisheries for their livelihoods and food security. Although the government claimed that average income of the people lies above the local poverty line, relative poverty is manifested especially in rural and remote areas; most of them are close to the forests and engage in shifting cultivation. Without intervention, a vicious cycle of poverty and deforestation would be set in motion — heavy dependence on forests due to poverty, severe deforestation due to heavy dependence on the forests, less income generation due to severe deforestation, and poverty due to lesser income.

Four policy interventions are suggested to alleviate forest poverty: transferring tenure from governments to communities, improving market access, promoting community forestry, and providing communities with payments for environmental services such as the sequestration of carbon or watershed protection (CIFOR 2007). Out of the four policy options, the activity for promoting community forest has been undertaken and activity for improving market access is ongoing but insignificant.

In the context of REDD-plus mechanism, Myanmar, although in its early stage, with her historical successful forest and nature conservation experiences is ready to make concerted efforts in collaboration with regional and international programme to achieve a common goal to combat climate change.

Abbreviation

AIPP	Asian Indigenous Peoples Pact
CD	Capacity Development
CF	Community Forest(ry)
CFI95	Community Forestry Instructions (1995)
DMH	Department of Metrology and Hydrology
DZGD	Dry Zone Greening Department
EFDB	Global Emissions Factor Database
ETWG	Environmental Technical Working Group
FAO	Food and Agricultural Organization of the United Nations
FD	Forest Department
FRI	Forest Research Institute
GIS	Geographic Information System
ICIMOD	International Centre for Integrated Mountain Development
INC	Initial National Communication
IPCC	Inter-governmental Panel on Climate Change
JICA	Japan International Cooperation Agency
KOICA	Korean International Cooperation Agency
MNPED	Ministry of National Planning and Economic Development
MOAI	Ministry of Agriculture and Irrigation
MOECAF	Ministry of Environmental Conservation and Forestry
MRV	Measurement, Reporting and Verification
MTE	Myanmar Timber Enterprise
NFI	National Forest Inventory
NGO	Non-governmental Organization
NSDS	National Sustainable Development Strategy
RECOFTC	Regional Community Forestry Training Centre for Asia and the Pacific (The Centre for People and Forests)
REDD+	Reducing Emissions from Deforestation and Forest Degradation, and the role of Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks
REL	Reference Emissions Level
RL	Reference Level
RS	Remote Sensing
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

REDD+ Development under UNFCCC: From Bali Action Plan to Doha Climate Conference[1]

Ma Hwan-Ok[2]

1. Introduction

Climate change has been elevated to the highest level of global political agenda as emissions from deforestation and forest degradation represent about 17 percent of annual global greenhouse gas emissions and that tackling deforestation is, therefore, one of the key options for reducing these emissions. It is common knowledge that forests constitute an important reservoir that can sequester CO2 which is a major greenhouse gas. Tropical forests cover more than 1 billion ha and therefore offer an enormous potential to contribute to climate change mitigation. Tropical forests are also the depository of more than half of the world's terrestrial plant and animal species.

At the COP (Conference of Parties) 13 of the United Nations Framework Convention on Climate Change (UNFCCC) in 2007 in Bali, Indonesia, it was decided to work on a mechanism to address emissions reductions from forest. Currently, the global structure of such a mechanism is being intensively negotiated and will be further discussed until the COP 21 in 2015 in which a new global climate change protocol will be ready for ratification.

This paper aims to provide updated information on major developments in tropical forests related issues in the decisions and related discussions under the UNFCCC from the Bali Action Plan in 2008 to the Doha Climate Conference in the COP 18 in Doha, Qatar in 2012. Specifically, it summarizes the discussions in the recent meetings of the COP, the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) as well as the Ad Hoc Working Group on the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-Term Cooperation Agreements (AWG-LCA). In the concluding remarks, it highlights the importance of developing an effective REDD+ national strategy in Myanmar based on valuable lessons from the implementation of sustainable forest management in the country.

1 This paper has been reproduced based on Document ITTC(XLVIII)/12 "Developments in UNFCCC/IPCC Discussions regarding Forests and their Potential Implications for Tropical Forests and World Tropical Timber Economy" which was presented at the ITTC at its FORTY-EIGHTH SESSION (5 – 10 November 2012, Yokohama, Japan).

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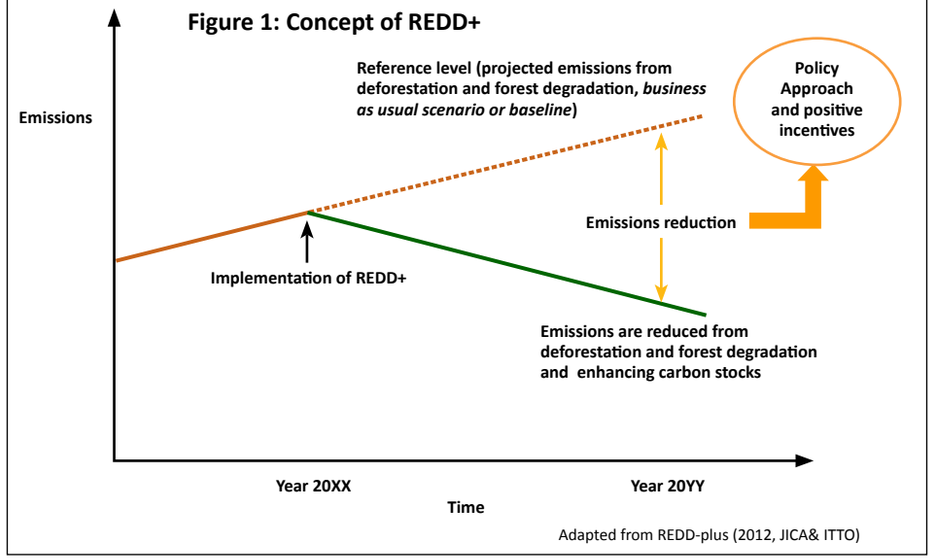
1.1 The REDD+ Concept

The main idea of REDD has came from the importance of reducing emissions from deforestation and forest degradation by providing positive incentives (payment, credit) such as financing to developing countries when such emissions are reduced compared to business as usual scenarios (reference level). The REDD has been evolved to REDD+ by adding the enhancement of carbon stocks from forest-based mitigation actions. Figure 1 shows a conception of REDD+ which is designed to provide positive incentives based on emissions reduction. Since REDD is a complicated issue in terms of the nature of carbon benefits generated from REDD+ in particular non-permanence due to various natural and human-induced disturbances such as forest fires, and illegal forest activities as well as REDD+ co-benefits contributing to biodiversity conservation and local community development, it would also be important to enhance policy approaches by international community in the treatment of carbon credits of REDD+ in the new climate change protocol in addition to positive incentives.

The basic mechanism of REDD+ is as follows. First, it is essential to define a reference level which represents the volume of emissions expected to occur in the absence of RED+ activities to control deforestation and forest degradation (Figure 1-dotted line) (JICA & ITTO, 2012).The reference is estimated from past trends of deforestation and forest degradation. In this case, the analysis of historical deforestation rates is an important first step towards developing a reference level. Given a sub-national scale or national scale, it requires for substantial work by analyzing remote sensing satellite imageries.

Figure 1: Concept of REDD+



Adapted from REDD-plus (2012, JICA& ITTO)

1.2 The multi-objectives of REDD+: from carbon emissions to biodiversity and indigenous people and local communities

The principle objective of REDD+ is to reduce emissions from deforestation and forest degradation in accordance with the objective of the UNFCCC to stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (Article 2). However, since 2005 the objective of REDD+ has been expanded to contribute to the conservation of biodiversity and the enhancement of livelihoods of forest-dependant indigenous people and local communities. It implies that design and implementation of national REDD+ strategy need to address such multiple objectives or make sure the implementation of social-environmental safeguards while reducing emissions.

The multi-objectives of REDD+ have been highlighting with social-environmental safeguards guidelines. Certainly it would be a big challenge for REDD+ host countries in addressing such multiple objectives. There is a view that, in the coming REDD+ negations, such a multi-objectives approach might result in a complicated REDD+ structure which would reduce its effectiveness (Angelsen et al. 2012). There is therefore a need to understand the evolution of REDD+ negotiations and to contribute to the efficient and effective design of global REDD+ structure in the new climate change protocol which is supposed to be ready by 2015.

2 The status of REDD+ decisions and related discussions under UNFCCC

2.1 Decisions on REDD+ before the COP 17 (Durban) of the UNFCCC: national strategy development and a phased approach

Effective implementation of REDD+ has been a key part of international climate change discussions since the Bali Action Plan adopted at the COP 13 of the UNFCCC in Bali, Indonesia in 2007 where an agreement was reached for designing a global mechanism for "*Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries*".

REDD+ has been included in the work of the AWG-LCA since the COP 13. REDD+ is apparently one of the most important parts of the discussions under this subsidiary body.

The COP 16 decision (1/CP.16) adopted under the Cancun Agreements in 2011 recognized the importance of REDD+ and defined the scope of five REDD+ activities, namely (1) reducing emissions from deforestation, (2) reducing

emissions from forest degradation, (3) conservation of forest carbon stocks, (4) Sustainable management of forest, and (5) enhancement of forest carbon stocks. However, this decision did not include the definitions of forest degradation, conservation, sustainable management of forest and enhancement of forest carbon stocks and specifying the definition of such terms still remain an unfinished task for the SBSTA. Many countries are currently using the definitions approved for A/R CDM (Robledo and Gardi 2011).

The COP 16 decision also called for developing country Parties to undertake the following activities:

(a) Design a national strategy or action plan

(b) Establish a national forest reference emission level and/or forest reference level or, if appropriate, as an interim measure, sub-national forest reference emission levels and/or forest reference levels,

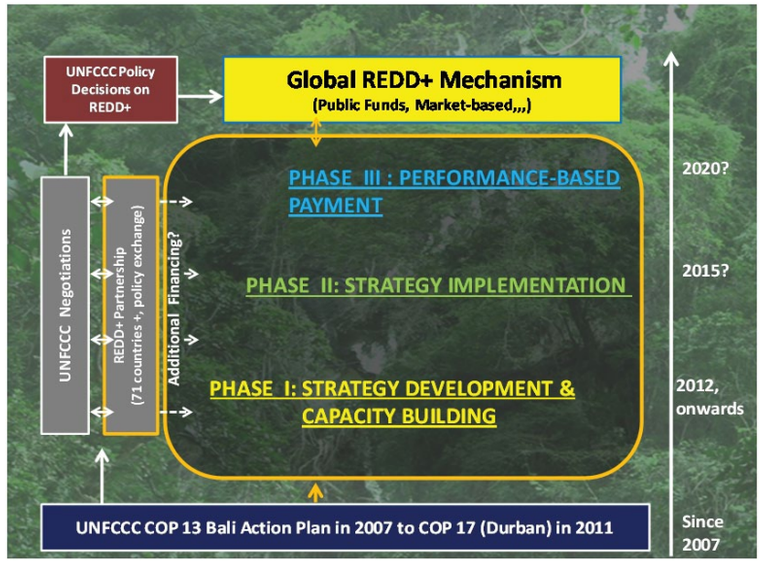
(c) Design a robust and transparent national forest monitoring system for the monitoring and reporting of activities; and

(d) Design a system for providing information on how the agreed social and environmental safeguards are being addressed and respected

Developed countries were urged to provide financial and technical support to assist developing countries to engage key stakeholders (including communities and indigenous peoples) to prepare national strategies, policies and measures to implement REDD+ and to develop national forest reference emission levels, national forest monitoring systems and a system for providing information on how REDD+ social and environmental safeguards are being addressed and respected (IISD 2010)

The COP 16 decision further recognizeed the need of implementing a three-phased approach to REDD+ (see Figure 1). Phase I highlights the important of developing national REDD+ strategies and action plans as a first priority though multi-stakeholders' consultations by addressing drivers of deforestation and forest degradation, land tenure issues, forest governance issues, and the social and environmental safeguards. While Phase II will continue capacity building by implementing national REDD+ action plans developed under Phase I, result-based payments will be made in Phase III. Assuming that a new international climate agreement will take place from 2020, REDD+ result-based payments at the national level are likely in place from 2020. The COP 16 decision also confirmed the implementation at both national and sub-national levels for an "interim" period (IISD 2010).

Figure 1 - REDD+ Phased Approach Landscape



Source: Adapted from Robledo and Gardi (2011)

2.2 REDD+ developments since COP 17 (Durban) of the UNFCCC: national forestry monitoring system and social and environmental safeguards

After the conclusion of the Forty-seventh Session of the ITTC in November 2011, a number of discussions relating to REDD+ have taken place under the UNFCCC. These include:

- The COP 17 in Durban in December 2011 where outcomes included a decision to adopt a new protocol applicable to all Parties no later than 2015 and the establishment of a second commitment period under the Kyoto Protocol.
- The Subsidiary Body for Scientific and Technological Advice (SBSTA) (36th session), the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) (15th session), the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) (17th session) and the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) (1st session) in May 2012; and the informal additional sessions of the AWG-LCA, the AWG-KP and the ADP on 30 August - 5 September 2012.

REDD+ discussions at the COP 17 in Durban in December 2011 moved by focusing on national forest monitoring systems and measuring, reporting and verifying of emissions by sources and removals by sinks, social and environmental safeguards, reference levels and financing.

Modalities for National Forest Monitoring Systems (NFMS) and Measuring, Reporting and Verifying (MRV)

At the 35th Session of the SBSTA in Durban, no decision could be reached on modalities for national forest monitoring systems (NFMS) and measuring, reporting and verifying (MRV) of anthropogenic forest-related emissions and removals, forest carbon stocks and forest area changes resulting from the implementation of REDD+ activities. At the 36th Session of the SBSTA in May 2012, discussions resulted in the advancement of a few points but the SBSTA agreed to continue its work on guidance for the remaining issues relating to NFMS and MRV with the aim of completing this work through its 37th Session with draft decisions for the COP 18 in December 2012.

At the 36th Session of the SBSTA it was recommended that the development of NFMS should follow guidance provided in Decision 4/CP.15 and most recent IPCC guidance and guidelines; and a "robust" NFMS "should provide data and information that are transparent, consistent over time, [and] and complete. Further, that the NFMS should build upon existing systems, provide information on all forest areas or land in the country, enable assessment or identification of changes that have occurred in natural forests, be flexible and allow for improvement, reflect the phased approach to REDD+, and identify potential sources of uncertainties to the extent possible (López-Casero et al 2012).

The 35th Session of the SBSTA recommended that MRV should be consistent with guidance provided in 4/CP.15 and should include modalities developed for the MRV of Nationally Appropriate Mitigation Actions (NAMAs); and MRV systems should provide data that is transparent, complete, consistent with RELs/RLs and as accurate as possible (López-Casero et al 2012).

The UNFCCC Secretariat has created a web platform that facilitates exchanges of experiences and tools for REDD+ methodological issues. (http://unfccc.int/methods_science/redd/items/4531.php).

Social and Environmental Safeguards

With regard to social and environmental safeguards for REDD+, the COP 17 Decision stipulated that countries with forests should report on how the safeguards referred to in Appendix I to decision 1/CP.16 are being addressed and respected throughout the implementation of the activities.

Development of REDD+ safeguards should be further advanced based on the following general principles provided by Appendix I to decision 1/CP.16 (The Cancun Agreement):

- *Consistency with the objectives of national forest programmes and relevant international conventions and agreements*

- *Transparent and effective national forest governance structures*
- *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*
- *Full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities*
- *Consistency with the conservation of natural forests and biological diversity*
- *Actions to address the risks of reversals*
- *Actions to reduce displacement of emissions.*

Following the above guidance on safeguards for REDD+, several initiatives have emerged to the integration of REDD+ safeguards and due attention has been given to the importance of establishing a credible system of social-environmental safeguards to ensure the full and effective participation of indigenous people, local communities and the conservation of forest biodiversity. These include UN-REDD Programme Social and Environmental Principles and Criteria (SEPC), The World Bank Forest Carbon Partnership Facility Readiness Fund's Common Approach to Environmental and Social Safeguards and REDD+ Social & Environmental Safeguards (REDD+ SES) initiative.

Key features of those principles are the maintenance or enhancement of the full and effective participation of indigenous people and local communities and biodiversity conservation. For instance, UN-REDD Programme Social and Environmental Principles and Criteria adopted in March 2012 provide a guiding framework for addressing environmental and social issues in UN-REDD National Programmes through the following principles:

1 *Apply norms of democratic governance, as reflected in national commitments and Multilateral Agreements*
2 *Respect and protect stakeholder rights in accordance with international obligations*
3 *Promote sustainable livelihoods and poverty reduction*
4 *Contribute to low-carbon, climate-resilient sustainable development policy, consistent with national development strategies, national forest programs, and commitments under international conventions and agreements*
5 *Protect natural forest from degradation and/or conversion*
6 *Maintain and enhance multiple functions of forest including conservation of biodiversity and provision of ecosystem services*

7 *Avoid or minimize adverse impacts on non-forest ecosystem services and biodiversity*

Modalities on Reference emission levels (REL) and Reference levels (RL)

Discussions on Reference emission levels (REL) and Reference levels (RL) at the COP 17 focused on consideration of historical deforestation, projections, and national circumstances. There was not much change from the previous draft. Countries can still choose to use RELs or RLs and develop the same based on national circumstances. Sub-national REL and/or RL can be elaborated as an interim measure while moving towards a national REL and/or RL. Parties were invited to submit information and rationale on the development of their forest RELs and/or forest RLs in accordance with guidelines (IISD 2011).

Under SBSATA, it is expect to receive further guidance on identifying methodological issues and assessing mitigation potential of Land Use, Land-use Change and Forestry (LULUCF) activities in developing countries in relation to drivers of deforestation and forest degradation.

Financing Options for the Full Implementation of Results-based REDD+ Actions

At the COP 17 there were discussions over market-based mechanisms vs. non market-based mechanisms and the inclusion of offsets but no decision was made. Recognizing the importance of effective and continuing support for activities referred to in decision 1/CP.16, paragraphs 73 and 76. Parties agreed that results-based finance provided to developing country parties that is new, additional and predictable may come from a wide variety of sources – public and private, bilateral and multilateral, including alternative sources (decision 2/CP.17). Parties also noted that appropriate market-based approaches could be developed by the COP to support results-based actions by developing country Parties ensuring that environmental integrity is preserved, and the provisions of appendix I and II to Decision 1/CP.16 are fully respected (IISD 2011).

Such discussions suggest that REDD+ activities undertaken by developing country Parties in accordance with national circumstances and respective capabilities could be supported through significant financial resources in a sustainable way. In this regard, it is interesting to note that based on the pledges made for the Fast-Start financing for REDD+ (2010-2012) is about USD 4.3 billion, the total available funding for REDD+ from 2008 onwards is estimated at USD 7.3 billion divided into USD 4.8 billion through bilateral programmes and projects, USD 2.3 billion through multilateral, international and regional mechanisms, and USD 150 million through voluntary carbon markets (Simula 2010).

Parties were invited to submit, by 5 March 2012, their views on modalities and procedures for financing result-based actions, and requested the AWG-LCA to report on progress made and any recommendations to the COP 18 in Doha through considering the above submissions, a technical paper and the report on the outcomes of a workshop.

The UNFCCC Secretariat has prepared a technical paper on financing options for the full implementation of results-based actions relating to the activities referred to in decision 1/CP.16, paragraph 70, including related modalities and procedures (UNFCCC 2012)

Under the informal additional session of the AWG-LCA on 30 August-5 September 2012, a workshop on financing options for the full implementation of the results-based actions relating to REDD+, including modalities and procedures for financing, took place on 30 August 2012. Discussions made in the workshop included: financing options, sources and enabling conditions for scaling-up financing for the full implementation of the results-based actions; the role of the private sector in REDD+ investments and fostering private-sector partnerships; institutional arrangements including the establishment of a REDD+ board, national and international registries, and review and regulatory bogies (IISD 2012).

In fact, considerable progress has been achieved in the operation of various multilateral and bilateral funds and programs like the Forest Carbon Partnership Facility (FCPF) of the World Bank, the UN-REDD and the REDD+ Partnership as well as the national initiatives like the Amazon Fund to advance the readiness of REDD+ in developing countries. However, it has been recognized that the public financing alone will not suffice to reach the level of financing required and thus private investment and carbon markets should have a fundamental role in mobilizing resources for financing result-based REDD+ activities. In this regard, there is a certain level of general understanding that securing appropriate financing from different sources including public funds and market-based mechanisms will be vital to the effective implementation of REDD+ and that the Green Climate Fund (GCF) can be a key instrument in increasing results-based finance for REDD+ (IISD 2012). Further guidance of the COP on REDD+ integration in the GCF and financing methodological development for the valuation of multiple benefits of REDD+ will be important in comparison with other forms of mitigation actions focused on verified emission reductions.

At the COP 18 in Doha, REDD+ related decisions include; establishment of a work programme on results-based finance in 2013 to improve and increase finance for REDD activities, and to incentivise non-carbon benefits; and facilitating the process to address issues such as the provision of financial and technical support for developing countries in the forestry sector. So, more intensive discussions on the modalities of

financial and technical support will take place before 2015.

- Work programme on results-based finance in 2013
- Aim to improve and increase finance for REDD activities, and to incentivize non-carbon benefits
- Work programme may end by COP19
- Process to address issues such as the provision of financial and technical support for developing countries in the forestry sector
- Parties invited to submit views on the modalities of financial and technical support by 25 March 2013

3. Status of Afforestation and Reforestation (A/R) CDM under the Kyoto Protocol

With the establishment of the second commitment of the Kyoto Protocol at the COP 17 in Durban in 2011, developing countries can continue to generate afforestation and reforestation credits under the Clean Development Mechanism during the second Kyoto commitment period. It is expected that ad hoc working group on further commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) provides clarification on the role of forest mitigation options in the next commitment period of the Kyoto Protocol beyond 2012 including the topic of Land Use, Land Use Change and Forestry (LULUCF) for Annex I countries (industrialized countries). Since the implementation of A/R CDM implementing on non-forest lands has received criticisms due to their complicated modalities and procedures, the effective design and implementation of A/R CDM projects could be facilitated by more simplified and streamlined modalities and procedures.

4. Concluding remarks

Although there have been slow developments in international climate negotiations related to REDD+ since November 2011, consensus has been made on key requirements that REDD+ mechanism should also permit the sub-national format as an interim measure. Discussion on financing options for the full implementation of results-based actions of REDD+ has been facilitated and will be an important agenda at the AWG-LCA in the near future. Considering multiple benefits of REDD+ actions, it would be useful to explore a mechanism to scale-up incentive systems to ensure such multiple benefits.

With increased recognition of the rights of indigenous people and local communities over forests and the need to safeguard those rights, it would be worthwhile to be aware that in addition to the establishment of a robust national forest resource monitoring system, result-based REDD+ actions require that safeguards measures

are in place with a safeguard information system to monitor the maintenance or enhancement of the long-term social-environmental sustainability of indigenous people and local communities and biodiversity.

In order to facilitate move from international level climate discussions to national level capacity building, many partnerships including ITTO are taking place to address key requirements of REDD+ at the national and/or project levels. Considering the challenges of the full implementation of results-based REDD+ actions, strong and supportive partnerships are essential.

Myanmar has accumulated so much valuable lessons from the implementation of sustainable forest management as the key strategy for the management of her forest resources. Many forest policies have developed and implemented with the participation of key stakeholders. In formulating national REDD+ strategy, the country can build on many lessons from the design and implementation of the existing forest related strategies and policies. These include the recent Forest Policy, and the National Biodiversity Strategy and Action Plan. Development of a set of sound national REDD+ strategy would need to take into account the past experience. In addition, a sound analysis of costs and benefits for REDD+ would be useful to better understand its potential and limitation in a more comprehensive way. It would be crucial whether the coming national REDD+ strategy will be able to sustainably attain the economic, social, and environmental values of the national forest resources in order to ensure the sustainable development.

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Research and Capacity Development for REDD+

A paper presented at the inception workshop of ITTO project on REDD+ capacity development in Myanmar organized by the Ministry of Forestry and Environmental Conservation, Union of Myanmar.

Presented by

Professor YOUN Yeo-Chang, Seoul National University

Introduction

The problem of climate change such as global warming is a critical international issue concerned not only for developed countries but also developing countries. It is widely accepted that the main cause of climate change is the rapid increase of greenhouse gases (GHG) emissions in recent decades. Deforestation accounts 17% of global GHG emissions. Parties of UN Framework Convention on Climate Change (UNFCCC) have adopted the agenda of reducing emissions from deforestation and forest degradation (REDD+). The COP adopted a decision that the developing countries' capacity for REDD+ should be developed further in order for the REDD+ scheme to operate effectively. It is necessary to assess the current capacity of Myanmar for REDD+ implementation. In this paper the readiness of developing countries for REDD+ will be overviewed first and the current status of research on REDD+ in the world will be reviewed. Then the needs of research and development for REDD+ in Myanmar will be assessed. In the final session a proposal for collaboration in research and development on REDD+ will be presented.

The REDD is a concept proposed to provide financial incentives for developing countries to voluntarily reduce emissions from deforestation and forest degradation by curbing deforestation and enhancing sustainable forest management. There should be an agreement between developed nations and developing countries on the payment conditions. The agreement should be implement by a set of rules guaranteeing the reduction of emissions from deforestation and forest degradation. The rule should include an implementation schedule containing a baseline (based either on a historical reference case or future projection) against which the outcome of REDD+ plan will be measured.

A developing country that demonstrates emissions reductions of emissions by (1) avoiding deforestation and (2) forest degradation and (3) enhanced forest management may be able to sell those carbon credits on the international carbon market or elsewhere. These emissions reductions could simultaneously mitigate climate change, conserve biodiversity and protect other ecosystem goods and services.

What does a developing country need to preparein order to implement REDD+ programme? The country should be able to do:

- Account the changes in carbon stock in forests and harvested forest products
- Estimate the economic and social costs of REDD+ implementation
- Evaluate the economic, social and environmental benefits (biodiversity) for alternative scenarios of land resources management
- Understand and take into account the trade-offs between carbon, food, biomass and energy into land use planning.

Current Status of REDD+ of the world

The UN-REDD Programme is the United Nations collaborative initiative on Reducing Emissions from Deforestation and forest Degradation (REDD) in developing countries. The Programme was launched in 2008 and builds on the convening role and technical expertise of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). The UN-REDD Programme supports nationally-led REDD+ processes and promotes the informed and meaningful involvement of all stakeholders, including Indigenous Peoples and other forest-dependent communities, in national and international REDD+ implementation. The Programme supports national REDD+ readiness efforts in **46 partner countries**, spanning Africa, Asia-Pacific and Latin America, in two ways: (i) direct support to the design and implementation of UN-REDD National Programmes; and (ii) complementary support to national REDD+ action through common approaches, analyses, methodologies, tools, data and best practices developed through the **UN-REDD Global Programme.** The figure 1 shows the countries in partner with UN-REDD Programme. By July 2012, total funding for these two streams of support to countries totaled US$117.6 million.

Figure 1. UN REDD Program Partner Countries

Forest Carbon Partnership Facility

The Forest Carbon Partnership Facility is a global partnership ofgovernments, businesses, civil society, and Indigenous Peoples focused on reducing emissions from deforestation and forest degradation, forest carbon stock conservation, the sustainable management of forests, and the enhancement of forest carbon stocks in developing countries (activities commonly referred to as REDD+).

The four strategic objectives of the FCPF:

- To assist countries in their REDD+ efforts by providing them with financial and technical assistance in building their capacity to benefit from possible future systems of positive incentives for REDD+
- To pilot a performance-based payment system for REDD+ activities, with a view to ensuring equitable benefit sharing and promoting future large-scale positive incentives for REDD+.
- Within the approach to REDD+, to test ways to sustain or enhance livelihoods of local communities and to conserve biodiversity.
- To disseminate broadly the knowledge gained in the development of the Facility and the implementation of Readiness Preparation Proposals (RPPs) and Emission Reductions Programs (ERPs).

The FCPF's funding mechanisms:

The FCPF has two separate but complementary funding mechanisms — the Readiness Fund and the Carbon Fund — to achieve its strategic objectives. Both funds are underpinned by a multi-donor fund of governments and non-governmental entities, including private companies that make a minimum financial contribution of $5 million.

- Contributors to the Readiness Fund are known as Donor Participants.
- Contributors to the Carbon Fund are known as Carbon Fund Participants.
- Developing countries participating in the FCPF (both funds) are known as REDD Country Participants.

The FCPF's Governance Structure:

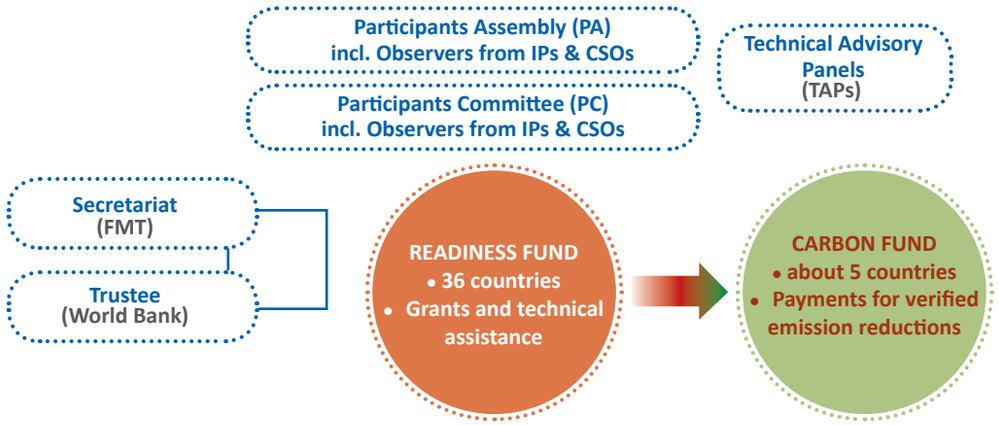

Figure 2. FCPF's Governance Structure

Forest Investment Program

The Forest Investment Program (FIP) is a targeted program of the Strategic Climate Fund (SCF) within the Climate Investment Funds (CIF). The FIP supports developing countries' efforts to reduce deforestation and forest degradation (REDD) and promotes sustainable forest management that leads to emission reductions and the protection of carbon reservoirs. It achieves this by providing scaled-up financing to developing countries for readiness reforms and public and private investments, identified through national REDD readiness or equivalent strategies. The detailed information can be found in the web site. http://www.climatefundsupdate.org/listing/forest-investment-program

REDD+ in Myanmar

- High rate of deforestation: The annual change rate of the total forest area between 1990 and 2000 was -1.2 percent and that of between 2000 and 2010 was -0.9 percent (FAO, 2011).
- Deforestation and forest degradation mainly due to agricultural expansion, conversion to pastureland, infrastructure development and destructive logging
- REDD+ Road Map being formulated
- UN REDD+ Partner Country
- Experiences of Community Based Forest Management
- National Forestry Inventory available since early1990s

- Weak Activities of NGOs
- Lack of Policies for REDD+

Current Status of Research on REDD+

Literature review suggests that there are three trends in research on REDD+:

- Technical Approach
- Economic approach focused on estimating costs of REDD+
- Institutional Approach

Research on estimation of forest carbon stock

- Gibbs et al.(2007)have provided IPCC Tier 1 estimates of national- level forest carbon stocks that can be used immediately by countries and policy-makers. Each country will need to use expert judgment based on financial, time and capacity constraints in deciding whether to use higher Tier methods.
- Kiyono et al.(2010) applied a simplified method for estimating CO_2 emissions from deforestation in Cambodia. They calculated carbon stock change by monitoring forestland and periodically summing up the land area and its averaged carbon stock for important forest types.
- Fearnside (2009) accounted leakage of REDD using scenarios with consideration of time value.
- Harris et al. (2008) identified optimal areas for REDD in E. Kalimantan using the generalized stratification matrix accounting carbon emissions from REDD as seen the Figure 3.

Forest Condition →

Forest Type ↓

	Mature	Logged	Secondary (young)	Secondary (med. aged)	Burnt
Moist					
Dry					
Seasonal					

Figure 3. Generalized stratification matrix accounting carbon emissions from REDD

Research on supply potential of REDD carbon credits

Deveny et al.(2009) estimated the supply potential of REDD carbon credits in the world by country using forest carbon index accounting forest governance conditions and risks of each country.

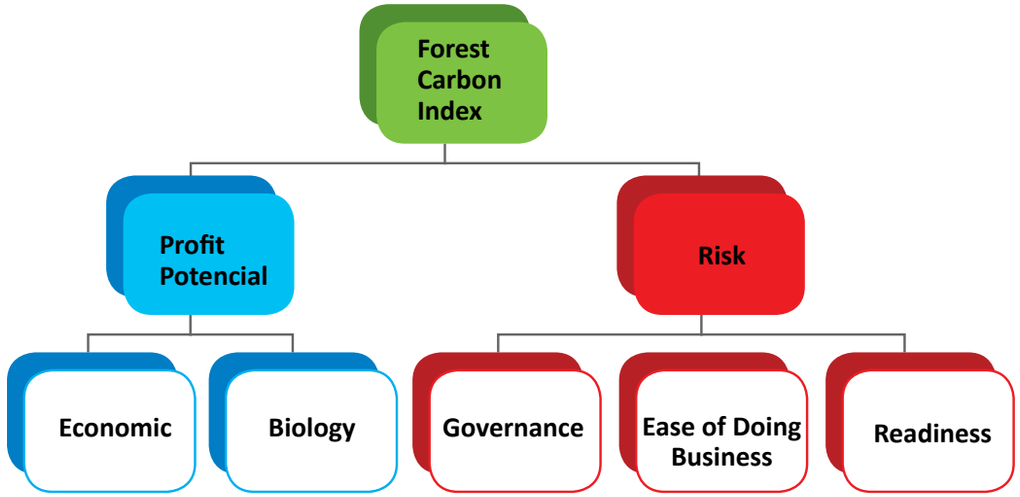

Figure 4. Forest Carbon Index Framework

Studies on Reference Emission Level

Leischner and Elsasser (2010)compared four approaches for a REDD reference emission level, namely:

- Compensated Reduction (CR): $\Delta CR = (FA2005 - FA2000 - FA1990 - FA2000)*C2005$
- Compensated Conservation (CC): $\Delta CC = (FA2005 - 1990\ 2\ 2000)*C2005$
- Incentive Accounting (IA): $\Delta CA = (ac00-05 - ac90-00)*C2005$
- Corridor Approach (CA): $\Delta IA = (FA2005 - FA2005,a)*C2005$

Countries least developed countries (with regard to HDI) with a high forest cover can generate most credits under CR while countries which show a recent increase in their forest area would have been most advantageous under CC.

The country's characteristics correspond to the question of which different approaches might be the most favourable in terms of generation of credits.

Research on REDD+ Costs

- Sathaye et al. (2011): the cost for reducing deforestation is low in Africa and several times higher in Latin America and Southeast Asia. These cost estimates are sensitive to the uncertainties of how much unsustainable high-revenue logging occurs.
- Strassburg et al. (2009) show that at low CO_2 prices (similar to US$ 8/t CO_2) a successful mechanism could reduce more than 90% of global deforestation at an annual cost of US$ 30 billion.
- Busch et al (2012) estimated the impacts that alternative national and sub-national economic incentive structures for REDD+ in Indonesia.

Estimates of Opportunity Cost of REDD+

- Hunt (2010) examined the abatement in greenhouse gas emissions achievable in Papua New Guinea by a reduction in deforestation and forest degradation (REDD) and its opportunity costs.
- Cessation of logging for export mitigate at between 658 and 788 million tonnes (Mt) of carbon dioxide at an opportunity cost nationally of between US$3.40 and US$5.64/t.
- Cessation of new oil-palm establishment mitigates totals between 45 and 113 Mt of CO_2, at a national cost of about US$40/t.

REDD+ Research by Institutional Approach

- Sandbrook et al (2010) worry recentralization of Forest Governance:
  - increasing the value of forest resources through global carbon markets without attending to local governance and rights will create political incentives towards centralized governance, which could lead to greater forest loss and lower forest-related benefits for the poor
- Sikor et al (2010) suggest the need of Nested Forest Governance:
  - The need for decision-making processes at multiple levels implies that for REDD-plus, the current focus on global negotiations and incipient attention to national processes requires complementary efforts at the local level.
- Lawlor et al (2010) argue that positively engaging rural populations in REDD+ may be integral to the effectiveness of programs in reducing deforestation and degradation, and enhancing forest carbon stores.
- Palmer(2010) explores the links between forest property rights and liability, to different REDD+ policy options and their implications for permanence.

- Baez(2011)suggests on how to build a legal framework that capitalizes on the environmental and economic benefits of REDD while protecting the rights and livelihood of indigenous peoples.
- Purnomo et al(2012): REDD+ actors with knowledge, power and leadership, can support or reject REDD+ with a case study in Jambi, Sumatra.
  - Akiefnawati et al.(2010) report a case of conflict resolution for REDD+ in Indonesia by Stewardship Agreement to REDD .
- The recent village forest (HutanDesa) regulation of Indonesia details how to reconcile forest management targets and livelihood interests of forest-edge villages within the framework of a permanent forest estate.
- LubukBeringin in Bongo District, Jambi Province became the first village in Indonesia to secure such an agreement.

Research on REDD+ at CIFOR

- Moving Ahead with REDD: issues, options and implication (2008)
- Realising REDD+: National Strategy and Policy Options (2009)

  Analysing REDD+: Challenges and Choices (2012)
- REDD+ Politics in the Media: case studies from Brazil, Indonesia, Vietnam, Cameroon and Papua New Guinea (2011-2012)
- Forest Governance
- MRV
- Community Forest Management

Research on REDD+ at IGES

- Cambodia's REDD Readiness: Progress And Challenges (2011).
- Developing National REDD+ Systems: Indonesia and Viet Nam (2010).
- REDD+ Database (http://redd-database.iges.or.jp/redd/).
- Japan aims to develop partners for bilateral GHG emission offsets.

Research on REDD+ at Korea Forest Research Institute

- Pilot project for AR CDM and REDD+ in Lombok, Indonesia.
- REDD+ Project in KPHL Rinjani Barat, Sumatra, Indonesia.
- Collaborative Research Networking for REDD+ in developing countries.
- S. Korea explores both potential carbon credits and global green growth.

Research on REDD+ at Center for Forestry Research on Climate Change **Seoul National University**

- Trends of REDD+ negotiations and researches (2009-2012)
- Developed Countries' contribution to REDD+ & REDD+ strategies for Forest Carbon Credits in Indonesia (2011)
- Economics Feasibility of REDD Project in North (2011)
- REDD+ Readiness in the Developing Countries (2012)
- Capacity Development for REDD+ Readiness in Developing Countries (2012-2014, UNDP South-South Cooperation Project)

Needs of Research on REDD+ in Myanmar

There are needs for research on REDD+ in Myanmar in order to prepare the national strategy and full implementation of REDD+ in the coming years. The needs should be assessed systematically with overview of existing literature, policies and institutions. All interested stakeholders need to be involved in the process of needs assessment for REDD+. The followings are some of items to be included in the needs assessment.

Review of Forest Policies

- Deforestation Drivers

MRV Systems

- Reference level
- Measurement of forest carbon and biodiversity
- Participatory monitoring of forest changes

Governance and Benefit Sharing

- Linking with existing forest practices and REDD+
- Payment for forest ecosystems services
- Actor analysis and political mapping

The speaker proposed a collaborative project for research and development on REDD+ between Myanmar and Republic of Korea with specific ideas including:

- Research Capacity Development
  - Short and long-term training courses (including master and Ph.D. courses)
  - UNDP project for REDD+ capacity building in 5 countries including China, Indonesia, Mongolia, Myanmar and Philippines.

- Collaborative Research on:
  - Linking community forest management and payment for forest carbon service
- Forest governance: Participation and Communication
- Participatory monitoring of carbon stocks and biodiversity

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THE REPUBLIC OF THE UNION OF MYANAMAR
MINISTRY OF ENVIRONMENTAL CONSERVATION AND FORESTRY
FOREST DEPARTMENT

LESSONS LEARNED FROM THE IMPLEMENTATION OF REDD+ PILOT PROJECT SUPPORTED BY KOREA FOREST SERVICE (KFS)

NAING ZAW HTUN, PhD

DECEMBER 2012

1. Introduction

International community emphasizes on REDD+ (Reducing Emissions from Deforestation and Forest Degradation-plus) in combating climate change (Oestreicher et al. 2009). REDD+ has been viewing as a vital emissions mitigation strategy, particularly for developing countries. To involve in this global mechanism, Myanmar has been initiating the REDD+ readiness since 2010 with the cooperation of international organizations as well as with its own capacity. However, Myanmar is a little behind the countries in the Region in implementing REDD+, while some favourable conditions are already existing. Recently, Myanmar has been speeding up the REDD+ readiness with supporting from international organizations such as, UN-REDD program, Norwegian Government, Korea Forest Service (KFS), ITTO etc. Forest Department (FD) implemented an REDD+ pilot project namely, "Mitigation of Climate Change Impacts through Restoration of Degraded Forests and REDD-Plus Activities in Bago Yoma Region, Myanmar" by the supporting of Korea Forest Service (KFS) between 24th November 2011 and 23rd November 2012. The summary of the project is presented in Box 1.

Box 1. Summary of the REDD+ pilot project.

Project title	Mitigation of Climate Change Impacts Through Restoration of Degraded Forests and REDD-Plus Activities in Bago Yoma Region, Myanmar
Implementing agency	Forest Department
Supporting agency	Korea Forest Service (KFS), Republic of Korea
Project site	Compartment XII , Yoma public protected forest, Yedashe Township, Bago Region
Nearby community	Zayebauk Village, 68 households with the population of 294
Period	12 Months (2011 November – 2012 November)
Funding	US$ 100,000

2. Project site

This pilot project was implemented in the degraded forest in Compartment XII of Yoma public protected forest located in Yedashe Township, Bago Region (Figure 1). The nearest village is Zayebauk Village, which has 68 households with the population of 294. The site is dominated by degraded forests. The major livelihoods of the local people are agriculture and part time labour in the road construction and private plantations.

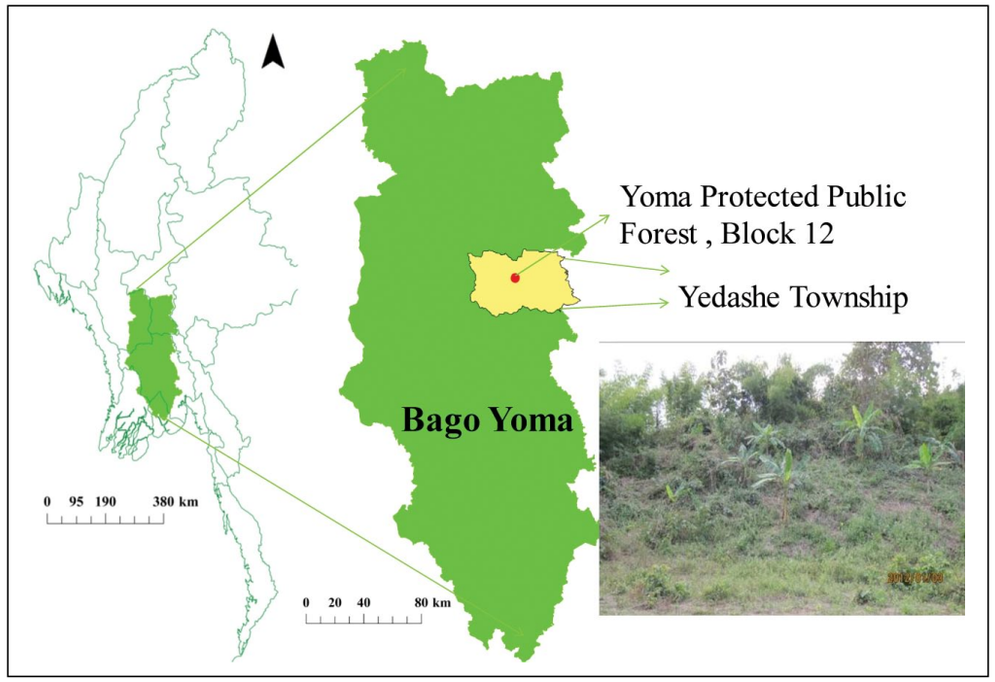

Figure 1. Project site.

3. Objectives of the project

The objectives of the project were as follows:

a) To restore the degraded forests in collaboration with local community;

b) To estimate the above ground biomass at the landscape level using the satellite image; and

c) To strengthen capacity and enhance awareness of FD Staff and relevant stakeholders in REDD+ readiness.

4. Project activities

To achieve the objectives of the pilot projects, a couple of activities concerned with enhancing carbon stock, raising capacity and awareness on REDD+, and preparing for monitoring, reporting and verification (MRV) were conducted (Table 1).

Table 1. Activities of the pilot with different purposes.

No.	Activity	Purpose
1.	Restoring degraded forest land	Enhancement of forest carbon stock
2.	Training, workshop, public talk and study tour	Capacity building and awareness raising about REDD+
3.	Estimating biomass at the landscape level using the satellite image	Developing a method for baseline carbon for MRV
4.	Supporting the community	Income generation, rural development and increasing local supporting
5.	Preparation of technical reports (deforestation analysis, Baseline carbon, benefit sharing, REDD+ concept)	Development of REDD+ Readiness

4.1 Restoring degraded forest land

Conservation of the degraded forest is one of the major components of the project. To implement this component, the project team conducted the establishment of forest arboretum, community woodlot and enrichment for degraded forest to conserve and restore degraded forest (Figure 2).

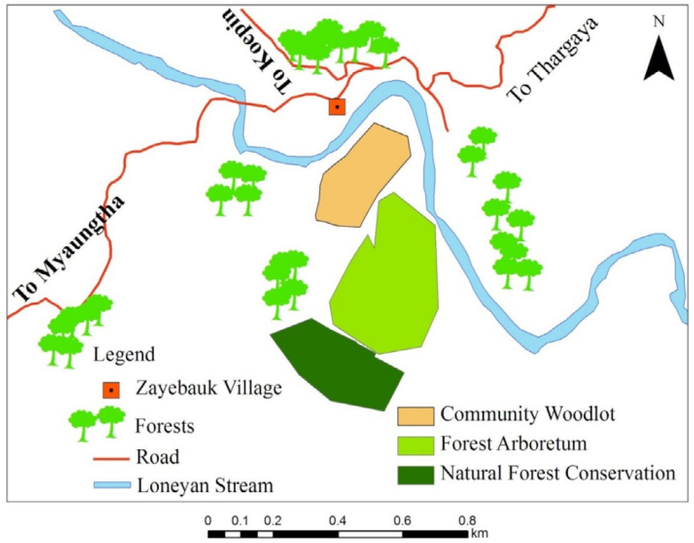

Figure 2. Map showing the restoration activities of the pilot project.

The areas of forest arboretum, community woodlot and natural forest conservation were 10 ha, 5 ha and 5 ha, respectively. Following the instructions of the Forest Department for the plantation establishment, forest arboretum and community woodlot were set up (Figure 3). A total of 25 and 13 tree species were planted for forest arboretum and community woodlot, respectively, and the species can be grouped into commercial tree species, multipurpose tree species and shade & ornamental tree species.

The area with the high tree density and with several regrowth of the project aite was selected for natural forest conservation, and it covers approximately 5 ha. A total of 750 seedlings comprising Tectona grandis, Xylia xylocarpa and Pterocarpus macrocarpus were planted in the gap of natural forest conservation area as the enrichment planting (Figure 4), and improvement felling and climbing cutting were conducted as well.

Figure 3. The activities of establishing of forest arboretum and community woodlot.

Forest characteristics were examined through field measurement. In ArcGIS, sample plots were setup by systematic random design at minimum 30 m intervals , and there are total of 78 sample plots, and 17 plots (22 %) of were selected for forest inventory. The sample plots were nested plots (40 m x 40 m for trees with DBH ≥ 20 cm, 20 m x 20 m for trees with DBH between 19 cm and 10cm, and 10 m x 10 m for all trees with DBH between 9 cm and 5 cm) (Figure 5).

Figure 4. Natural forest conservation area, and enrichment activities.

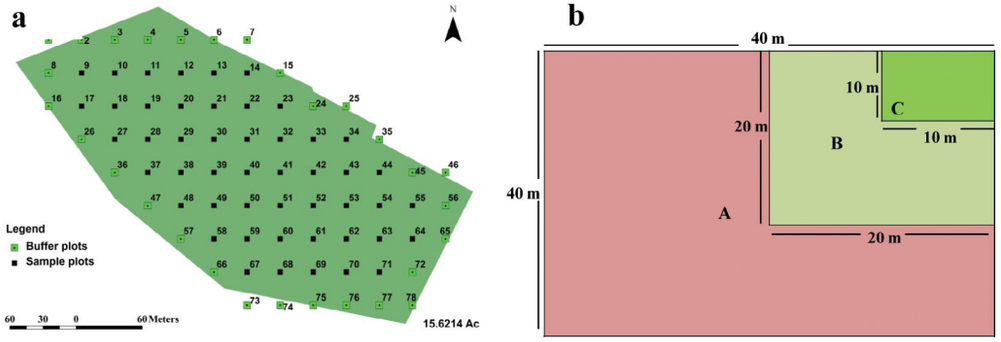

Figure 5. (a) Sample plots distribution; b) sample design.

The quantitative forest inventory was carried out in April, 2012 by the Forest Inventory Section of the Planning and Statistics Division of Forest Department together with local FD staff (Figure 6).

Figure 6. Forest inventory in natural forest conservation area.

A total of 33 tree species (≥ 5 cm DBH) representing 30 genera and 15 families, were recorded from seventeen nested plots (Table 2). A total density of 882 per one hectare were estimated with the total basal area (tree ≥ 5 cm DBH) of 12.6 m2/ha.

Table 2. Characteristics of forest stands for trees with ≥5 cm DBH. Values given are mean ± standard error.

Parameters	Characteristics
No. of sample plots	17
Mean density (no./ha)	882± 268
Mean basal area (m2/ha)	12.6 ±2.4
Number of species	28
Number of genera	26
Number of families	16

Dominance, calculated as the important value index (IVI) of different species, showed that *Tectona grandis* (Kyun) is the major dominant species followed by *Xylia xylocarpa* (Pyinkado), *Stereosperum suaveolens* (Kywema-gyolein). The Teak and its associated species Pyinkado, major characteristics of mixed deciduous forest of Bago Yoma, occupy almost 50 % of total IVI.

Species	Relative basal area	Relative density	Relative frequency	IVI	IVI (%)
Tectona grandis	42.29	48.31	24.19	114.79	38.3
Xylia xylocarpa	10.65	8.14	12.9	31.69	10.6
Stereospermum suaveolens	4.85	13.56	1.61	20.02	6.7
Stereospermum colais	3.14	3.22	6.45	12.81	4.3
Albizia chinensis	6.37	0.85	4.84	12.05	4.0
Sub total	67.3	74.08	49.99	191.36	63.8
Remaining 23 species	32.7	25.96	49.97	108.64	36.2
Total	**100**	**100**	**100**	**300**	**100.0**

Table 3. Density, basal area and IVI of tree species (dbh ≥ 10 cm individuals) at the one hectare scale.

4.2 Training, workshop, public talk and study tour

In order to build capacity and to raise awareness for the REDD+ readiness stage, the trainings, workshops, public talks and study tour were conducted during the pilot project period. Two trainings were organized to improve the capacity building on REDD+ for the staff of Ministry of Environmental Conservation and Forestry (MOECAF) in January and March of 2012 (Figure 7).

Figure 7. REDD+ Trainings conducted during the pilot project.

Both trainings focused on carbon measuring/monitoring, reporting and verification (MRV) and forest inventory and REDD+. 20 persons from the FD participated in each training. Awareness raising activities such as public talks, distribution of pamphlets and information sheets were carried out in 8 villages located around the pilot project site. About 40 to 70 villagers were attended in each public talk (Figure 8).

Figure 8. Public talk at villages for increasing public awareness on REDD+.

Five persons from the Myanmar's REDD+ core unit visited to Vietnam to learn and share experiences on REDD+ readiness activities in July-August of 2012 (Figure 9). This study tour aimed to gain experiences and lessons learnt from REDD+ Readiness activities in Vietnam in order to support REDD+ readiness activities of Myanmar.

Figure 9. Myanmar's REDD+ core unit members visiting to Vietnam.

4.3 Estimating above ground biomass at the landscape level using the satellite image

To support the methodology development for MRV, above ground biomass (AGB) of the two reserved forests (10,268 ha) namely, Lone Yan and Sabyin Reserved Forests in Yedashe Township, was estimated using Landsat image (acquired in February 2009). Normalized different vegetation index (NDVI) was applied to obtain the sample plots representing the different biomass condition. Based on the NDVI, the area is categorized in to five areas with different vegetation density. Using ArcGIS, sample plots representing different vegetation density were extracted for ground truthing.

A total of 220 nested sample plots for trees ≥ 10 cm DBH (40 m x 40 m for trees with DBH ≥ 20 cm and 20 m x 20 m for trees with DBH between 10 cm and 19 cm) were selected, and field measurement was conducted in 2012 April, DBH were measured as the parameter for calculating AGB of sample plot. AGB of each sample plot was estimated from DBH using the Brown's equation (1987) for tropical forests. The AGB sample plots were divided in to training and validation data, for estimation and validation processes, respectively. Multiple linear regression was applied in ArcGIS to estimate the above ground biomass through the relationship between spectral reflectance of pixel (30 m x 30 m) of image and measured ABG of sample plot (40 m x 40 m). The summary of methodology for estimating AGB using Landsat image is presented in Box 2.

The results revealed that mean AGB of the two reserved forests was 140.89 tons/ha (Figure 10). The AGB of the two reserved forests is well within the range of ABG for tropical forests (34-500 tons/ha), but much lower than the average AGB of tropical forests (250 tons/ha) (Gibbs et al. 2007). The main reason of the low AGB in the study site might be correlated with the low tree density and size of the study area; 111 stems/ha and basal area is 12.9 m2/ ha for trees with DBH ≥ 10 cm, whereas the tree density recorded in tropical forests is 245-859 stems/ha for trees with ≥ 10 cm DBH (Parathasarathy and Karthikeyan 1997; Swamy et al. 2000).

Box 2. Summary of methodology for estimating aboveground biomass at the landscape level using Landsat image.

Data	● Landsat image (February 2009).
Field preparation/Image processing	● Calculating NDVI, and classifying forest in to five classes according to NDVI.
Field measurement	● 220 nested plots (40 m x 40 m for trees ≥ 20 cm DBH, 20 m x 20 m for trees ≥ 10 cm <20 cm DBH). ● Forest inventory for measuring above ground biomass in 2012. ● Used Brown's equation (1997) of biomass estimation for tropical forest. ● Sample plots were divided into training and validation.
Image classification (using training data)	● Applied multiple linear regression in ArcGIS to estimate above ground biomass through relationship between spectral reflectance of pixel (30 m x 30m) and above ground biomass of plot (40 m x 40 m).
Accuracy assessment (using validation data)	● Calculating overall accuracy and kappa statistics.

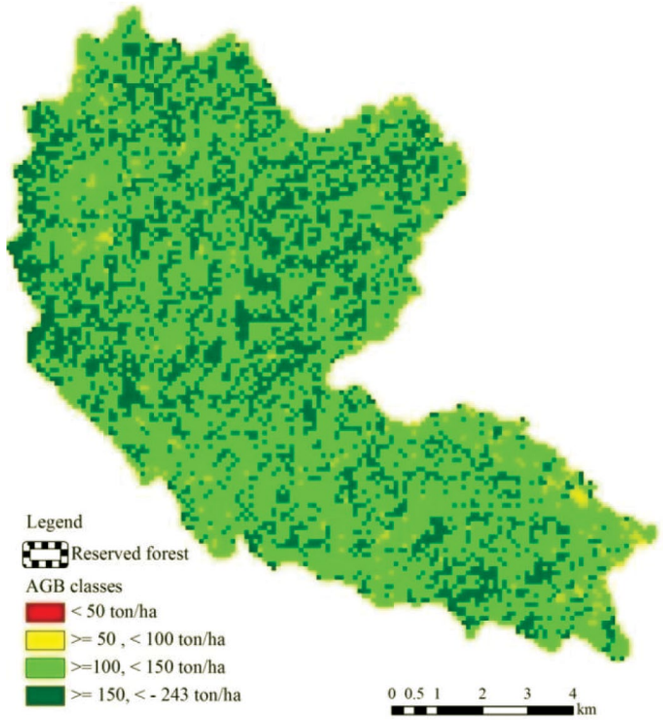

Figure 10. Estimated above ground biomass of the two reserved forests of Bago Yoma.

The overall accuracy and kappa statistics of the estimation are 60.18% and 0.42, respectively. This accuracy of less than 70% may have been due to some reasons such as the heterogeneity created by this mountainous landscape and diverse forest vegetation, and the different between the periods of image acquisition and ground thuthing in this very dynamic forest landscape associated with the logging; the mage was acquainted in February 2009, whereas the ground thuthing was conducted in

April 2012.

4.4 Supporting the community

Perennial fruit trees such as mango, jackfruit, guava, papaya, drumstick, lemon seedlings were distributed free of charge to the six villages nearby the project site (Figure 11). In addition, some furniture, table and chairs, stationeries, exercise books, pencils and rain coats were provided to the students of Village Primary School of the Zayepauk village which is located nearby project site.

4.5 Preparation of technical reports (deforestation analysis, Baseline carbon, benefit sharing, REDD+ concept)

During the pilot project, several technical papers were prepared to be applied in the REDD+ readiness stage. Such the technical papers cover REDD+ basic concept, driver of deforestation analysis, the application of RS/GIS in MRV, forest inventory for MRV, PES as a benefit distribution system among the stakeholder, and so on.

Figure 11. Community supporting activities during the pilot project.

5. Lessons learned from the REDD+ pilot project and recommendations for future deveopment

During the one-year project period, several outputs were achieved, and good fundamentals for implementing REDD+ readiness stage are appeared. On the other hand, the project team received several lessons and experiences that are crucial to strengthen the current preparation for REDD+ readiness stage. It is noted that some limitations are still existing, such as low capacity and awareness of REDD+ among the stakeholders, particularly the relevant ministries and local community. Based on the lessons and experiences received from the pilot project, the following recommendations are appeared, and that should be addressed urgently in upscaling the current preparation for REDD+ readiness stage:

- to raise the capacity and awareness of multi-stakeholder about the REDD+;
- to prepare the strategy to persuade the active participation of multi-stakeholder in the REDD+ initiation, particularly the private sector;
- to extend the REDD+ pilot initiation from the site level to landscape level;
- to develop the methodologies for MRV in line with the guidelines of UNFCC and IPCC;
- to strengthen the institute for REDD+ mechanism, and to designate the REDD+ focal person of the relevant line ministries;
- to support the REDD+ research activities by the Forest Research Institute of Forest Department; and
- to seek more investment on REDD+ initiation from the inside and outside.

6. Conclusion

The REDD+ pilot project achieved several outputs that are crucial for the implementation of REDD+ readiness stage of Myanmar though the project period was short and the number of project members was limited. Because of the successful implementation, KFS has extended its supporting for one more year. So, preparation for REDD+ readiness can be strengthened while the REDD+ roadmap would be formulated through the financial supporting from Norwegian Government and technical supporting from UN-REDD program. Now, Myanmar is strengthening its efforts for practising of REDD+ in the forestry sector by collaborating with international organizations such as ITTO, KFS etc. and with private companies such as Asia Air Survey (AAS) from Japan, Earthsky Ltd from British Vargin Island etc, for developing voluntary carbon standard (VCS) and developing participatory carbon measurement. Such the efforts will drive Myanmar to be abreast of other countries in the region in implementing REDD+ scheme.

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National Forest Inventory and Measuring, Reporting and Verification (MRV) for REDD+, Myanmar

1. General Introduction

The reducing emissions from deforestation and forest degradation and carbon stock enhancement (REDD+) is now recognizing as a critical component of national and international strategies for mitigating global climate change. That is of central importance in efforts to combat climate change especially in developing countries. All developing countries that are participating in the REDD+ will have to establish a national forest monitoring system (NFMS) in order to assess forestry related greenhouse gas emissions. The system should support the Measurement, Reporting and Verification (MRV) requirement according to the United Nations Framework Convention on Climate Change (UNFCCC). A national forest inventory (NFI) is one potential key component of such an MRV system (Maniatis and Mollicone 2010).

Regarding to the development of MRV system, this document intends to briefly explain about NFI and current situation of satellite monitoring system in Myanmar. Information related with REDD+ and MRV is also explained in this document as Myanmar is currently one of the countries participating in REDD+ programme and under the preparation phase of REDD+ readiness and general. Estimation of forest AGB is also required as an input for national forest Monitoring, and Reporting system required under the 1997 Kyoto Protocol. National-level forest biomass estimation is necessary and it might be an important attribute. Regarding to this point, an example of above ground biomass estimation over a large area using forest inventory data and satellite imagery is also expressed as basic information of biomass/carbon for MRV system.

2. Explanation on REDD+

According to the referred materials and documents, REDD+ encourages developing countries to contribute to climate-change mitigation in the forestry sector through five activities: reducing emissions from deforestation and forest degradation, conservation of forest carbon stock; sustainable management of forests; and the enhancement of forest carbon stocks.

At first, the role of forests in climate change mitigation has long been the subject of discussion and negotiation at the global level and REDD+ was officially introduced into the UNFCCC agenda at the end of 2005. The most relevant REDD+ milestones

especially realted with MRV are as follows:

- 13th conference of the parties (COP 13- Bali 2007) adopted the Bali Action Plan within which REDD+ was recognized as a potential element of an expected new agreement
- COP 15 (Copenhagen, 2009) adopted decision on methodological guidance for the implementation of REDD+, with particular reference to monitoring and reporting.
- COP 16 (Cancun, 2010) adopted a decision that defined REDD+ and agreed on a phased approach to it. Developed countries were urged to provide financial and technical support to assist developing countries to engage key stakeholders (including communities and indigenous peoples) to prepare national strategies, policies and measures to implement REDD+ and to develop national forest reference emission levels, national forest monitoring systems and a system for providing information on how REDD+ social and environmental safeguards are being addressed and respected.
- COP 17 (Durban, 2011) discussed technical methodologies and modalities for REDD+ related to forest reference emission levels, forest reference levels and monitoring, reporting and verification (MRV). It also continued the development of guidance on social and environmental safeguards. A decision was also adopted on financing for the full implementation of results-based REDD+ actions.

3. MRV for REDD+

As mention in the above, COP 15 (2009 Copenhagen) adopted decision on methodological guidance for the implementation of REDD+ and, requested developing country parties to establish robust and transparent national forest monitoring systems that:

(i) Use a combination of remote sensing and ground-based forest carbon inventory approaches for estimating forest-related greenhouse gas emissions, forest carbon stocks and forest area changes,

(ii) Provide estimates that are transparent, consistent, and accurate, and

(iii) Are transparent and their results are available and suitable for review as agreed by the COP.

The two functions under National forest monitoring systems are a monitoring function and an MRV function. Monitoring Function is to monitor progress of REDD+ activities and MRV function is to contribute to the measuring & reporting on REDD+ mitigation performance (emissions & removals in CO2-equivalents) to the

UNFCCC; which then undergoes verification. The three phased implementation of National Forest Monitoring Systems are preparation, demonstration and national implementation. The purpose of MRV for REDD+ are:

- To assess anthropogenic greenhouse gas emissions by sources and removals by sinks related to forest land
- To enable measurement of the carbon stock change outcomes of REDD+ activities, following the most recent methodological guidance of the Intergovernmental Panel on Climate Change (IPCC) for developing countries
- To enable the reporting of GHG mitigation performance (in CO2-equivalents) of REDD+ activities to the UNFCCC. It only has to be fully operational in Phase 3 of REDD+.

4. Current Practices of Monitoring System in Forestry, Myanmar

Two types of data; spatial data and non-spatial data (Tables of Data) are developed by forest inventory and remote sensing and GIS application in forestry sector of Myanmar. Such the data are critical to support information for sustainable forest management. Regarding to the database management and monitoring system in Myanmar, we would like to briefly explain about forest Inventory and using of RS and GIS.

4.1. Forest Inventory

Around 1985, Myanmar set up national forest survey and inventory by three main phases; the production of forest cover and land use maps of the whole country using satellite imageries, the production of detailed forest type and land use maps of the project area using aerial photography and the ground survey in the forests of the project area. The main objectives of ground survey are to establish permanent sample plots to monitor the condition of the forest and its growth by successive measurements, to determine the amount, location and quality of timber at pre-investment level, to assess the silvicultural condition of the forest, especially its regeneration and to classify the forest terrain according to its operability. The design, supervision and computation of the inventory was done under the support of UNDP/FAO National Forest Survey and Inventory Project BUR/79/011 at Forest Department, Myanmar. Detailed field inventory design and field instructions can be referred to the document; National Forest Survey and Inventory, Burma Field Instructions (FO: BUR/79/011). Unfortunately, NFI could not be finished for the whole country and the works were stopped after finishing this project around 1993.

Currently, district level forest inventory (one shot inventory) is conducting by Forest Department with the objectives: to develop stand and stock table

based on the inventory data, to calculate annual allowable cut and to know the changes of land use and forest status. The sample plots were square and its size change according to available time frame; for example (40 m x 40 m to 100 m x 100 m plots). The sample plots are step up depending on the forest cover that comes from the Satellite Remote Sensing results. Normally sample plots were systematically set up within the closed forest (> 40% canopy density) and open forest (10-40% canopy density). For district level inventory, distance is 2000 m between each plot. The center of the sample plots is recorded by GPS for position record. Field inventory crew record above 20 cm DBH trees, condition of regeneration and bamboo. Normally, field inventory is supervised by Inventory Section, Planning and Statistics Division. Before starting the field inventory, local forest staff are trained for measurement of forest attribute and using GPS.

After getting the inventory data, Planning and Statistics Division, Computer Section, that was established in 1985 under NFI project analyze the data to produce stand table, stock table, bamboo table and annual allowable cut. Although Forest Department is focusing on inventory works, forest inventory can be conducted only one or two districts per year according to limited budgets and human resources.

4.2. Activities of RS and GIS

Forest Department is one of the foremost organizations in using RS&GIS in Myanmar. RS & GIS section, Planning and Statistics Division was started since 1980 and Satellite Remote Sensing was introduced by FAO/UNEP Project. PC based Arc/Info GIS was established 1993 by National Forest Management and Inventory Project (MYA/85/003). The major activities of RS and GIS section are forest cover assessment by various scales and various satellite imageries, preparation of GIS database, preparation of various maps for management, biomass assessment, forest Fire assessment. There are also international cooperation for technical and training programme with international organizations, including JICA, FAO, ITTO, International Center for Integrated Mountain Development (ICIMOD), Korea Forest Services and Asia Air Survey Japan.

4.3. Biomass Estimation under REDD+ Pilot Project

4.3.1. Background Information

Forest biomass, in general, includes the above-ground and below-ground living mass, such as trees, shrubs, vines, roots, and the dead mass of fine and coarse litter associated with the soil. Due to the difficulty in collecting field data of below-ground biomass, most previous research on biomass estimation focused on above-ground biomass (AGB). Although Field-

collected data is generally considered to be the most accurate source for above-ground biomass estimates, it is time consuming. Remotely sensed data have become the primary source for biomass estimation and remote sensing techniques have become prevalent in estimating AGB (Lu 2006).

National-level forest biomass estimate is necessary under MRV system and it might be an important attribute. However, information related with AGB is still very limited and thematic maps of AGB are still lack in Myanmar. This example focused on estimation of AGB using Landsat ETM+ for two reserved forests located in Bago Yoma (Figure 1) as a preliminary study of AGB estimation with the support of Korea Forest Services under REDD+ initiative activities. The objectives of this example were to demonstrate how spatially explicit AGB estimation over a large area using forest inventory data and satellite imagery and to provide basic information of biomass/carbon for MRV system.

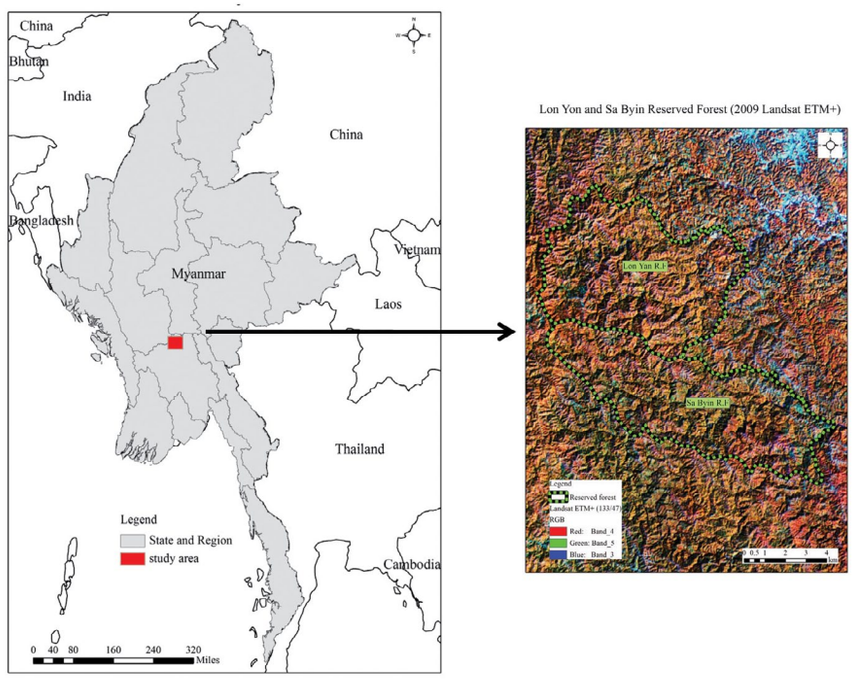


Figure 1. Location Map of Two Study Reserved Forests

4.3.2. Materials and Methods

Landsat 7 Enhanced Thematic Mapper plus (ETM+) imagery was selected for AGB estimation due to its suitability in terms of resolution and practical considerations associated with its use; the spatial resolution of 30 m x 30 m adequate to assess information at the forest stand level. Imagery (path/row: 133/47) was acquired on 23 January 2009. Ground data were collected during March 2012. We used 40 m × 40 m sample plot in order to cover the spatial resolution of satellite image. Total number of sample pots was 220. As the study area is the production forests, it could be assumed that the time difference between image acquisition date and survey time would not have somewhat impact on this study.

As the total area of two study reserved forests is around 10,200 hectares, complete enumeration was impossible during the available time frame. The sampling design used in this study was stratified random sampling design. We selected the representative samples based on the vegetation density that was calculated from NDVI. NDVI values range from -1 to +1 and we divided into five categories in the following table (Table 1) and Figure 2.

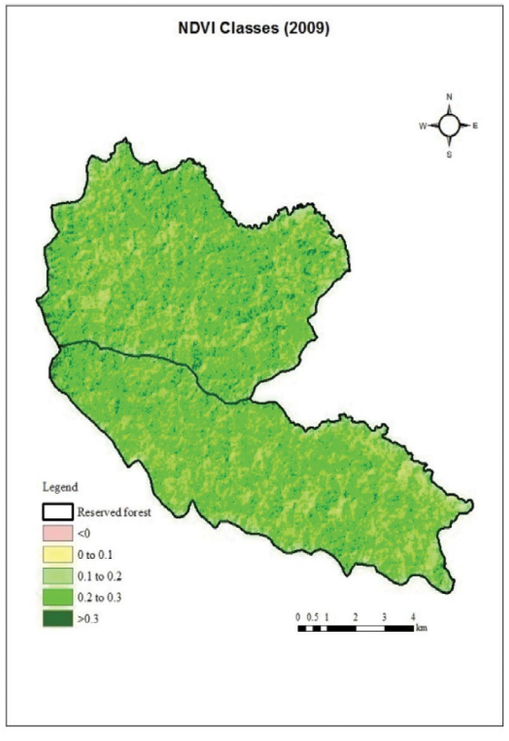


Figure 2. Vegetation Density of Two Reserved Forests based on NDVI

Table 1. Area of respective vegetation density classified based of NDVI

No.	NDVI class	Vegetative Density Categories	Area (ha)
1	<=0	Class 1	3.33
2	>0 to <=0.1	Class 2	178.74
3	>0.1 to <=0.2	Class 3	2,988.18
4	>0.2 to <=0.3	Class 4	6,542.46
5	>=0.3	Class 5	555.21
Total Area			**10,267.92**

We established a systematic 200 m grid-intersect sampling plots within the study area using Hawth's analysis tools for ArcGIS, producing a total of 2,600 sample plots. We extracted respective the vegetation density of each plots using the spatial analysis tool of Arcgis. Then we selected randomly total 220 plots from five vegetative densities as shown in the Table 2. Our sample plots size was 40m x 40m and total representative sampling percentage was 0.34%. The locations or coordinates of sample plots were recorded in GPS for field data collection (Figure 3).

No.	NDVI classes	Stratified Plots	Selected Plots
1	Class 1	37	20
2	Class 2	56	50
3	Class 3	755	50
4	Class 4	1,616	50
5	Class 5	136	50
	Total	**2600**	**220**

Table 2. Numbers of selected samples

Sample plot size was 40 m x 40 m and we subdivided into three subplots 20 m x 20 m, and 10 m x 10 m. We recorded >= 20 cm DBH trees inside 40 m x 40 m (plot A), >= 10 cm <20 cm DBH trees (saplings) inside 20 m x 20 m subplots B and >= 5 cm and <10 cm DBH trees (seedlings) inside 10 m x 10 m subplots C. The location of the sample plots was checked at the center by using GPS and their respective coordinate. The sample plot design was expressed in Figure 4.

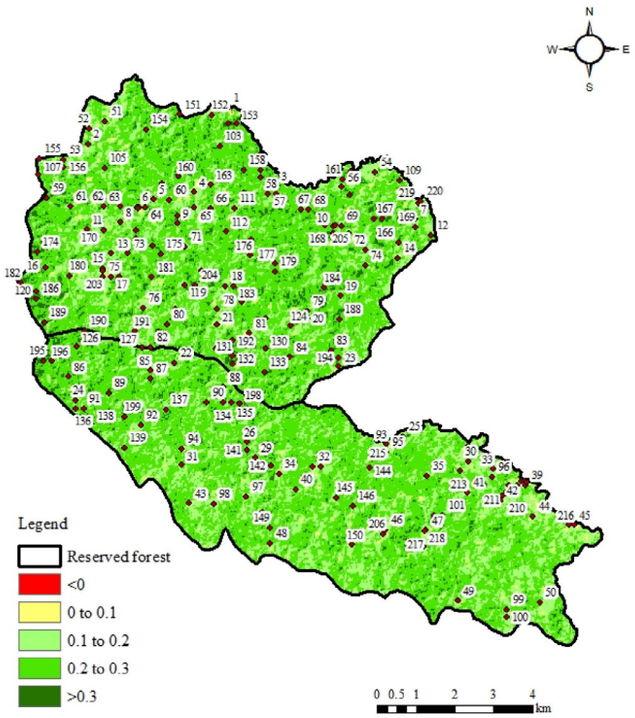


Figure 3. Location of 220 selected samples within two reserved forests

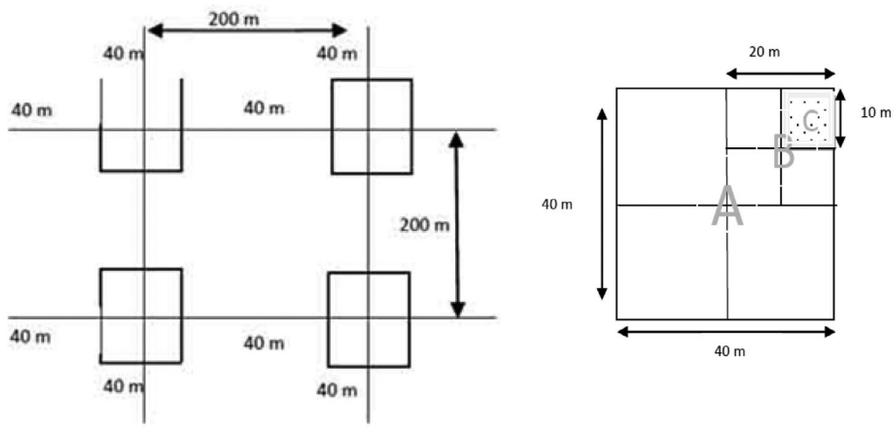


Figure 4. Sample plot design used in field survey

Field inventory for ground truth collection was conducted by Inventory section of Planning and Statistics division, Forest Department. The inventory crew recorded data with field sheets and followed the instructions developed under National forest Inventory, Myanmar. Unfortunately, the field plots did not contain enough information for non-forest classes and we subjectively set up the sample plots by visualization of images.

4.3.3. Data Analysis on estimation of AGB for field sample plots

We define forest biomass density as the total aboveground biomass (TAGB) of trees to a minimum diameter of 5 cm per unit area (16000 m2). Inventory data of each sample plots were first put into Microsoft excel and estimated biomass of each tree by using biomass regression equation and field- measured DGH (Brown et al., 1989). The biomass regression equation was developed for tropical trees ranging from 5 cm to 148 cm DBH that was valid for our study. The biomass regression equation used in this study was as follows;

$$Y = 42.69 - 12.80 (D) + 1.242 (D2)$$

Where, Y= biomass per tree in kg and D= DBH in cm. That equation was developed using 170 trees and adjusted r2 was 0.84. After generating tree level biomass, AGB of each sample plot was summed and converted into stand level total AGB (tons/plot and tons/ha).

Selection of training samples for Multiple linear regression was done by using PASW 18. There were divided into 112 training samples and 108 samples for accuracy check of the output thematic map. The Descriptive statistics of sample plots used for training and accuracy were expressed in Table 3.

Table 3. Descriptive statistics of sample data used for training and accuracy (biomass tons/ha)

Categories	Minimum (tons/ha)	Mean (tons/ha)	Maximum (tons/ha)	Standard Deviation
Training (112 plots)	0	136.66	423.79	9.35
Accuracy (108 plots)	0	142.51	510.87	11.85

4.3.4. Generation of regression model for RS biomass estimation

Multiple linear regression (MLR) is a general statistical technique used to analyze the relationship between a dependent variable and several independent variables or covariates (Hair et al. 2006). MLR has been used to estimate forest parameters such as forest age and forest canopy density

using spectral responses of remotely sensed data (Ripple 1994, Salvador and Pons 1998, Jakubauskas and Price 2000, Joshi et al. 2006, Mon et al.. 2012). In this study,biomass was estimated using the spectral reflectance of six Landsat ETM+ bands (bands 1–5, 7). The spectral reflectance values of the six Landsat ETM+ bands (bands 1–5, 7) were extracted for the 112 training samples. Statistical analysis was conducted in PASW 18. The linear relationship between the dependent and independent variables was examined by the scatter plots. The results did not show non-linear relationships between the dependent and independent variables. MLR was then run to estimate the regression model.

High collinearity between the independent variables poses a statistical problem and therefore first we examined collinearity between the independent variables by the variance inflation factor (VIF) and tolerance in the regression. High collinearity between independent variables occurs when tolerance < 0.20 or VIF > 4 (Allison, 2001 cited by Eeckhaut et al., 2006). We subsequently excluded four variables; i.e. spectral reflectance values of four landsat ETM+ bands (bands 1-3, 7) from the independent variables because of high correlation between them. Normality, linearity, homoscedasticity and independence of the error terms were examined to verify whether the regression model was applicable for estimation (Hair et al. 2006). Normality of the equation was checked using the histogram of residuals. Linearity of the overall equation was examined through the residual plots. Homoscedasticity was examined by plotting the studentized residuals against the predicted dependent values. Independence of the error terms was identified by plotting against sequencing variables. All the diagnoses exhibited the linear patterns and indicated that application of the regression model was acceptable. The equation offered by the MLR model for estimating biomass is mentioned below:

Y = 0.963+ .359B4 – 0.248 B5 (R2 = 0.64, F109 = 36.978, P ≤ 0.01),

where Y is the predicted biomass and the variables B4 and B5 are spectral reflectance values of ETM+ bands 4 and 5. The thematic biomass map was then generated in ArcGIS 9.3 using the above equation.

4.3.5. Results

Evaluation of the model performance and accuracy assessment of the estimated results are important aspects in the AGB estimation procedure. In order to make comparisons between the field plots and the remotely sensed outputs, the field plots had to be assigned into four categories of biomass classes; <50, >= 50 and <100, >= 100 and < 200 and >= 200 tons per ha. The reclassification process of thematic biomass was also conducted in the reclassify option under the spatial analyst tool of ArcGIS. Accuracies of output thematic maps was checked by four measures: producer's accuracy, user's accuracy, overall accuracy and kappa statistics based on error matrices (Thapa and Murayama 2009). Overall accuracy of 60.18% and Kappa Statistics of 0.42 was accepted for thematic map resulting from multiple regression analysis.

Table 4. Error matrix of biomass estimation by multiple regression analysis

		ground biomass (tons/ha)					UA
		I	II	III	IV	Total	
estimated	I	14	0	0	0	14	100.00
biomass	II	4	7	0	0	11	63.64
(ton/ha)	III	4	2	6	1	13	46.15
	IV	8	12	14	41	75	54.67
	Total	30	21	20	42	113	
	PA	46.67	33.33	30.00	97.62		

Notes: I=(<50 tons/ha), II=(>= 50 and <100 tons/ha), III= (>= 100 and < 200 tons/ha), IV= (>= 200 tons/ha), PA = Producer's accuracy (%) , and UA= User's accuracy (%)

Multiple Linear regression analysis was used to develop AGB estimation models based on the integration of vegetation inventory data and remote sensing variables as mention in the methodology. Figure 5 (a) shows the AGB estimation maps of two reserved forests by multiple regression analysis. The results showed that estimated AGB is a range of values from 48.88 ton/ha to 223.73 tons/ha for two reserved forests and the mean AGB is 140.89 tons/ha. There are totally about 1.3 million tons (1,385,162 tons) in two reserved forests according to the estimation results. Figure 5 (b) shows thematic ABG estimation map after classifying into four biomass categories generated by using the regression results. The areas of respective biomass category were shown in Table 5.

Table 5. Respective areas for four biomass categories

Biomass Categories	Area (ha)
less than 50 tons/ha	217.81
50 -100 tons/ha	1928.31
100-200 tons/ha	4874.73
> 200 tons/ha	3247.15
Total Area	**10268.00**

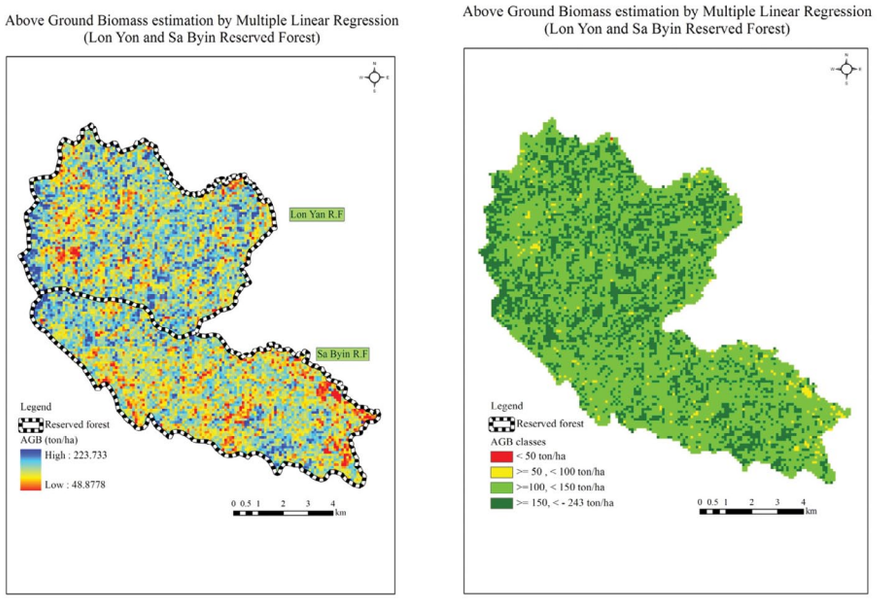


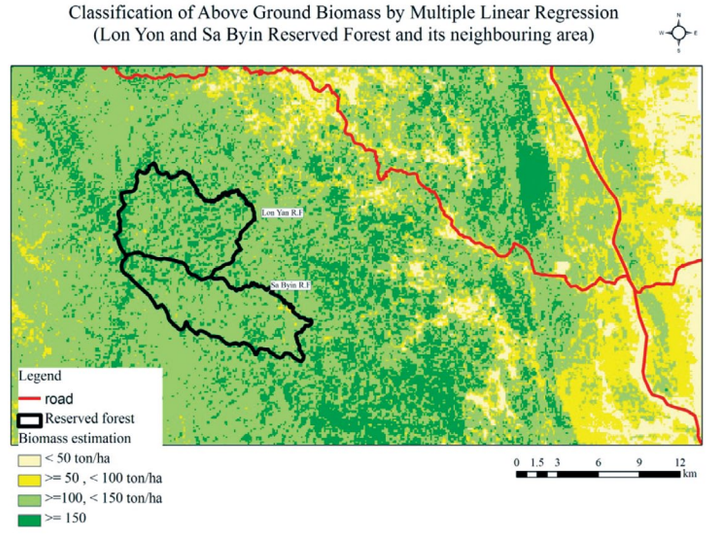
Figure 5. (a) AGB estimation maps of two reserved forests by multiple regression analysis and (b) ABG estimation map after classifying into four biomass categories.

4.3.6. Discussion

According to MLR results in AGB estimation using field inventory data and Landsat ETM, the representing area for category of 100-200 tons/ha was highest within the two reserved forests and that of > 200 tons/ha category was relatively low. Although the highest biomass (tons/ha) was more than 400 tons/ha in calculation of biomass based on field inventory data, multiple linear regression generated 223 tons/ha as highest biomass values. We should consider other methodology in future biomass calculation. In compare with

other biomass study of different forest types, biomass (tons/ha) of these two reserved forests is a range of values from 48.88 ton/ha to 223.73 tons/ha and that was somewhat similar to other studies; 126 tons/ha in tropical forests of Canada, ranged from 144 to 182 tons/ha in Brazilian rainforests (open), and from 149 to 266.5 tons/ha (Cummings et al., 2002).

Multiple regression analysis generated relatively high overall accuracy, kappa statistics, user and procedure accuracies for each category. More heterogeneous forest categories generate more complex patterns of spectral reflectance, leading to lower accuracies for 50 -100 ton/ha category and 100-200 tons/ha category in this study. Multiple regression analysis produced 100 % User's accuracy for almost non-forest categories, i.e. less than 50 tons per ha AGB. Multiple regression analysis therefore developed the different between forest and non-forest categories. Figure 6 shows AGB estimation for two study reserved forests and its neighboring area.



Although the spectral reflectance of the Landsat image only is not enough to get good results in estimating forest density in tropical mixed deciduous vegetation, it provides relatively good results in estimating AGB estimation in this study. But we still need to test other methods, such as using different methods and also different data sources.

The limitation in spatial, spectral, and radiometric resolutions inherent in the remotely sensed data is an important factor affecting the AGB estimation performance. For example, a Landsat TM image with 30–m spatial resolution often contains many mixed pixels, which may contain different tree species and vegetation ages in a single pixel.

Multi-resolution data has the potential to improve AGB estimation performance, the time and labour involved in image processing will be significantly increased. Again, the economic factor will be an important aspect in the use of multi-source remotely sensed data in a large area.

AGB is calculated using allometric equations based on measured DBH and/or height, or from the conversion of forest stocking volume (Brown et al. 1989). These methods may generate major uncertainty because of different purposes of field measurements, inconsistency of data collection dates, complex tree species composition, and different wood densities. Calibration or validation of the calculated AGB is necessary. A combination of spectral responses and image textures has proven useful in improving AGB estimation performance. The incorporation of remote sensing and GIS will also be useful in improving AGB estimation results when multi-source data are available.

Remote sensing techniques have many advantages in AGB estimation over traditional field measurement methods and provide the potential to estimate AGB at different scales. Therefore, future research may focus on the integration of multi-source data, which involves the effective integration of remote sensing (including optical and microwave data), GIS, and modeling techniques; a combination of multi-scale remotely sensed data, which involves the integration of field measurements with high (e.g. IKONOS), medium (e.g. Landsat TM/ETM+ and Terra ASTER), and coarse (e.g. MODIS and AVHRR) spatial-resolution data; and the development of a suitable procedure for AGB estimation. The following factors should be considered to improve the accuracy of biomass estimation;

- Ground data collection time and image acquisition date should be considered as one importance factor.
- This calculation depends only on the two dimensional approach (spectral reflectance of the images) and should be used three dimensional approach (using aerial photos and Lidar data) including tree height in order to increase the accuracy.
- Biomass estimation was conducted using the default equation developed from the other regions and it should be generated allometric equation for biomass equation.

5. Conclusion

Myanmar is now trying to establish its national REDD+ program and national forest monitoring system with the objectives and principles of the REDD+ mechanism. MRV is also one of the main components of the REDD+ program. This document presents as general information of REDD+ and review results of current monitoring system in order to contribute general information of REDD+ activities in Myanmar regarding to forestry related stakeholders. In order to strengthen NFMS, the following factors should be established;

- A reliable, accurate and cost-effective MRV system
- Integration of existing forest monitoring system and NFI
- Determination of reliable definitions
- Combine use of RS technologies with ground measurement
- Consistency of satellite data and the results
- Establishment of clear and practical methodologies (field measurement and remote sensing for MRV) and
- Forest resource atlas to contribute forestry related database to other stakeholders.

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The Republic of the Union of Myanmar
The Ministry of Environmental Conservation and Forestry
Forest Department

Community Forestry Development and REDD+ in Myanmar

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Community Forestry Development and REDD+ in Myanmar

1. Introduction

Forests are one of the most valuable eco-systems in the world, containing over 60 per cent of the world's biodiversity. This biodiversity has multiple social and economic values, apart from its intrinsic value, varying from the important ecological functions of forests in terms of soil and watershed protection to the economic value of the numerous products which can be extracted from the forest. For many indigenous and other forest-dependent peoples, forests are their livelihood. They provide them with edible and medicinal plants, bushmeat, fruits, honey, shelter, firewood and many other goods, as well as with cultural and spiritual values. On a global scale, all forests play a crucial role in climate regulation and constitute one of the major carbon sinks on earth, their survival thus preventing an increase in the greenhouse effect.

The role of forests in climate change mitigation is garnering increasing attention. Some 12 % to 20% of global greenhouse gas emissions are associated with deforestation and forest degradation. REDD+ has been formally incorporated into the United Nations Framework Convention on Climate Change (UNFCCC) process. International initiatives, such as the Forest Carbon Partnership Facility (FCPF) and the UN- REDD program, are actively supporting the implementation of REDD+ at the national level. Designing a successful REDD+ strategy is a complex undertaking. REDD+ deals with the intricacies of changing human behavior toward forests and land in general. Most forests in developing countries are home to human societies, many of which are indigenous and traditional populations. Most of these communities face higher poverty rates. Community Forestry, in which the communities are actively participated, can play a key role in poverty reduction and reducing carbon emission from deforestation and forest degradation (REDD). This report is about the REDD+ and community forestry development in Myanmar.

2. Objectives

The major objectives of this report were;

a) to assess the current status of community forestry and REDD+ in Myanmar and

b) to recommend the appropriate measures for community forestry development in REDD+

3. Deforestation and forest degradation in Myanmar

Although systematic Myanmar Selection System has been used for management

of the natural forests, Myanmar is facing deforestation and forest degradation like other countries. The Forest Resource Assessment (FRA 2010) conducted by the Food and Agriculture Organization of the United Nations (FAO) in cooperation with the Myanmar Forest Department has indicated that forest covered area was reduced from 52% to 47% of the country's land total area of 676,577 km2. But forest cover of Myanmar is still one of the highest in the Asia-Pacific Region.

The forestry sector contributed about 30% of the country's total export earning in 1990s. The harvesting of teak (Tectona grandis) from natural forests has been natural source of export earnings in Myanmar for many decades. For sustainable forest management, it is important to be a balance between conservation and exploitation.

4. REDD+ activities in Myanmar

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

Myanmar is aware of REDD+ as a mechanism to create an incentive for developing countries to protect, better manage and wisely use their forest resources, contributing to the global fight against climate change.

With active participation of the NGOs, line departments and UN agencies, two national level workshops (REDD+ national level workshop in April 2010 and climate change adaptation and disaster risk reduction national level workshop in December 2010) were already organized and a number of at least 50 participated the workshops. The participants were from Ministry of Agriculture and Irrigation, Department of Meteorology and hydrology, Ministry of Transport, Ministry of National Planning and Economic Development, Ministry of Livestock and Fisheries, Ministry of Social Welfare, Ministry of Health, Ministry of Science and Technology and Ministry of Environmental Conservation and Forestry, FAO, UN-Habitat and UNDP, and INGOs, FREDA, BANCA, REAM, Spectrum, World Vision, Food Security Working Group.

In addition, Forest Department and Korea Forest Service (KFS) jointly organized a "Regional level workshops on REDD+" in May 2011 in Nay Pyi Taw. About 80 participants from ASEAN Member States, UN-REDD Programme, representatives from line Ministries, local NGOs and civil societies were attended.

FD facilitates and formed REDD Task Force after REDD+ national level workshop. The current REDD+ Taskforce has an interim mandate to support for development of the Myanmar REDD+ Roadmap and national strategies. However, it is proposed

to enlarge the future working arrangements, involving key technical representatives from Forest Department (FD), Dry Zone Greening Department (DZGD) and Myanmar Timber Enterprise (MTE), Department of Environmental Conservation, Ministry of Environmental Conservation and Forestry (MOECAF) and Ministry of Agriculture and Irrigation (MOAI) and Department of Metrology and Hydrology (DMH) for effective implementation of REDD+ readiness.

5. Role of community forestry in REDD+

Community forestry can be an efficient and effective strategic option to address some of the main causes of deforestation and degradation, contributing to the reduction of carbon emission and to promote important social and environmental co-benefits. The decentralization of forest management to local communities, the clarification of land and forest use rights and ownership, long-term support to promote capacity of community-level organizations, the clarification of benefit-sharing mechanisms at the local level and support in adding value to forest products and services (wood, non-timber forest products, carbon storage, biodiversity, etc.) are all key elements of a successful strategy to promote community forestry and ensure it supports REDD+ goals. The promotion of community forestry in public areas facing deforestation pressure from new developments (infrastructure developments, commercial agriculture expansion, etc.) can be a key strategy to manage future deforestation.

6. Factors affecting on sustainability of community forestry

In order for community forestry to contribute in a significant way to improving living conditions and sustainable forest management, the following conditions must be met.

i. An enabling regulatory and legal framework must be in place,
ii. Community capacity must be strengthened in the long term
iii. Fair and efficient benefit sharing systems must be implemented at the local level, supported by functioning institutions
iv. Clear rules must be defined and management tools that can be implemented by communities must be available
v. Local added value (transformation and processing of local products) and improved access to existing markets, but also access to new markets for forest products and services must be enhanced.

7. Community Forestry Programme in Myanmar

In 1995, the Director General of Forest Department issued "Community Forestry Instructions (CFIs)" for the purpose of supporting economic development of the country, regaining environmental stability and consideration of the basic needs of local communities. According to the CFIs, the community forestry programs was launched in Myanmar in 1995. The main objective is to plant trees on barren lands and to reforest degraded areas with the active participation of the people in order to contribute to national economy, to regain environmental stability and to assist in satisfying the basic needs for the local communities. CFI stipulates areas where Community Forest (CF) could be established and areas where CF will be permitted.

It is part of the government policy of transferring national forests to community management. CFI offers local people (rural people) to be able to participate in forest management activities such as establishment of forest plantations and in some areas conservation of natural forests especially in watershed areas. Non-government organizations (NGOs) such as Forest Resource Environment Development and Conservation Association (FREDA) are also cooperating in the initiative. The community forestry programs are mainly implemented in the Central Dry Zone and Ayeyarwady delta regions, the areas suffering from the greatest deterioration of environmental and socio-economic conditions due to the effect of serious deforestation.

According the CFIs (1995), Community Forestry is defined as "Forestry operations in which the local community itself is involved; such as:

- Establishment of woodlots where there is insufficient fuel-wood and other products for community use
- Planting of trees and exploiting of forest products to obtain food supplies, consumer products and incomes at farmers' level.

6.1 Characteristics of community forestry in Myanmar

The salient points of CFIs (1995) are:

- Any land at the disposal of the State, including reserved forests and village supply plantations, can be alienated as community forests;
- Land tenure is initially granted for 30 years, but can be extended;
- The tenure right is inheritable;
- Forest products harvested from CF for domestic use are tax-free;
- No restriction is imposed on the selling and pricing of the surplus forest products;

- Seeds and seedlings needed for the first rotation and technical assistant are provided by Forest Department free of charge;
- Forest Department's approval to establish CF can be easily and quickly obtained; and
- The duties and responsibilities of the user's group are reasonable.

6.2 Area of community forests in states and divisions

In line with the CFI, the Forest Department has established community forests in all the States and Divisions of the country because community forestry is recognized as the major strategy by which forests can be managed and utilized sustainably. In addition, it also aims at improving living conditions of the local people by supporting Forest User Groups (FUGs) to manage community forest more effectively, sustainably and equitably. Up to June (2011), 108364 acres (43,872 ha) of community forests have already been established across the country (Forest Department, 2011).

Table 1. Current status of community forestry in Myanmar (by June 2011)

No.	States/Regions	Area (ha)	No. of FUGs	No. of members
1	Kachin	3,496.8	7	824
2	Kayah	40.5	1	70
3	Kayin	446.6	4	278
4	Chin	1,389.7	17	243
5	Taninthayi	1,725.4	33	1,434
6	Sagaing	180.2	5	118
7	Bago (East)	115.4	3	116
8	Bago (West)	120.4	3	134
9	Magwe	4,094.8	99	2,206
10	Mandalay	4,258.0	38	18,188
11	Mon	66.8	4	59
12	Rakhine	1,665.6	85	3447
13	Yangon	309.7	6	210
14	Shan (South)	2,0621.9	192	10,239
15	Shan (North)	559.5	15	178
16	Shan (East)	2,268.3	14	652
17	Ayeyarwady	2,512.5	49	2,228
	Total	**43,872.0**	**575**	**40,624**

Source: Planning and Statistics Division, FD, 2011

The community forests have been established in Reserved Forests, Protected Public Forests and Public Forests. Among the States/ Regions, Shan, Magway, Rakhine, Mandalay, and Ayeyarwady have achieved most. Shan State had been most active with 23,449.7 ha of CF while Kayah State was the most inactive with only 40.5 ha. Mon State also was very inactive having accomplished 66.8 ha only in the last 15 years.

6.3 Annual forest area handover to community

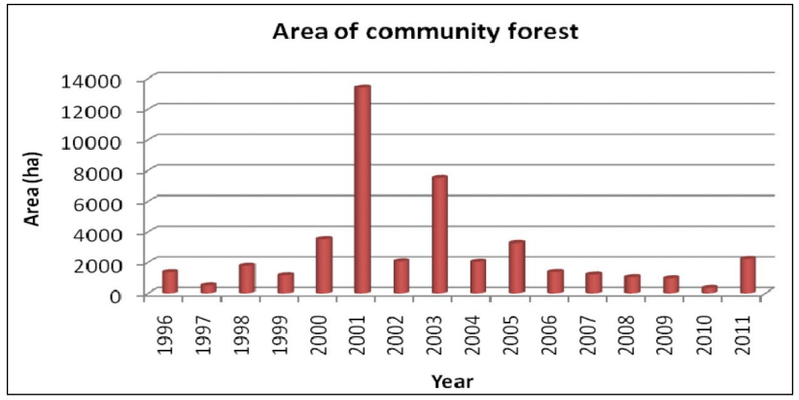

Figure 1. Forest area handover to community from 1996 to 2011

After 15 years of community forestry implementation, 572 forest user groups have been awarded community forestry certificates, covering 104,148 acres (42,148 ha) and involving 40,062 forest users. Community forestry formation peaked in 2001, followed by 2003, but has been declining since then. The peak hand-over level of forest area in 2001 was due to the high inputs from the Human Development Initiative (HDI) project of the United Nations Development Programme (UNDP) in the Dry Zone, Southern Shan State and the Ayeyawady Region.

8. International collaboration of Forest Department for community forestry development

Starting from Fourth ASEAN social forestry network (ASFN) Conference highlighting "Social Forestry in contributing to food security and in addressing Climate Change" held in Indonesia in 2010, Myanmar has participated in regional activities of Social Forestry Network. The first "National Inception Workshop on Developing and Implementing Social Forestry in Myanmar in the Context of Climate Change" could be held in collaboration between Forest Department and ASFN at Forest Research

Institute, Nay Pyi Taw in September 2011. Then from a consecutive meeting to the workshop at the FD, the following future programmes have been laid down for the development of Social Forestry in Myanmar:

1. To assess feasibility on capacity building.
2. To conduct a training/workshop to enhance capacity building in collaboration with Regional Community Forestry Training Center for Asia and Pacific (RECOFTC)
3. To develop Action Research Programme on Community Forestry in Myanmar.

According to the future programmes, the following workshops, meetings and trainings were conducted in collaboration with Regional Community Forestry Training Center for Asia and Pacific (RECOFTC)

1	Training Workshop on Developing Community Forestry in Myanmar	14 – 18 May, 2012	Min-Taing–Pin Forest Camp Nyaung Shwe Townships
2	National Community Forestry Round Table Meeting	13-14 August, 2012	Forest Research Institute
3	Preparation of Formulation Meeting for CF Action Research	15- 18 September, 2012	Nyaung Oo TS, Mandalay Division
4	Participatory Training Design and Techniques	8 – 11 October, 2012	CFDTC

9. Main challenges for the community forestry development

- Inadequate assistance for livelihood improvement
- Lack of mutual trust between community and implementation agencies
- Poor capacity for community forestry
- Protection of plantations established
- Lack of private investment
- CF is placed outside the mainstream of forest management
- Poverty
- No specific division for community forestry in Forest Department
- Localized, no clear marketing strategy

10. Way Forward to future community forestry development for REDD+ in Myanmar

- Awareness of community forestry and REDD+ for all government staffs should be raised.
- Policies (eg. Land use) should be reviewed and revised
- Core unit/ Division for Community Forestry with permanent staffs should be formed.
- REDD+ must be implemented with Free, Prior, and informed consent (FPIC) among CFs
- Trust between communities and Forest Department should be built.
- Capacity building for Government staffs and Community should be promoted.
- Cooperation among Societies should be strengthened.
- The international cooperation should be promoted.

11. Conclusion

Forest-based communities must be placed at the center of the design and implementation processes. Forest-based communities are key players and their rights, views and values need to be incorporated into all stages of REDD+ processes. Participation should involve multi-stakeholder processes so that different views and perspectives can be incorporated. Indigenous and local populations must be included in all phases of forest management, including the definition of use rights and the design and implementation of management plans. REDD+ initiatives should support community forestry, including initiatives designed for forests to be worth more standing than cut to forest dwellers. Community forestry should aim at increasing the economic, social and environmental values of forest-based communities.

Community forestry can play a key role in achieving REDD+ goals. Effective implementation of community forestry faces major challenges such as (i) ensuring long-term financial support to communities, (ii) low level of social and human capacity across many forest communities (iii) ensuring fair benefit sharing at the local level. The social and environmental results of community forest management are often realized only in the long term. REDD+ is a long- term financial flow for reinforcement of community forest management. REDD+ can foster decentralization of forest management rights and responsibilities, and various tropical countries have demonstrated that the effective decentralization of forest management rights and responsibilities, when combined with long-term support of local communities, can prove effective at inducing better management of forest resources.

Concept Note for Stakeholder Engagement in REDD+ in Myanmar

1. Climate Change in Forestry Sector

About 17% of global climate change is attributed to deforestation and forest degradation. Emissions from the forestry sector occurs as carbon stocks are depleted and released into the atmosphere when forests and other woody biomass stock, and grass lands, are converted or land management ceases, and forest fire. However, there have been no clear perceptions on the negative effects of deforestation and forest degradation among public.

2. Contemporary Sustainable Forest Management

Sustainable forest management should accommodate community aspirations and participation, customary, cultural, and social values. It should be managed, utilized, and maintained for people's maximum welfare in a good, fair, wise, transparent, professional and accountable manner.

Also, forestry administration "shall be based on benefits and sustainability, democracy, equity, togetherness, transparency and integration" and "shall be oriented for people's maximum welfare based on equity and sustainability principle" (The World Bank 2006). Thus, the government should aims to make the forestry sector useful for the economy, environmental quality and people's welfare.

3. Stakeholders engagement in REDD+

REDD+ provides a new framework to allow deforesting countries to break this historical trend of deforestation and forest degradation. It requires commitment and change of behaviors from various actors who deal with forests directly and indirectly as well as creating the demand for REDD+ credit. REDD+ policy needs support and resources if it is to be successfully implemented. It has been also believed that local community rights to carbon need to be clarified before the REDD+ policy can work. In addition, the interests of long-term future stakeholders, such as local communities, need to be well represented for REDD+ to be sustained. Therefore, the complexity of REDD+ requires the involvement of many institutions such as MOECAF, Ministry of Agriculture and Irrigation, Ministry of Live stocks and Fisheries, business companies and NGOs. This complexity implies administrative commitment to manage and make REDD+ work.

3.1. Forests and Stakeholders

Forest areas are not empty: local people have been dynamically living in and around forests for decades or even hundreds of years; forest concessionaires have been allocated rights to harvest timber; plantation companies have the legal right to convert a part of forests to agricultural land; mining companies are interested in making a profit from coal deposits; politicians need to satisfy those who elect them; and high-level government officials in power are struggling to sustain their power. Assuming that the state has 100% control over forests is neither correct nor useful.

The stakeholders in REDD+ are well connected to deforestation agents. They provided a framework for understanding deforestation and described agents of deforestation as consisting of individuals, households or companies. They could be small farmers, ranchers, loggers and plantation companies. Furthermore those agents can be slash and burn farmers, agribusiness, cattle ranchers, miners, oil corporations' loggers and non-timber enterprises. In reality, each actor behaves according to their real goal and on limited information and capacity. To complicate the situation even further, actors interact with other actors, influencing and relying on each other.

Actors do not generally behave aimlessly. They are logically consistent and bound to their own view of the world. They are guided not only by the idea of maximizing their income but also by other values. Actors prefer policies that are secure and increase returns on their assets. They tend to aggregate into groups to be able to influence policy within existing institutions (lobbies, parties and government) or against existing institutions. Thus, it is needed to discover how organized interests work to achieve goals, what government policies are adopted and how and when actors decide to reject, reform, or build political institutions.

3.2. Stakeholders analysis

Stakeholders can be categorized based on the groups' interests in the various issues pertaining to REDD+ such as available resources, resource mobilization capacity and position in the issue. The stakeholder analysis can yield useful and accurate information about people and organizations that have interests in REDD+. This information is used to provide input for institutional and political mapping, and later to develop action plans and to guide a participatory, consensus-building process.

Schmeer (1999) proposed eight steps for stakeholder analysis i.e. (a) planning the process; (b) selecting and defining policy; (c) identifying key stakeholders; (d) adapting the tools; (e) collecting and recording the information; (f) filling

in the stakeholder table; (g) analyzing the stakeholder table; and (h) using the information. The main criteria for identifying the key stakeholders were: proximity to forest, legal rights, knowledge of REDD+, power, leadership, position, traditional rights and cultural.

Knowledge in this context is defined as the level of accurate knowledge the stakeholder has regarding the REDD+ policy. Power is defined as the combined measure of the amount of resources a stakeholder has and their capacity to mobilize those resources, while leadership is defined as willingness to initiate, convoke or lead an action. Position refers to the stakeholder's status as a supporter or opponent of REDD+ policy. Most stakeholders either support or are neutral on REDD+ initiatives, plans and actions.

NGOs support REDD+, but are concerned that local community rights not be overlooked.

For stakeholder engagement, firstly, it is important to create an environment where the policy is easier to implement and improve stakeholder knowledge, support and the political environment. As a second point, communications and campaigns are of utmost importance if local actors' mind-sets, are to be change. The third one is to make the benefits of REDD+ visible and immediate. A lot of REDD+ discussions at national and global levels are now focusing on carbon accounting and governance. While these discussions are very important, local actors require something more tangible both in time and space. Without the latter it will be difficult to attract local actors to any form of REDD+. Clearly identified buyers can help to provide something more tangible.

Stakeholders' level of Knowledge on REDD+ can be classified into 3 groups namely; High, Medium and Low. Also stakeholders' position on REDD+ can be classified into 3 groups such as Support, Neutral and Opposition. After understanding level of knowledge and position of stakeholders, power and leadership are analyzed by using matrix. By doing so, a whole picture of various stakeholders involving in REDD+ can be seen very clearly.

4. Stakeholder Engagement (Brazil Case Study)

We need a simpler REDD+ mechanism, for example the Brazil model, which is based on grants to reduce carbon emissions, and avoid the market mechanism. Starting from conservation areas will have a lower impact on local livelihoods, which should make it easier to implement REDD+. Although this will not reduce carbon emissions dramatically it will increase support for REDD+. To strengthen REDD+ policy support we also need to disseminate REDD+ knowledge to those who have power but low leadership i.e. general public entities, business entities, Provincial Transmigration

Unit, Provincial Plantation Unit, political entities and the Provincial Forestry Unit. Once these leaders are knowledgeable about REDD+, implementation will be easier. It is also necessary to provide livelihood alternatives for those who have low power and low leadership, particularly local farmers and communities. It is important to ensure that they are not worse off with REDD+. If they are better off with REDD+, they are more likely to support or even provide leadership for REDD+.

5. Components of Stakeholder Engagement

Generally, Stakeholder engagement cannot be accomplished without implementing its associated components such as Free, Prior and Informed Consent (FPIC), Benefit Distribution System (BDS), Safeguards, Grievance mechanism, carbon rights and so on. FRIC basically derives from UNDRIP to protect rights of indigenous people living in and around the forests. BDS is a kind of reward for participation in SFM. Generally, BDS can be relied on two kinds of income sources namely; Payment for Environmental Services and Carbon Credit.

6. Conclusion

REDD+ policy right now in Myanmar faces significant challenges to success. This situation will be worse off as the actors who have high leadership are not in power. For a policy to work, we have to change the direction of the current situation where the policy is easier to implement and able to improve stakeholder knowledge, support and the political environment. The complicating factors of REDD+ policy need to be simplified by, among others, giving better space for local initiatives, showing real benefits to actors, reducing complexity by developing a super-body. Empowering those who have low power but high leadership is as important as the effort of influencing those who have low leadership but high power.

Reference;

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opfawjy/efwD;ifESifhopfawmtwef;tpm;uqifjcif;rSmAwf&krf;TfrlavQmhcif (REDD+) qkd&mvkyfief;t&iftjrpf zGHUjzdK;a&;ufp&m;ue0Dvkyfief;q@E;yG ydwfyGJcrf;tem;wGifopfawm0DpDDXme?a&a0a&va'o tkyfcsKyfa&;Xme? neD;u;a&;rS;0DaD;ufum;onftydwfeSG

၂၆–၁၂–၂၀၁၂ ရက်နေ့၊ အင်းကြင်းခန်းမ၊ သစ်တောဦးစီးဌာန

ကြွရောက်လာကြသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာဝန်ကြီးဌာနမှ ဌာနဆိုင်ရာ အကြီးအကဲများ၊ ဆက်စပ်ဝန်ကြီးဌာနများမှ ကိုယ်စားလှယ်များ ITTO မှ Project Manager, Dr. Hwan Ok Ma, Seoul National University မှ Dr. Young Yeo-Chang ၊ အစိုးရမဟုတ်သော အဖွဲ့အစည်းမှ ပုဂ္ဂိုလ်များနှင့် ဖိတ်ကြားထားသော ဧည့်သည်များအားလုံး မင်္ဂလာပါလို့ ပဏာမနှုတ်ခွန်း ဆက်သလိုက်ပါတယ်။

ယနေ့ကျင်းပခဲ့တဲ့ REDD+ ဆိုင်ရာ လူ့စွမ်းအားအရင်းအမြစ် ဖွံ့ဖြိုးရေး စီမံကိန်းရဲ့ ကနဦးအလုပ်ရုံ ဆွေးနွေးပွဲကို ပြီးမြောက်သည်အထိ စုံစုံညီညီတက်ရောက်ခဲ့ပြီး စိတ်အားထက်သန်စွာဖြင့် ဝိုင်းဝန်းဆွေးနွေး အကြံပြုပေးကြတဲ့အတွက် အားလုံးကို အထူးကျေးဇူးတင်ကြောင်း ပြောကြားလိုပါတယ်။ ဒီစီမံကိန်းဟာ သစ်တောဦးစီးဌာနနဲ့ ITTO တို့ ပူးပေါင်းဆောင်ရွက်လျက်ရှိတဲ့ "REDD-Plus" စီမံကိန်းဖြစ်တယ်ဆိုတာ အားလုံးသိပြီးဖြစ်ပါတယ်။ စီမံကိန်းလုပ်ငန်းတွေကို ထိရောက်အောင်မြင်စွာနဲ့ အကောင်အထည်ဖော် ဆောင်ရွက်နိုင်ဖို့အတွက် ယခုလို ကနဦးအလုပ်ရုံဆွေးနွေးပွဲကို ကျင်းပရခြင်း ဖြစ်ပါတယ်။

{nfbnfawmfrsm;

ယနေ့ကာလမှာ ဖွံ့ဖြိုးရေးဆိုင်ရာလုပ်ငန်းများ ကျယ်ပြန့်လာမှု၊ လူဦးရေတိုးပွားလာမှုတို့နဲ့အတူ သစ်တောပြုန်းတီးခြင်း၊ မြေဆီလွှာအဆင့်အတန်း လျော့ကျခြင်း၊ ရေတိမ်ဒေသများနဲ့ ဇီဝမျိုးစုံမျိုးကွဲများ လျော့နည်းလာခြင်းနဲ့ ရာသီဥတုပြောင်းလဲမှုတို့ဟာ အဓိကပတ်ဝန်းကျင်ဆိုင်ရာ ပြဿနာများ ဖြစ်လာပါ တယ်။

မြန်မာနိုင်ငံမှာလည်း အကြောင်းအမျိုးမျိုးကြောင့် သစ်တောပြုန်းတီးမှု၊ သစ်တောအတန်းအစား ကျဆင်းမှုတို့ကို ရင်ဆိုင်ရလျက်ရှိပါတယ်။ ဒါကြောင့် သစ်တောပြုန်းတီးမှု၊ သစ်တောအတန်အစား ကျဆင်းမှုတို့ကို လျော့ပါးသွားဖို့၊ ရပ်ဆိုင်းသွားဖို့ ဘက်စုံ၊ ကဏ္ဍစုံကနေ အထူးကြိုးပမ်းဆောင်ရွက်သွားဖို့ လိုအပ်ပါတယ်။ သစ်တောသယံဇာတများကို စီမံအုပ်ချုပ်ရာမှာ သစ်တောများနဲ့ အပင်များအပြင် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးနှင့် လူမှုစီးပွားရေး ကဏ္ဍများကိုထည့်သွင်း ဖော်ဆောင်ကြရမှာဖြစ်ပါ တယ်။

ယနေ့ ကမ္ဘာတစ်ဝန်းမှာလည်း ရာသီဥတုပြောင်းလဲမှု လျော့ပါးသက်သာစေရေးအတွက် ကာဗွန်ဒိုင် အောက်ဆိုဒ်ဓာတ်ငွေ့ ထုတ်လွှတ်မှု လျှော့ချနိုင်ရေးကို သစ်တောကဏ္ဍ အပါအဝင် လုပ်ငန်းနယ်ပယ်အသီး သီးမှာ ကြိုးပမ်းဆောင်ရွက်လျက် ရှိပါတယ်။ မြန်မာနိုင်ငံမှာလည်း ပတ်ဝန်းကျင်ဂေဟစနစ် တည်ငြိမ်စေ

ရေးဆောင်ရွက်ရာမှာ ကျေးလက်ဒေသနေ ပြည်သူများ အလုပ်အကိုင်အခွင့်အလမ်းနှင့် ဝင်ငွေတိုးပွားရေး၊ ဆင်းရဲနွမ်းပါးမှုလျော့ချရေး၊ နိုင်ငံတော်စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးတိုးတက်ရေးဆိုတဲ့ ရည်မှန်းချက်များပါ ချမှတ်ပြီး ကျယ်ကျယ်ပြန့်ပြန့် ဆောင်ရွက်ကြရမှာ ဖြစ်ပါတယ်။

ဒီနေရာမှာ ကြံ့ကြိုက်လို့ပြောရရင် REDD-plus လုပ်ငန်းတွေကို အကောင်အထည်ဖော်ဖို့ ကျွန်တော်တို့မှာ အခြေခံကောင်းတွေ ရှိပြီးဖြစ်ပါတယ်။ သစ်တောပြုန်းတီးမှုနှုန်း သစ်တောအတန်းအစား ကျဆင်းခြင်းကို လျော့ချခြင်း (ကာကွယ်တားဆီးခြင်း)၊ သစ်တောများ ထိန်းသိမ်းခြင်း၊ စဉ်ဆက်မပြတ် စီမံအုပ်ချုပ်ခြင်းနဲ့ သစ်တောစိုက်ခင်း တည်ထောင်ခြင်း လုပ်ငန်းများဟာ အသစ်အဆန်း မဟုတ်ဘဲ သစ်တောဦးစီးဌာနက နှစ်ပေါင်းများစွာ ဆောင်ရွက်ခဲ့တဲ့ လုပ်ငန်းတွေဖြစ်ပါတယ်။

ကျွန်တော်တို့မှာ မြန်မာ့သစ်တောမူဝါဒ၊ သစ်တောဥပဒေနဲ့ နည်းဥပဒေ၊ တောရိုင်းတိရစ္ဆာန်နှင့် သဘာဝအပင်များ ကာကွယ်ရေးနှင့် သဘာဝနယ်မြေများ ထိန်းသိမ်းရေးဥပဒေနှင့် နည်းဥပဒေ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေစတဲ့ ဥပဒေတွေကို ပြဋ္ဌာန်းထားပြီးဖြစ်တဲ့အတွက် ဥပဒေရေးရာ အခြေခံကောင်းတွေရှိပြီး ဖြစ်ပါတယ်။

သစ်တောစီမံအုပ်ချုပ်မှု နည်းစနစ်အပိုင်းမှာလည်း Myanmar Selection System လို့ခေါ်တဲ့ မြန်မာ့ရွေးချယ် ခုတ်လဲနည်းစနစ်ကို နှစ်ပေါင်းများစွာကတည်းက ကျင့်သုံးလာတာ ဖြစ်တဲ့အတွက် စဉ်ဆက်မပြတ် သစ်တောစီမံအုပ်ချုပ် လုပ်ကိုင်ခြင်း လုပ်ငန်းစဉ်များဟာ ကျွန်တော်တို့နဲ့ ရင်းနှီးကျွမ်းဝင်ပြီးဖြစ်ပါတယ်။ သစ်တောစိုက်ခင်း တည်ထောင်ခြင်း၊ သဘာဝထိန်းသိမ်းရေး နယ်မြေများ စီမံအုပ်ချုပ်ခြင်း လုပ်ငန်းများဟာလည်း နှစ်ရှည် စီမံကိန်းများ ရေးဆွဲပြီး တစိုက်မတ်မတ် ဆောင်ရွက်လာခဲ့တဲ့ လုပ်ငန်းများဖြစ်ပါတယ်။ ယနေ့အချိန်မှာ သစ်နှင့်သစ်တောထွက်ပစ္စည်းများ စဉ်ဆက်မပြတ် ထုတ်ယူရရှိနေခြင်းဟာ အတိတ်က သစ်တောအုပ်ချုပ် လုပ်ကိုင်မှု စနစ်ကောင်းတွေကို အသုံးချခဲ့ခြင်းကြောင့် ဖြစ်တယ်ဆိုတာကို အသိအမှတ်ပြုကြရမှာ ဖြစ်ပါတယ်။ ကောင်းမွန်မှန်ကန်တဲ့ နည်းစနစ်တွေကို ဖွံ့ဖြိုးတိုးတက်အောင် ဆက်လက်ဆောင်ရွက်ကြရမှာ ဖြစ်ပါတယ်။

သစ်တောထိန်းသိမ်းရေး လုပ်ငန်းများမှာ ဒေသခံပြည်သူလူထု ကျယ်ကျယ်ပြန့်ပြန့် ပူးပေါင်းပါဝင်နိုင်ဖို့နဲ့ ကျေးလက်ဒေသ ဖွံ့ဖြိုးတိုးတက်ဖို့အတွက် အစုအဖွဲ့ပိုင် သစ်တောလုပ်ငန်းများကို ၁၉၉၅ ခုနှစ်ကတည်းက စတင်ဆောင်ရွက်ခဲ့ပါတယ်။

ယခုအခါမှာ တိုးတက်ပြောင်းလဲလာတဲ့ ခေတ်စနစ်နဲ့အညီ အစုအဖွဲ့ပိုင် သစ်တောလုပ်ငန်း (Community Forestry)၊ လူမှုသစ်တောလုပ်ငန်း (Social Forestry) နဲ့ သီးနှံသစ်တောရောနှော စိုက်ပျိုးခြင်းလုပ်ငန်း (Agroforestry) တွေကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး အခြေခံစီးပွားရေး လုပ်ငန်းများဖြစ်တဲ့ REDD-plus၊ CDM PES (Payment for Ecosystem Services) နဲ့ သစ်တောအခြေခံ အစိမ်းရောင်စီးပွားရေးလုပ်ငန်းများမှာ ပေါင်းစပ်ချိတ်ဆက်ဆောင်ရွက်နိုင်ဖို့ လိုအပ်ပါတယ်။

Stakeholder တွေအားလုံးပါဝင်တဲ့ All Inclusive Consultation ဖြစ်ဖို့ လိုအပ်ပါတယ်။ Public

Private Partnership လုပ်ငန်းတွေဖွံ့ဖြိုးလာအောင် ဆောင်ရွက်ဖို့ လိုအပ်ပါတယ်။ နိုင်ငံတော်က ကြိုးပမ်းဆောင်ရွက်နေတဲ့ ဆင်းရဲနွမ်းပါးမှု လျော့ချရေးနဲ့ ကျေးလက်ဒေသ ဖွံ့ဖြိုးရေးလုပ်ငန်းတွေကို အထောက်အကူပြုဖို့ လိုအပ်ပါတယ်။

ယခုအခါမှာ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာဝန်ကြီးဌာန ပြည်ထောင်စုဝန်ကြီးဥက္ကဋ္ဌအဖြစ် ဆောင်ရွက်တဲ့ မြေယာခွဲဝေအသုံးချမှု စိစစ်ဆောင်ရွက်ရေးကော်မတီကလည်း မှန်ကန်တဲ့ မြေအသုံးချမှုမူဝါဒ ဖြစ်ထွန်းပေါ်ပေါက်ရေးလုပ်ငန်းများ၊ မြေ၏ စွမ်းဆောင်ရည်အလိုက် အတန်းအစားခွဲခြားမှု လုပ်ငန်းများ၊ မြေအသုံးချမှု စီမံကိန်းများ ပေါ်ထွန်းလာရေးအတွက် အားသွန်ခွန်စိုက် ဆောင်ရွက်နေတယ်ဆိုတာ အားလုံးအသိပဲ ဖြစ်ပါတယ်။ ဒီလိုမှန်ကန်တဲ့ မြေအသုံးချမှု မူဝါဒတွေပေါ်ပေါက်လာရင် သစ်တောထိန်းသိမ်းရေး လုပ်ငန်းတွေ ပိုမိုလုပ်ဆောင်လာနိုင်ပြီး REDD-plus လုပ်ငန်းတွေကို အလွန်အထောက်အကူပြုနိုင်တော့မှာ ဖြစ်ပါတယ်။

အထောက်အကူပြုနိုင်မှုနဲ့အညီ REDD-plus ရဲ့ ရည်မှန်းချက်များဖြစ်တဲ့ ရာသီဥတုပြောင်းလဲမှုကို လျော့ပါးသက်သာစေရုံသာမက အခြားအကျိုးကျေးဇူးတွေဖြစ်တဲ့ ဇီဝမျိုးစုံ မျိုးကွဲထိန်းသိမ်းရေး၊ ရေနှင့် မြေဆီလွှာ ထိန်းသိမ်းရေး၊ စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးတိုးတက်ရေး စတဲ့ အကျိုးကျေးဇူးတွေကိုပါ ခံစားကြရမှာ ဖြစ်ပါတယ်။

ဒါကြောင့် REDD-plus လုပ်ငန်းတွေကို အခြားသစ်တောကြွယ်ဝတဲ့ ကမ္ဘာ့ဖွံ့ဖြိုးဆဲ နိုင်ငံများနည်းတူ အရှိန်အဟုန်နဲ့ ဆောင်ရွက်နိုင်ဖို့ တိုက်တွန်းပြောကြားလိုပါတယ်။

{nfo nfawmfrsm;ciAsm;

အစိုးရမဟုတ်သော အဖွဲ့အစည်းများ ကျေးလက်မြို့ပြလူမှုအဖွဲ့အစည်းများနဲ့ ဒေသခံ ကျေးလက်ပြည်သူများဟာ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနဲ့ စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးတိုးတက်ရေးမှာ အဓိကအခန်းကဏ္ဍက ပါဝင်နေတဲ့အတွက် ကျွန်တော်တို့ရဲ့ လုပ်ဖော်ကိုင်ဖက်များ ဖြစ်ပါတယ်။ ဒါကြောင့် မြန်မာနိုင်ငံမှာ စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးတိုးတက်မှုကို အထောက်အကူပြုနိုင်မယ့် REDD-plus လုပ်ငန်းများ အကောင်အထည်ဖော်ရာမှာ အစိုးရမဟုတ်သော အဖွဲ့အစည်းများ၊ ကျေးလက်မြို့ပြအဖွဲ့အစည်းများနဲ့ ဒေသခံ ကျေးလက်ပြည်သူများက ကျွန်တော်တို့နဲ့အတူ အင်တိုက်အားတိုက် ပူးပေါင်းပါဝင် ဆောင်ရွက်ကြပါလို့ တိုက်တွန်းလိုပါတယ်။

‹ua&mufvmwl uwkqnfo nfawmfrsm;ciAsm;

ဒီကနေ့ အောင်မြင်စွာ ကျင်းပပြီးစီးခဲ့ REDD-plus လူစွမ်းအားအရင်းအမြစ် ဖွံ့ဖြိုးရေးစီမံကိန်းရဲ့ ကနဦးအလုပ်ရုံဆွေးနွေးပွဲမှာ လုပ်ငန်းများအတွက် အရေးကြီးတဲ့ စာတမ်း (၆)စောင် ဖတ်ကြားခဲ့ပြီး အစုအဖွဲ့ (၃)ဖွဲ့ခွဲ ဆွေးနွေးခဲ့ပါတယ်။

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနဲ့ သစ်တောရေးရာ ဝန်ကြီးဌာန အပါအဝင် ဆက်စပ်ဌာနအသီးသီးနဲ့ အစိုးရမဟုတ်သော အဖွဲ့အစည်းအသီးသီးမှ ပညာရှင်များရဲ့ ဝိုင်းဝန်းဆွေးနွေး အကြံပြုချက်များဟာ REDD-plus လုပ်ငန်းစဉ်များ အောင်မြင်စွာ အကောင်အထည်ဖော်နိုင်ရေးအတွက် လွန်စွာအထောက်အကူပြုမှာ ဖြစ်ပါတယ်။

နိဂုံးချုပ်အနေနဲ့ ယခုအခါ ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံအနေနဲ့ ကျေးလက်ဒေသ ဖွံ့ဖြိုးတိုးတက်ရေး၊ ဆင်းရဲနွမ်းပါးမှု လျှော့ချရေးနဲ့ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး လုပ်ငန်းများကို အရှိန်အဟုန်နှင့် ဆောင်ရွက်လျက် ရှိပါတယ်။ ဆင်းရဲနွမ်းပါးမှု လျှော့ချရေးနဲ့ ရာသီဥတုပြောင်းလဲမှုဆိုင်ရာ အကျိုးဆက်များ လျော့နည်းစေရေးဆိုင်ရာ လုပ်ငန်းများဟာ အလွန်အရေးကြီးပါတယ်။ သစ်တောများ ထိန်းသိမ်းကာကွယ်ခြင်းဟာ ဆင်းရဲနွမ်းပါးမှုနဲ့ အစာရေစာ ရှားပါးမှုတို့ကို ဖြေရှင်းပေးနိုင်ပြီး ပတ်ဝန်းကျင် စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးမှုကို ရရှိစေနိုင်မည့် လုပ်ငန်းများဖြစ်ကြောင်း ပြောကြားလိုပါတယ်။ သစ်တောထိန်းသိမ်းရေး အခြေခံ အစိမ်းရောင်စီးပွားရေး လုပ်ငန်းဖြစ်တဲ့ REDD+ စီမံကိန်း ကနဦးအလုပ်ရုံဆွေးနွေးပွဲကနေ ထွက်ပေါ်လာတဲ့ ရလဒ်ကောင်းများကို ပီပြင်ခိုင်မာစွာ အကောင်အထည်ဖော် ဆောင်ရွက်နိုင်ရေးအတွက် အခုလိုပဲ ဆက်လက်ပြီး အားသွန်ခွန်စိုက် ပူးပေါင်းပါဝင် ဆောင်ရွက်ကြပါလို့ တိုက်တွန်းပြောကြားရင်း နိဂုံးချုပ်အပ်ပါတယ်။ ။

t m;v jkuku;Zljwifygw , f