



Lao People's Democratic Republic

National focal point Final Report on Joint Crediting Mechanism towards Sustainable  
Low-Carbon Society Development in Lao PDR

Submitted to the Integrated research Systems for Sustainability Science (IR3S)

The University of Tokyo

Department of Agricultural Land Management (DALaM)

**Ministry of Agriculture and Forestry**

**March 3rd 2015**

## 1. Overview of Domestic Network Building Activities.

Uplands in Lao PDR are targets for forest degradation, deforestation, forest fires, land conversion, and land use changes, shifting cultivation, and the results of that can be loss of biodiversity, reduction in ecosystem services, soil nutrient depletion. Lao PDR is also facing increased competition between stakeholders in the land use sector. Global demand for raw materials that the rich Lao lands can provide to feed the hungry global markets. Green House Gas emissions are at the same time driving climate change in Lao PDR, putting (agro)ecosystem services at risk. Environment degradation also poses a threat to the rich biodiversity of Lao PDR that many upland farmers rely on to supplement their on-farm intake (grassroots food security).

### **Potential needs for JCM (emphasized areas of projects, sector priority).**

#### 1. Efficiency of Cooking Stove in upland remote rural areas

The overall objective of the ECS ideas is to contribute towards poverty alleviation in Lao PDR, especially in remote upland remote areas, where access to electric energy and natural gas is very limited through the development of a sustainable consumption and production chain of fuel efficient Improved Cook Stoves (ICS). Through achieving widespread distribution of ICS, the ideas aims to reduce wood fuel consumption and generate concomitant benefits, including time and money savings for households, reduced household air pollution, and reduced deforestation and greenhouse gas emissions.

Energy Efficiency Stove study was conducted in rural upland villages including survey of the use of firewood, quantity of firewood used per household per day, method of existing cooking by introducing Cooking Efficiency Stove to local farmers which the introduced Cooking Efficiency Stove has reduced the firewood by nearly 50% when comparing to the traditional cooking stove. From our survey the local farmers use in average of 6-8 kg of dry firewood for cooking per day per household, most of firewood is from forest.



Traditional cooking stove



Improved cooking stove

2. Water storage , and efficient use of water key to sustainable livelihoods in Upland shifting cultivation areas.

The scarcity of water both for drinking and agricultural activities in dry season in upland shifting cultivation areas is very crucial and urgently needed for the upland communities in Lao PDR, to ensure water drinking safety and food security. Lao PDR is characterized by monsoon climatic regime, there is two distinguished seasons, wet (raining) and dry. During the raining season, water supply is surplus both for drinking and agriculture. However, during the dry season, water scarcity is the main issues in the remote upland areas. In face of global warming and climate change, the poor resource communities had directly received the negative impact of these phenomena. Water resources like steams nearby the villages in the past used to supply water for communities round years. However, at present the stream waters is become dry out of water or the available is very limited. To solve the problems, and help these communities. It is needed to design and develop water saving and local simple small irrigation scheme techniques for these communities. From the study of the APFNet project on Sustainable Forest Rehabilitation and Management for the Conservation of Trans-boundary Ecological Security in Montane Mainland Southeast Asia – Pilot Demonstration Project of Lao PDR, Myanmar and China/Yunnan (SFR-MMSEA), it was found that water saving techniques in the head water and develop of small irrigation schema which used available local material is seemed to be the path way to the success, while saving time and labor for transporting water for women.



Small irrigation schema

Drip water techniques

Water collector

3. Solid waste management in urban areas of Vientiane capital city

Vientiane is the capital city of Lao PDR and has a land area of 3,920 square kilometers. The population of Vientiane is 639,326 (Vientiane Capital City, 2003) and is increasing at a rate of 4.7% (STEA, NORAD, UNEP, 2001). Vientiane Capital City consists of nine districts, but the waste management infrastructure currently mainly services the wards (ban) in four of these districts: Chanthaboury, Sikhottabong, Sisattanak and Xaysettha Districts. Waste collection at the landfill was 41,489 t/year in 2001 and 42,704 t/year in 2002 or about 200-250 t per day. This equates to on average 0.75 kilograms of solid waste per capita per day (UDAA, 2004). There is one dumping site in Vientiane. The composition of waste collected by the waste pickers' is different from waste found at the landfill, informal sector, recycling, using in home gardens, burning and dumping

The key issues of solid waste management in Vientiane Capital City are:

- Lack of awareness on the proper disposal of solid waste.
- Excess of waste collection taken to the dumping sites.
- Problems arising due to poor waste management include bad odors, numerous flies and no separation of waste into different containers;
- The generally dirty urban city and environment;
- Solid waste-related activities for poor waste pickers posing a serious threat to public health as well as an aesthetic problem in the city.

#### Purposes

The objectives of the solid waste management in urban areas of Vientiane Capital City project are as follows:

- To survey about waste data collection, composition of waste and recycling for the economy;
- To establish waste data for monitoring using GIS.
- To increase public awareness.

## **One –Stop service (preparation of one stop service, preparation to become the NFP in the Country**

The implementation of domestic network and network consortium consisting of department of Agricultural land Management (DALaM) under ministry of Agricultural and Forestry (MAF), (Mr. Oroth SENGTAHEUANGHOUNG) as National Focal point to coordinate with academic institutions, concerned line ministries, local Authorities with different levels ( provincial, district, cluster villages and village levels),GOs, NGos and CSOs.

Academic institutions presented by the National university of Lao, consisted of faculty of Environment Sciences (FOES), faculty of Forestry Sciences (FOFS), Faculty of Agriculture (FOA), Luangprabang Univesity (LPBU) and Champasack University (CHPU).

Line ministries presented by Ministry of Agriculture and Forestry consisted of National Agricultural and Forestry Research Institute (NAFRI) presented by Policy Research Centre (PRC)and Forestry Research Centre (FRC) and department of Forestry presented by REDD+ office.

Ministry of Natural Resources and Environment consisted of Department of Disaster Management and Climate Change (DDMCC), Department of Pollution Control (PCD) and Department of Extension and Quality Environment.

Ministry of Sciences and Technology consisted of Department of Technology and Innovative (DOTI) and Recycling Energy Management Institute (REMI)

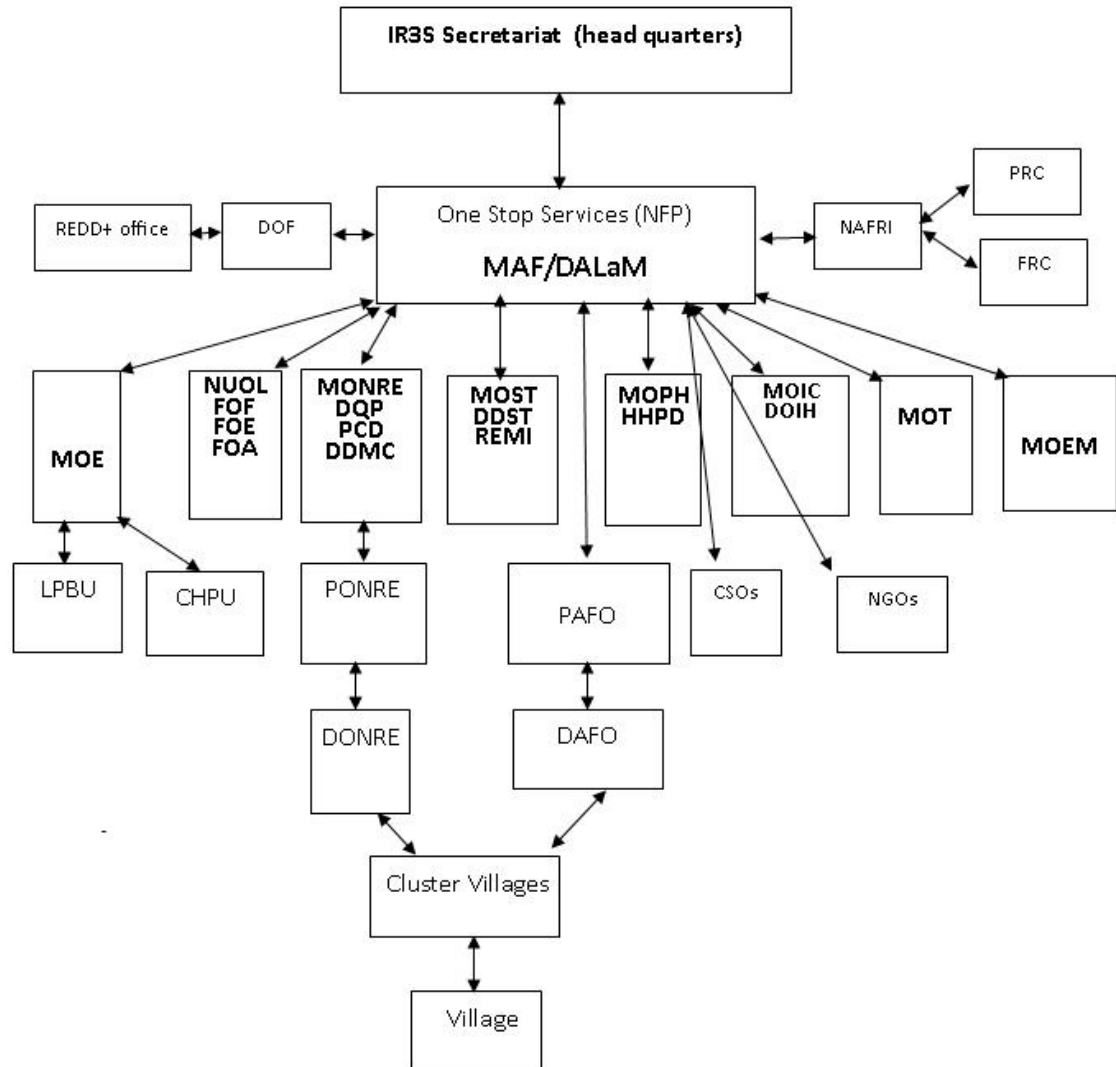
Ministry of Public Health (MOPH) presented by the Department of Hygiene and Health Promotion (HHPD)

Ministry of Industry and commerce presented by the Department of Industry and Handicraft (DOIH), Ministry of Transport and Ministry Energy and Mines

Local Authorities consisted of Provincial and district Agricultural and Forestry Offices PAFO, DAFO) and Natural Resource and Environments (PONRE, DONRE), Cluster villages and villages, Non-Government Originations and Civil societies.

Figure . One-Stop Servicece (preparation of one top Service, )

## One Stop, Service in Lao PDR



DALaM	Department of Agricultural Land Management
ALUPC	Agricultural Land Use Planning Centre/DALaM
CA-E C	Conservation Agriculture and Ecological Centre/DALaM
NAFRI	National Agricultural and Forestry Research Institute
PRC/NAFRI	Policy Research Centre/NAFRI
P-C D/NAFRI	Planning and Cooperation Division/NAFRI
FRC/NAFRI	Forestry Research Centre/NAFRI
DOF	Department of Forestry
REDD+ office/DOF	Reduce Emission from Deforestation and Degradation
NUOL	National University of Laos
FOF/NUOL	Faculty of Forestry sciences/NUOL

FOA/NUOL	Faculty of Agriculture/NUOL
FOE/NUOL	Faculty of Environment Sciences/NUOL
MOE	Ministry of Education
MOST	Ministry of Sciences and Technology
DTI/MOST	Department of Technology and Innovative/MOST
REMI/MOST	Recycling Energy Management Institute/MOST
MONRE	Ministry of Natural Resources and Environment
DDMCC/MONRE	Department of Disaster Management and Climate Change/MONRE
PCD/MONRE	Pollution Control Department/MONRE
DEQE/MONRE	Department of Extension of Quality Environment
DOIH/MOIC	Department of Industry and Handicraft/Ministry of Industry and Commerce
DOIH/ MOIC	Department of Industry and Handicraft/MOIC
MOPH	Ministry of Public Health
HHPD/MOPH	Hygiene and Health Promotion Department/MOPH
MOEM	Ministry of Energy and mines
PAFO	Provincial Agricultural and Forestry Office
DAFO	Provincial Agricultural and Forestry Office
PONRE	Provincial Natural Resources and Environment
DONRE	District Natural Resources and Environment
CSO	Civil society
NGO	Non government organization

- **Summary of the study workshop**

The Workshop on the Joint Crediting Mechanism towards Sustainable Low-Carbon Society Development in Laos was organized jointly by the Department of Agricultural Land Management (DALaM) and Integrated Research System for Sustainability Science (IR3S), The University of Tokyo. The objectives of the workshop is to: 1) update the participants about the activities towards low-carbon development including greenhouse gas emissions and climate change mitigation in Laos ; 2) give an introduction to the 3E (Energy-Environment-Ecosystem) nexus, JCM and their latest developments; 3) explore opportunities and challenges for JCM projects for climate change mitigation and sustainable development in Lao PDR.

- **Date:** February 13<sup>th</sup>, 2015
- **Location:** DALaM meeting room

There were 29 participants attended the workshop: Seven participant from department of Agricultural Land Management (DALaM), four participants from the National Agricultural and Forestry, Research Institute (NAFRI), one participant from department of Forestry (DOF), five participants from the National University of Laos, four participants from ministry of Natural resources and environment, two participants from Ministry of Sciences and Technology, one participant from ministry of Education, one participant from ministry of Energy and Mines, one participants from Ministry of Industry and Handicraft, one participant from Ministry of Public Health, and one participant from Ministry of Transport.

Two resource persons from the country and one person from the university of Tokyo were invited to present the presentation, the first presentation on Policies and activities towards low-carbon development in Laos. Presented by Dr. Savanh Chanthakoumman, director of REDD+ office, Department of Forestry (DOF), the second presentation on Specific topic relating to low-carbon development and/or JCM in Laos. Presented by Dr. Chansamone Phongoudom, Deputy Director of National Agricultural and Forestry Research Institute (NAFRI), third presentation on Introduction to JCM and 3E nexus and their latest developments. Presented by Dr. Geetha Mohan, from IR3S, The University of Tokyo.

#### **The first presentation consisting of 4 parts**

1. Policy Towards Low-Carbon in Lao PDR;
2. National REDD+ Framework and Donors Supports to REDD+ in Lao PDR;
3. Progress of REDD+ Activities by Components;
4. Challenges;
5. Conclusions.

#### **Policies Towards Low Carbon in Lao PDR**

1. Sustainable Forest Management “SFM”:

The Lao government had set up the target for establishing Protection Forests up to .2 million ha, Protected Areas up to 4.7 million ha, Production Forest 3.1 million ha.

2. Forestry Strategy 2020

Increasing the forest cover up to 65% and 70% by 2015 and 2020, respectively by means, - Restoration the Potential Forest Areas of 2 million ha; Forest rehabilitation degraded land of 600,000 ha, Tree planting of 500,000 ha.

3. Define the Regality frameworks:

Strategy on Climate Change of the Lao PDR (2010); “DD&CC”, National Action Plan for Adaptation to Climate Change “NAPA” (2009); Strategy on Biological Diversity 2020.

4. Implement Mitigation Activities:

Land Use Planning and Land Allocation; Poverty eradication Programs; Clean Development Mechanism Scheme, Beverage Companies (Beer Lao); Battery Vehicles scheme;. Harmful/Toxic chemical ban; Solar cell Promotion; Saving Stove.

#### **Low Carbon Development in Lao PDR under REDD+ Implementation**

Lao PDR had ratified to the UNFCCC in 1995 and Kyoto Protocol in 2003; Post COP 13 the action on REDD+ was made; 2008 Lao was one of the 37 countries selected to the World Bank (FCPF), and one of only 8 to benefit from (GEF).

#### **Donors Support for REDD+ in Laos**

REDD+ and REDD+ related financing in Laos estimated between USD 70-90 million pledged through main bilateral and multilateral cooperation. About 35% of the amount mostly by bilateral co. delivered. Forest Carbon partnership Facility through World Bank; Forest Investment Program through (FIP) MDB; Finland Government through the FIP; Japan Government through numbers of Projects and Activities; Germany Government through CliPAD, biodiversity Projects; NGOs Projects through WWF, WCS; and Private Company (SNV).

#### **Progress of REDD+ activities by components**



The proposal for institutional set up, to link REDD<sup>+</sup> with the NEC (*high Gov. body on the CC issues, chaired by Deputy Prime Minister*) has been reported to the Chair of NEC for consideration; The follow up on the decision by the NEC will be made at the annual NEC meeting; MAF and MONRE have discussed over the tasks and responsibilities on REDD<sup>+</sup>, though many issues are unclear; REDD<sup>+</sup> Division in DFRM/MONRE has been established, and start building up capacities on REDD<sup>+</sup> to take coordination leading role in the future, but no decision when and how to transfer the role made, yet. Current Task Force Members Designated by Minister for Natural Resources & Environment “MONRE” and housed in Department of Forest Resource Management.

### **Regulatory framework: *Forestry law review and benefit sharing studies***

Analysis of existing regulatory framework; Report on gaps and the need for revising. Forestry Law to enable effective REDD<sup>+</sup> implementation in Laos; National WS to consult with relevant stakeholders on clarification on requirement and process of Forestry Law revision; Time frame for revision is selected: *June 2012 .However, the process is likely to delay as the Gov. want to see the so called “National Land Management Strategy” approval ahead of the revision of both Forestry and Land laws.*

### **Monitoring, Reporting, Verification and Reference Emission Levels/Reference Level**

Work have been done by the Forest Inventory Division including: Establish forest cover maps for 2005 and 2010, and for 2000 in pipe line, thus national default REL can be produced. Refining REL/RL for Sub-national levels for some provinces will be conducted by the Demo. REDD+ Projects by reviewing the FIM maps, and producing more cover maps in shorter year intervals (*eg. CliPAD for Houaphan; PAREDD for Luangprabang; FIP for Oudomsai, Luangnamtha and Bokeo*). Applying wall-wall satellite monitoring to tract forest-cover change (*doing it annually or one every two years*)

### **Safeguards**

Free Prior and Informed Consent (FPIC) Process developing guideline has been carried out by the CliPAD Project: Partner with CSO (LBA) to develop FPIC guideline, Consultation with relevant stakeholders (relevant Gov. agencies, Lao Front for Construction, Woman Union) Field studies conducted in *Nam Phui NPA*, formerly identified as the one of REDD<sup>+</sup> demonstration project area of the CliPAD (*due to the inaccessibility Nam Phui NPA no longer suitable for the Project*). REDD<sup>+</sup> capacity building at grass-root by RECOFTC

### **Challenges**

Institutional Arrangement: *REDD<sup>+</sup> in Laos lie under two ministries, the new MONRE has the mandate from Gov. to lead on REDD<sup>+</sup>, but not yet affectively functioning due to mainly capacities and readiness;*

Enabling Framework and Regulatory: *Revision of relevant laws and establishing new regulations can take time, and link with many other issues and agencies outsides forestry sectors.*

Requirements of high technical aspects of REL/RL and MRV: *Current capacities in this area is limited within the central levels, and thus more capacities buildings need for sub-national levels.*

### **Conclusions**

Lao PDR is eligible country for carrying REDD<sup>+</sup>; REDD<sup>+</sup> is a challenges task and risks; Strengthen the coordination and cooperation of the two agencies which has the obligation to implement REDD<sup>+</sup> both National and Sub-national levels and with other relevant agencies; JICA Project requires Carbon Offset to contribute Japanese efforts to reducing Carbon Emissions, Private sectors requires credits to expect their benefits through REDD<sup>+</sup> under JCM/BOCM; JCM is hope and opportunity and make mission possible for Lao PDR to Carbon Credit/Carbon off sett.

### **Sources of GHG emission In Lao PDR**

Major Sectors contributed to GHG emission is from Agriculture (14.4 % ), Land Use Change and Forestry (83.3 % ), Energy (2.0 % ), Waste (0.3%), Industrial Products (0.1 % )

### **Second presentation on Status of Green growth low-carbon development and Joint credit mechanism in Lao PDR by Dr. Chanhsamone Phongoudome**

The presentation consisting of 4 parts: International convention activities, Initiative of Green Growth Low Carbon, Initiative of Joint Credit Mechanism and Future & Conclusion

#### **International convention activities**

Including 1992 Rio, UNCCD 1995, 1996 (Report No. 3 or 4), CBD 1996, 2004 NBSAP (assessment 2012), CITES 2004, UNFCCC 1995 Report No. I, II - III (KP 1997, 2003, 2005; CDM 2003, 2005, 2007, 2008; REDD 2008; NAPA's 2009; NSCC 2010; REDD+ 2011; JCM 2013.

#### **Initiatives of low carbon green growth**

The first Seminar on **Green Growth Policy Tools for Low Carbon Development & On-Site Training of Trainers on Green Growth Policy Tools for Low Carbon Development**. Was Held in Champasack Province and Vientiane Capital, Lao PDR on 18-21 Feb. 2013; Participants were from 29 provincial, 17 from central government, and 35 policy makers from various government ministries, Organized by: The United Nations Economic & Social Commission for Asia Pacific (ESCAP), AIT, British High Commission/MONRE

Green Growth in case of Laos is a mean to develop the country's natural resources in economical, social and environmental sustainable way.

Challenges facing for green growth is green growth is still not clear concept and in an initial stages, lack of appropriate mechanism and specific institutional for green growth to integrate the tree dimensions of sustainable development in balanced manner, lack of human resources and capacities, in particularly at local levels. High dependency on natural resources and low adaptive capacity for the poor, lack of sustainable financing mechanism.

#### **Policies and strategies taken to promote green growth.**

The national constitution (1<sup>st</sup> edition 1991 and 2<sup>nd</sup> 2003) stated in article 17 that “ all organization and citizens must protect the environment and natural resources: land, underground, Forest, fauna, water sources, and atmosphere”. The solution of the nation congress of party each five years, the 9<sup>th</sup> solution of party congress 2011-2015 (Sustainable development). Longterm socio-economic development plan to the year 2020. National environment five year action plan 2011-2015 . Environment Sustainable transport strategy. Sustainable transport strategy action

plan to 2020, National disaster management plan 2020, Renewable energy strategy plan 2005-2010, Ecotourism strategy and action plan 2005-2010, Forestry strategy to 2020, strategy on climate change and national adaptation program 2009.

5 track of low carbon green growth roadmap, from quantity to quality growth, reform invisible structure, green infrastructure, promotion of green business and low carbon development strategy

### **Initiative of JCM in Forestry**

1990 TFAP for Sustainable Forest Management (SFM), 2003 Clean Development Mechanism (CDM) but not AR/CDM, 2007 Bali COP 13 (REDD), 2008 REDD, REDD+, PES, 2009 NAPA, 2010 NSCC, 31 December 2012 post KP, 2013 JCM, First National Workshop on JCM May 2014 (second workshop).

- Japan and Lao PDR signed the bilateral document agreement for the JCM on 7<sup>th</sup> August 2013

Mandate, Lao PDR should implement JCM project through MRV to achieve the target of reducing or removal of GHG.

- Feasibility study JCM in Lao PDR under ministry of Environment of Japan included biomass utilization in cement Kiln (FY2014), REDD+ in Luangprabang (FY 2014), city to city cooperation between Vientiane (Laos) and Kyoto (Japan) (FY 2014), promotion of use electric vehicles in Vientiane capital (FY2014).
- Feasibility study JCM in Lao PDR under ministry of Economy, Trade and Industry of Japan included energy saving at beer plan(FY 2013), REDD+ (FY 2014), and energy efficiency container date center (FY 2014)

### **Conclusion.**

Capacity building is very important to implement JCM, funding should be sustainable, the selection of pilot project to implement JCP should be based in participatory approach. Technical guide line for implementing JCM should be fitted with the local situation.

Third presentation on Energy, Environment and Ecosystems (3E) Nexus Initiative by Dr Geetha Mohan, Integrated Research System for Sustainability Science (IR3S) The University of Tokyo  
The presentation consisting of 4 parts: What is 3Enexus initiative?, What are the goals, and vision of 3E nexus? How we implement our activities? What is the role of 3E nexus secretariat and their operational resources?

3E Nexus initiative is Sustainable low carbon society by energy saving and promotion of renewable energy, Ensure safe and comfort living by recycling of resources and conserving water and air quality, Ensure effective use of biological resources by preserving biodiversity and ecosystem

Goals are Promote awareness of national/local government and local businesses on JCM and advanced technologies, Recognize local requirements and similar with advanced technologies in order to understand co-benefits. Assist Japanese businesses to develop JCM project, Create enabling environment for advanced low carbon technologies

## Questions, answers and discussion

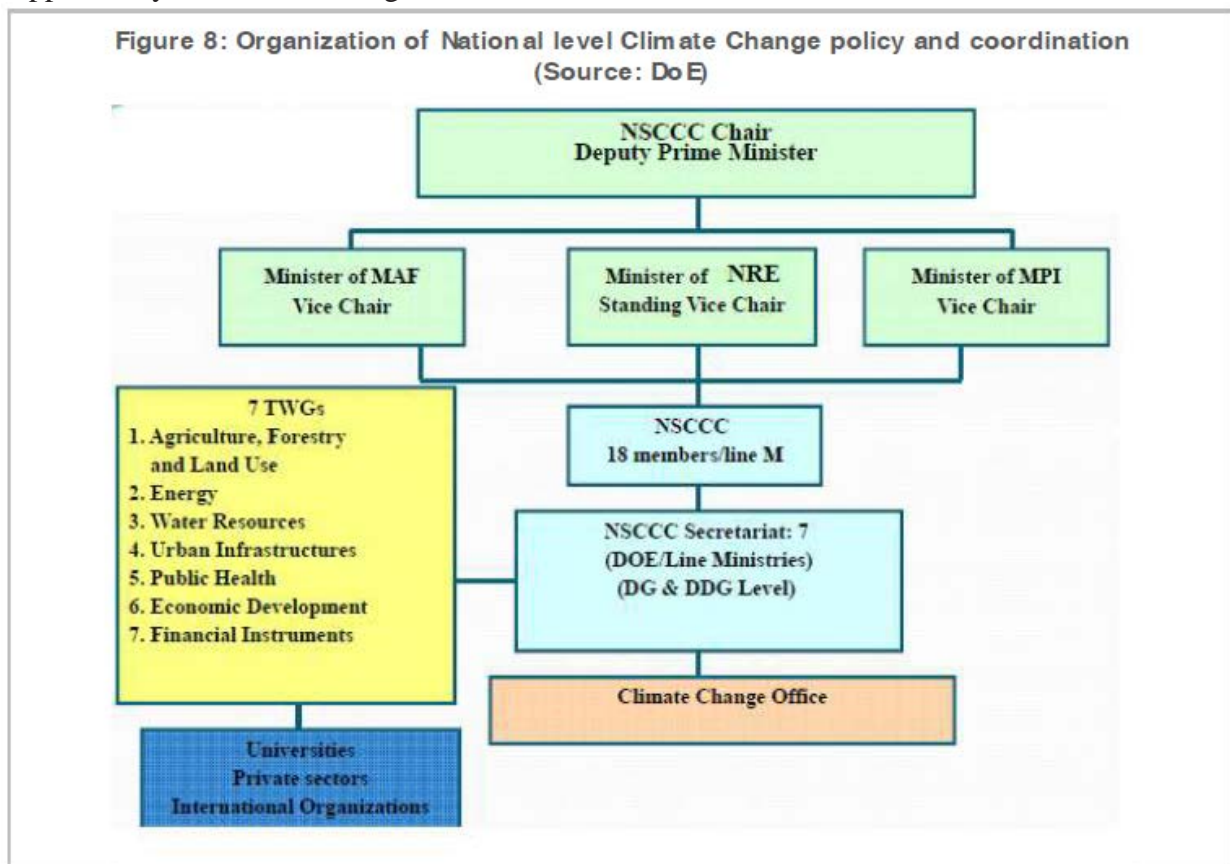
1. It is difficult to define or estimate the threshold of greenhouse emission in the future  
Land use change dramatically such as the conversion from natural forest to agricultural land, tree planting, residential areas, hydropower dam and construction areas. These may make difficulty to define the estimation of greenhouse gas emission. The results of estimation is very important because the creation of threshold will be compared to the reference emission level (REL), resulted in easily calculating or estimating carbon credit in term of economical benefit from REDD+
2. It is difficult to define, what is the cause of land use change and forest degradation?  
The causes or reasons of forest degradation and land use change are from many reason or factors with different levels from global to local levels and many categories. It is difficult for the concerned agencies or organizations to control or manage such as the global or regional demand of rubber, oil palm, or high value economical crops. Land use changes are not parallel with development of natural resources.
3. Calculation or estimation of carbon sequestration may be estimated lower than the reality  
Carbon accumulation or sequestration is very complexity, especially in the northern part of the country. The estimation of carbon storage may lower than the reality, due to the formulation of calculation.
4. Monitoring, Reporting and Valuation (MRV) should be conducted at different levels  
Survey or monitoring of restoration or emission of carbon should be conducted from national to local levels by using of high technology methods or equipment's with high experienced researchers
5. Benefit sharing should be managed by central and local levels  
Mechanism on benefit sharing is very important, it is the path way to the success, effectiveness, equity and social welfares of the JCM project implementation. From the lesson learn of evaluation at local level, it was found that benefit sharing mechanism should be parallel conducted or managed by central and local levels. Benefit sharing mechanism based on central level is often met with difficult to the participation of local communities.
6. Selection of pilot JCM should be fitted local condition  
Condition or criteria for pilot project on JCM selection at national or local levels is very important to take into consideration. Because it may decide to the success or fell of JCM project implementation. From many studies. It was found that the selection of pilot project, the decision is mostly from the interest of organizations or leaders. It may result in the felling of the project.
7. Participatory formulation and enforcement of community rules for social fencing to support in effectively implementation of JCM projects.  
Participatory social fencing or enforcement of community rules. it is needed to effectively implement of the JCM project, through meeting, consultation with community members and local authorities.
8. Need to expand the domestic network down to community levels

9. Invite more resource persons from business persons and other stakeholders includes community persons, NGO's, CSOs.
10. More capacity building activities required to promote JCM and 3E Nexus initiatives., especially on technical aspect, methodology, measurement, reporting and Verification (MRV)
11. Identify key possibility JCM projects under different sectors (energy, forestry and waste )through Domestic Network

- List of network and potential stakeholders

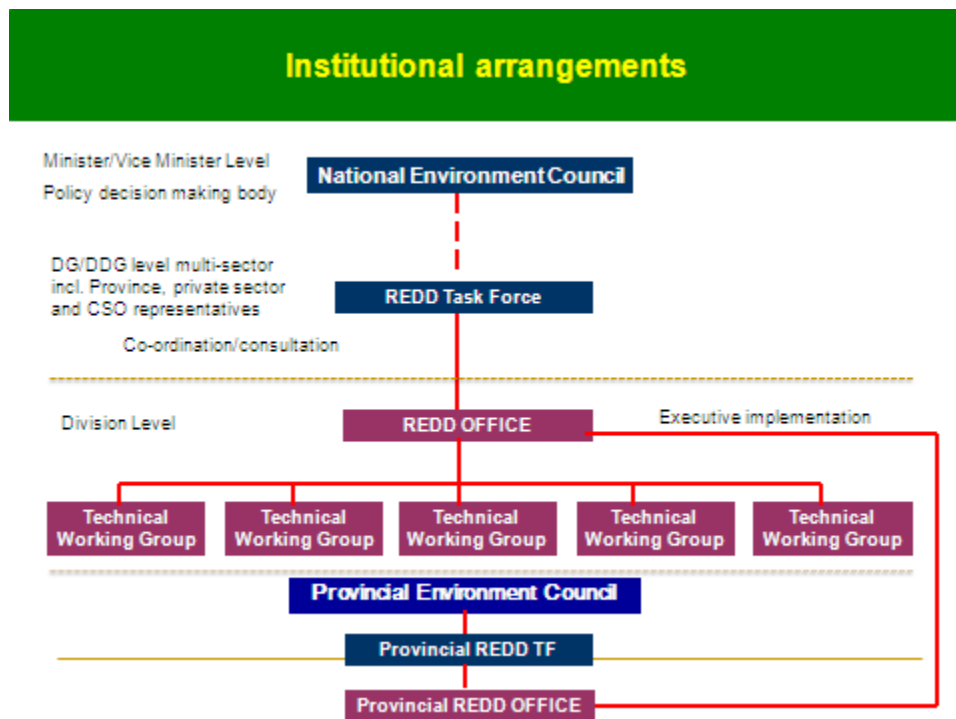
1. Networking on Climate change policy and coordination at national levels

The networking on climate change members designated and chaired by deputy prime minister, led by 3 vice chair ministries, ministry of agriculture and forestry (MAF), ministry of natural resources and environment (MONRE) and ministry of planning and investment, each ministry represented by their minister. There are one network steering committee consisted of 18 members from concerned line ministries, The NSCC consulted and supported by the Universities, Private sector and international organizations. one technical working group from 7 concerned sectors: agriculture-forestry-land use, energy, water resources, urban infrastructure, public health, economic development and financial instrument. The steering committee assisted and supported by the climate change office.



2. Networking on REDD+

Current Task Force Members **of REDD+ were** designated by Minister for Natural Resources & Environment “MONRE”, housed in Department of Forest Resource Management Chaired by it Director General; Deputy of the Chair is the Director General of Department of Forestry. Others members including Deputy Director General of Department of Forestry of Ministry of Agriculture and Forestry; Deputy Director General of Department of Disaster Management & Climate Change, Deputy Director General of Department of Forest Inventory, Deputy Director General of National Agricultural Forestry Research Institute of ministry of Agriculture and Forestry, Director of Research Division, Faculty of Forestry, National university of Lao; Deputy Director General of Mining Department; Deputy Director General of Electricity Department; Deputy Director General of Law Department; Deputy Director General of Planning Department of Ministry of Planning and Investment; Director of Internal, Finance Cooperation Division, Representative of Lao Front for construction; Representative of Lao Women Union; Representative of Lao national Chamber of Industry and Commerce; Representative of Ministry of national Defense.



### 3. Potential stakeholders

In order to widely extend the networking channel within the country. It was advised to involve local Authorities, provincial, district, community levels, as well as NGOs, GOs, private sectors and civil societies.

## II Future steps

- Expand the research network across the local, regional and national level.

The involvement of stakeholder to the research network is needed, at local level should be involved of communities, cluster villages, and villages, at central levels should be included more academicians from institutions or university, to enhance and improve the sciences and technologies and more included NGOs, GOs and Civil societies in the network to diversify multidisciplinary from different sectors.

- Enhance the capacity building activities: e.g. materials, training programmes on MRV methodologies.

Maximizing terrestrial carbon sequestration while minimizing emissions is the main target goal of JCM project in Lao PDR, to fulfill this target, some activities on capacity building for national domestic network should be taken into account:

- 1) Methodology for estimating the total biophysical and feasible carbon mitigation potential (through avoided emissions and sequestration) for all land categories;
- 2) Methodology for measuring and monitoring terrestrial carbon for different land classes at multiple scales (including aggregated global estimates);
- 3) Methodology for setting reference emission and sequestration levels and complying with standards.
- 4) Building national capacities for monitoring, reporting and verification (MRV) of the emission and sequestration levels.

### Annex:

1. Workshop agenda, and pictures
2. Workshop presentation