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IS NEPAL READY FOR REDD+? AN ANALYSIS OF INSTITUTIONAL PRECONDITIONS AND IMPLICATIONS FOR FURTHER RESEARCH

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ABSTRACT

The thesis explores the potential pitfalls and projected benefits of Reducing Emissions from Deforestation and Forest Degradation plus (REDD+) mechanism in different institutional set up of forest communities of selected countries (first with South-East Asian countries and then with Nepal) through literature review. The institutional analysis was done by using modified Institutional Analysis and Development (IAD) framework. The study focused on the institutional preconditions such as tenure rights and collective action and their importance to local communities and the effect of REDD+. The analysis of the cases showed that various factors such as differing institutional setup, tenure rights and collective action, differing patterns of interaction, power dynamics and individual or group capabilities institutions, affect the outcomes of REDD+. In many cases, REDD+ has not been able to value customary rights of indigenous and local people, opposite of their livelihood improvement goals. In the case of Nepal, it is assessed whether Nepal had good institutional preconditions for REDD+ with positive outcomes. Besides literature review, policy expert's interview was taken for case of Nepal. The analysis showed that Nepal has good institutional set up to benefit from REDD+. It has strong community based forest management institutions, supportive legal and regulatory framework for decentralized forest governance, successful collective action, well defined benefit sharing mechanism and growing capacity in monitoring, measuring and verifying forest carbon stocks. However, these things are not enough for successful REDD+ regime in Nepal, as transaction cost associated with forest management is high in Nepal. Likewise, introduction of REDD+ can limit the locals from their customary rights of using forest products, affecting their livelihoods. So, developmental activities to better livelihoods need to be planned, and REDD+ should go beyond the principles of carbon marketing. Since, tenure rights are important, it is crucial to establish and define unclear carbon tenure. Hence, lots of issues are to be sorted out for success of REDD+, though it offers several potential benefits to forest dependent communities For Nepal, REDD+ has potential to add benefits to the current forestry regime, but it will have limited positive implications to poverty. As the community forests in Nepal are in sustainably managed phase, they will not gain much from the forest carbon stock enhancement or additionality in carbon. For sure, it can benefit more, if reducing emissions from all land uses are accounted.

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LIST OF ABBREVIATION

ADB	Asian Development Bank
ANSAB	Asia Network for Sustainable Agriculture and Bioresource
A/R	Afforestation and Reforestation
CBFM	Community Based Forest Management
CCMIN	Climate Change Monitoring and Information Network
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CF	Community Forests
CFUGs	Community Forest Users Groups
CIFOR	Center for International Forestry Research
CLCs	Community Livelihoods Clubs
CO_2	Carbon dioxide
CoP	Conference of Parties
CPR	Common Pool Resources
DFRS	Department of Forest Research and Survey, Nepal
DoF	Department of Forests, Nepal
ETS	Emission Trading Schemes
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility

FECOFUN	Federation of Community Based Organizations
FIP	Forest Investment Programme
FLA	Forest Land Allocation
FPIC	Free, Prior and Informed Consent
Gg	Giga Gram
GHGs	Green House Gases
GIS	Geographical Information System
ha	hectares
IAD	Institutional Analysis and Development
ICIMOD	International Centre for Integrated Mountain Development
IFPRI	International Food Policy Research Institute
IFRI	International Forestry Resources and Institutions
IIED	International Institute for Environment and Development
ILO	International Labor Organization
IP	Implementing Partners
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
JI	Joint Implementation
KFCP	Kalimantan Forests and Climate Partnership
KP	Kyoto Protocol

Lao PDR	Lao People's Democratic Republic
LULUCF	Land use, Land-Use Change and Forestry
NEFIN	Nepal Federation of Indigenous Nations
NTFPs	Non Timber Forest Products
PAMs	Policies and Measures
PPM	Parts Per Million
REALU	Reducing Emissions from all Land Uses
RECOFTC	Regional Community Forestry Training Centre
REDD	Reducing Emissions from Deforestation and Degradation
REDD+	Reducing Emissions from Deforestation and Degradation plus
RRI	Rights and Resources Initiative
SRD	Sustainable Rural Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations- Reducing Emissions from Deforestation and Degradation
USAID	United States Agency for International Development

1 INTRODUCTION

1.1 Road to REDD

About 18-25% of global greenhouse gas emissions around the world could be reduced quickly by avoiding deforestation (MITCHELL *et al*. 2007, p. 4). The deforestation can be reduced by introducing sustainable forest management practices through active participation of the various stakeholders. The collective action of all the stakeholders is important to manage forest sustainably. Since, sustainably managed forest is a key to curb the negative effects of climate change. The forests acts both as a carbon source and sink depending on the management regime, playing important role in stabilizing atmospheric concentrations of greenhouse gases (GHGs) such as carbon dioxide (CO_2). Many communities in developing countries have been successful and are working to transform the degraded state of natural forests to rejuvenating state by sustainable forest management, thereby avoiding deforestation and the subsequent release of CO_2 emissions into the atmosphere that result in additional carbon sequestration.

Nonetheless, for the instutionalisation of reduction of green house gas emissions from forests, certain policy mechanism is required. Citing this requirement, various new policy mechanisms have been instituted for alleviating climate change process. The concern to reduce GHGs and CO_2 concentrations to mitigate global warming led to the Kyoto Protocol (KP) - a global agreement. The treaty took place at Kyoto, Japan in the year 1997 during the Conference of Parties (CoP) 3 organized under United Nations Framework Convention on Climate Change (UNFCCC). The Kyoto Protocol introduced three flexible market mechanisms consisting of Emission Trading Schemes (ETS), the Joint Implementation (JI) project mechanism primarily addressing former communist countries under transition, and the Clean Development Mechanism (CDM), thereby initiating carbon market (BENECKE *et al*. 2008, p. 7). The Clean Development Mechanism and Joint Implementation both are project based mechanism. Of these mechanisms, only Clean Development Mechanism involves developing countries. Under the Kyoto Protocol, developing countries don't need to reduce their GHG emissions, whereas industrialized countries should accomplish specified targets - by reducing GHG emissions in their own country; implementing projects to reduce emissions in other countries; or by trading in carbon market. And, countries that

satisfied the Kyoto obligations can sell their excess carbon credits to countries which can't meet their targets. Hence, Kyoto Protocol opened the door for creating the carbon market through Clean Development Mechanism (CDM).

CDM mechanism of Kyoto Protocol do not have provision to confer the financial incentives for the forest management activities that reduce emissions from deforestation, excluding the Community Managed Forests and other sustainably managed forests from carbon market (MITCHELL *et al*. 2007, p. 7). Only reforestation and afforestation activities are entitled for incentives in Clean Development Mechanism, whereas, in most of the developing countries such as Brazil, Indonesia, Nepal, Lao PDR, Thailand, Vietnam etc., participatory forestry management or Community Based Forest Management (CBFM) practices have already been in use for reducing further degradation (SKUTSCH 2004). In these developing countries, carbon emissions are more from high deforestation and the efforts of managing forests sustainably goes unacknowledged under CDM for these countries. These issues led to initiation of mechanism for Reducing Emissions from Deforestation and Degradation (REDD) in 2007. The REDD mechanism was launched under the aegis of United Nations – REDD programme, since 2008 September in the field level (UN-REDD 2009). Under the REDD programme, REDD+ is initiated in these countries to accredit not only emissions reduction from forested land, but also to reward the activities of conversation, sustainable management of forests and boosting forest carbon stocks. Hence, REDD mechanism also plans to contribute in rural poverty reduction by sharing financial and social benefits with local communities. Thus, REDD plans to incorporate development and conservation objectives.

In many of these countries especially in Asia, community forestry regime has been subjected to the REDD mechanism. However, SKUTSCH *et al.* (2009) noted that the success or failure of community forestry in various places have been affected by forest tenure rights. According to SKUTSCH *et al.* (2009, p. 9), most of the local communities though having de facto rights on forest resources, do not have legal forest rights that resulted in the mismanagement of the resources and unequal sharing of benefits. Giving financial value to the forest carbon can widen the gaps between the communities due to inequitable sharing of benefits. Hence, for the desired outcomes, legal property rights and equitable benefit sharing issues should be addressed. It is important to identify who will get what among

local communities. Also, it is important to take into account the transaction cost involved in participatory forest management (SKUTSCH *et al.* 2009; ADHIKARI and LOVETT 2006). According to ADHIKARI and LOVETT (2006) the results from research in Nepal showed that in the Community Based Forestry Management (CBFM), transaction costs for ensuring property rights and managing forests for avoiding free-riding incurred by well-off forest users are higher as compared to the transaction costs by poorer members. Hence, the richer members are entitled to more benefits than poorer ones based on the transaction costs they incurred. However, if "appropriation" of income is observed, poorer members have to pay higher percentage of their income than the richer counterparts. Hence, REDD mechanism may not enhance the livelihood of the poorer communities as desired, if plans are not promulgated to increase the share of benefits to the pro-poor section of the forest user groups. Hence, for successfully tackling the poverty issues from carbon trading under REDD mechanism, well defined institutional set up to share equitable benefits needs to be created. This led to the speculation that though the policy seems best in theory, in practice the objectives of sustainable livelihood development may be too difficult to achieve. Moreover, because of these issues, REDD as a policy mechanism has resulted different consequences in different countries. Thus, in this thesis, the plan is to review the cases of some Asian countries, the strengths and loopholes of the REDD mechanism, while analyzing, how REDD mechanism is worked out in case of Nepal.

1.2 Statement of the problem

According to Intergovernmental Panel on Climate Change, as cited by MANANDHAR, (2009, p. 2), approximately 1.6 billion of the global carbon emissions to the atmosphere are from Land use, Land-Use Change and Forestry (LULUCF) activities. Besides industries and transport sector, deforestation and forest degradation are major contributors of Green House Gases (GHG) emissions contributing to climate change. The annual global emission of carbon dioxide from deforestation and forest degradation stands around 20 % (MITCHELL *et al*., 2007, p. 4). The forests are depleting in alarming rate especially in tropical regions due to its direct economic benefits for people, such as providing agricultural land, providing timber and other natural resources of good economic value. But, it has to be noted that forest is both sink and source of atmospheric carbon dioxide. Hence, by avoiding deforestation and forest degradation; and through forest enhancement activities, climate

change can be eased off owing to reduction in carbon release and increase in carbon sequestration by forests.

According to PEARCE 1996 (cited in MANANDHAR 2009, p. 2), the participation of local communities is important for the success of forest conservation activities. Moreover, conservation activities can be enhanced by providing incentive to local communities, devolution of management of forest areas, ensuring good land tenure rights to locals and by maintaining good governance (ELIASCH 2008). Hence, to preserve forest and forest resources for reducing CO_2 emissions, the REDD mechanism under UNFCCC is initialized, recognizing the aforementioned needs for success. And, the REDD mechanism plans to give incentives to the communities or local people for their forest enhancement activities. Moreover, the community managed forests are also made eligible for trading carbon under this mechanism. Hence, inclusion of community forests is surely a cornerstone to acknowledge the conservation activities of communities. The fund generated from the trading of carbon under REDD mechanism in turn can be used for improving the livelihood of local communities, and on the foresight, conservation activities can help reduce natural disasters, conserve biodiversity and enhance forest carbon stock. Hence, for capturing the benefits of carbon trading through REDD mechanism, number of countries around the world including Nepal has been working for REDD+ readiness process through projects direct or indirectly supported by UNFCCC (DANGI and ACHARYA 2009, p. 10). All the countries under UN-REDD programme are implementing REDD+ activities.

REDD proposed as fresh way to tackle climate change and deforestation, untapped by other policies from Kyoto Protocol is full of promises. REDD mechanism supposedly has an indirect objectives such as reducing poverty incidence, improving livelihood of locals (e.g. changing to sustainable energy consumption pattern) and maintaining biodiversity This will be difficult to achieve due to lack of strong institutional setup, such as tenures ensuring legal rights and benefits for indigenous and disadvantaged communities, having good governance set up, which are prerequisite for the success of REDD. Likewise, most of the developing countries including Nepal lack adaptive and flexible policies (LAMSAL and BHANDARY 2009) hindering the involvement of relevant stakeholders leading to underachievement and sometimes failure of the program. It is important to identify what is adequate and what is lacking in the forest policies and national regulatory framework.

Likewise, there is a need to identify and study the institutional strengths and weaknesses (LAMSAL and BHANDARY 2009, p. 84) for successful implementation of REDD.

It has been observed that having well defined property rights tenure is important for improving livelihood of poor people relying upon natural resources (DI GREGORIO *et al*. 2004). Many forest management programs have not been able to succeed in their goals owing to the strong control from government and due to weak tenure rights confer to them. Nevertheless, in Nepal, participatory forest management or community forestry management policies have been more successful because of participation of local communities, though it has been criticized for not benefitting pro-poor and marginalized ethnic groups, owing to unclear property rights and benefit sharing regime. Thus, complex tenure regimes and unclear property right regimes of community over natural resources can halt the communities from reaping maximum benefits from carbon trading. In different cases, the REDD programme has drawn flaks for ignoring rights of local and indigenous communities and being inequitable in sharing benefits. Not much analysis has been done on institutional set up that can ensure equity levels among actors while sharing benefits. Likewise, unstable political and governance situation in the developing countries such as Nepal – a country still in transition phase after a decade of civil war can negatively influence policy formulation and implementation of REDD.

Community Managed Forests, in the countries like Nepal have been successful as people fulfill the needs of fuelwood, fodder; timber and Non-timber Forest Products (NTFP) in return of their forest management work (KARKY and SKUTSCH 2010). In many countries, REDD programme has brought Community Based Forest under carbon trade regime. For REDD to be successful under community forestry regime, the revenue generated from carbon trading should be more than the revenue generated from use of forest resources such as fuelwood, fodder and other Non Timber Forest Products. But, it is difficult to calculate the cost and benefits associated with REDD mechanism for Community Based Forest Management. Nonetheless, as observed from case study in three community forests of Nepal, if the revenue of sequestering carbon is greater than revenue from use of forest resources, then only REDD can be successful.

Moreover, in Nepal, carbon trading concepts and policies are in inception phase. Nepal, contributes <0.1 % of carbon emissions of the world. Nevertheless, more than 75% of

Nepal's sources of emission are due to deforestation and degradation. Nepal have 29 % of forest covered land, so benefits from carbon trading is important as it can considerably contribute in mitigating the impact of climate change and benefits could be used for community development through sustainable forest management.

1.3 Objectives

The main objective of this study is to finds pros and cons of institutional arrangements associated with the REDD mechanism and potential ways of its effective implementation in Nepal by analysing the experiences from other countries. For this, the lessons learned from REDD mechanism across the Asia and other countries is taken into account focusing on the land and forest tenures and benefit sharing arrangements among the local communities involved in management of community forestry. More specifically, the objectives can be delineated as follows:

i. To assess the institutional preconditions and factors that can affect REDD outcomes in Asian case,
ii. To identify the factors affecting the performance of REDD+ in the selected countries,
iii. To review the institutional preconditions affecting the REDD implementation in Nepal in pretext of previous cases from other countries
iv. To identify and analyze the issues from cases of other countries with REDD+ in Nepal and to analyse future of REDD in Nepal.

1.4 Limitations of the study

The thesis is based on literature review, information collected from various sources including experts and an interview of a policy analyst. No primary field level information has been used. The various issues discussed have been published in magazine, bulletin, blogs, newspaper, so there is a risk of information used being biased. The selection of cases from various countries is purposively done based on the availability of the information. The limitation on time and content permitted the discussion of limited issues only, due to which, all issues on REDD+ affecting the social outcomes cannot be covered. The generalization cannot be made based on the lessons learnt from the cases discussed in the present study as

institutional diversity exists from region to region or even within same region due to difference in rules in use and community attributes.

2 RESEARCH METHODOLOGY

This chapter focuses on the type of methodology used to conduct research. It elucidates the way research has been planned; explains the kind of sources of information used for thesis; and discusses how the topic of research is analysed. Hence, research approach and strategy is described in this part.

2.1 Research strategy

The qualitative and exploratory research method is used for this study. The study attempts to envisage the implications of REDD+ on various communities under diverse institutional settings and how these settings can affect the outcomes of REDD+. The qualitative approaches help to study the issues in their natural settings, which is interpreted by individuals or groups using their own experiences. On the other hand, exploratory research is good in identifying and defining unclear problems and also helps to gain insights about these issues.

The present study is an exploratory in a way that it plans to gather information about existing institutions which can have profound effect on outcomes of REDD mechanism.

2.2 Sources of information

The thesis is based on the information gathered through extensive literature review from various sources such as websites of RECOFTC, Rights and Resources Initiative, International Union for Conservation of Nature (IUCN), newspaper, journal articles, reports, books etc. Hence, secondary information is used for research.

Also, insights from experts from the forestry sector of Nepal are taken, through interview with the help of checklist.

2.3 Research outline

The thesis uses modified Institutional Analysis and Development (IAD) framework to analyse the REDD+ policy and factors influencing its outcomes in various institutional set up. The modified IAD is identified and used as an appropriate conceptual framework to analyse the institutional preconditions, rules in use, physical and community attributes influencing the outcomes of REDD+ schemes. The various aspects of IAD framework is

described and is used to create the suitable conceptual framework for the analysis of REDD+ in Chapter three. Then, cases from Indonesia, Cambodia, Vietnam, and Lao PDR are analysed to get insights of institutional conditions required for and affecting the REDD+ experiences in these countries in Chapter four. The analysis is done on the basis of modified IAD framework. The analysis of situation of Nepal in pretext of REDD+ situations of other countries is done on Chapter five.

2.4 Research Questions

The thesis will try to envisage the following questions in research based upon the information collected from the literature:

- What institutional preconditions and factors affect the outcomes of REDD in selected countries?
- What are the reasons of non performance of REDD mechanism in many countries?
- What will be the difficulties (technical, institutional and socio-economic, political) in implementation of REDD+ initiative under community managed forestry system and how it should be tackled for its impact on livelihood improvement?
- Has Nepal taken into account the failures from other countries and incorporate good institutional set up for making REDD+ mechanism work?
- What is the feasibility of REDD+ in Nepal?

3 THEORETICAL AND CONCEPTUAL FRAMEWORK

The management of natural resource is highly influenced by property rights regime and participation of people. In the thesis, forest tenure rights, governance structure, the patterns of interaction among various stakeholders and equity aspects of benefit sharing that affects management of natural resources in Reducing Emissions from Deforestation and Degradation plus (REDD+) zone is assessed using relevant theoretical background and conceptual framework. Besides reducing deforestation and degradation to alleviate carbon emissions, REDD+ programme plans also to tackle the issues of poverty and rural development. For fulfilling these objectives, operational challenges, institutional and governance challenges should be sorted out with help of suitable framework (SCHERR and STHAPIT 2009).

The modified Institutional Analysis and Development (IAD) framework is used to identify and analyse the elements and their relationship with each other with in institutions that influence the outcomes of REDD+ programme (OSTROM 2005; DI GREGORIO *et al*. 2008) in terms of livelihood improvement. In REDD+ programme, common property resource management is the key concern. Hence, understanding institutions is very important as they determine access to resource and make management system works (JENTOFT 2004; AGRAWAL and GIBSON 1999, cited by BAJRACHARYA 2008, p. 42), which can be done with the IAD framework. Before the explanation of IAD framework, important concepts such as poverty, institutions, common property rights, and collective action are explained.

3.1 Important concepts

3.1.1 Poverty

Poverty has been defined by United Nations as "a condition when individual is deprived of resources, capabilities, choices, security and power in sustained or chronic manner making them incapable to - maintain adequate living standard and practice civil, cultural, social , economic and political rights" (UN 2001) leading to capability deprivation (SEN 1999, p. 85). Poverty describes the current status of an individual with regard to attainment of a critical level in a dimension like income or nutrition. Poverty is a relative term as the definition of poverty is different for different socio-economic systems (DI GREGORIO *et al*.

2008, p. 4). Hence, it is important to distinguish relative and absolute poverty. Relative poverty deals with the inequality within societal units and its consequences; and it may differ from society to society where as absolute poverty is same for all countries and take into account basic needs (food, shelter and clothing) (LOK-DESSALLIEN **1998).** The identification of different strata of poor is important to address the equity aspects in favour of poor while working on REDD++ programme. Being poor, make people unable to fulfil basic needs, reduce the access to and control over the use of resources, resulting in social and political exclusion. It also makes them more vulnerable to the shocks and stress as they are not highly resilient against stress such as natural disasters, market risks, and socio-political instability (BARRETT and SALLOW 2004; cited in DI GREGORIO *et al*. 2008). Hence, to take poor out of the poverty trap, relationship dynamics should be changed, or more power should be given to poor through capacity building through training, sensitization activities, technology transfer, creating base situation for collective action and so on. Moreover, to achieve the goal of livelihood improvement leading to poverty alleviation through REDD mechanism, the concept of poverty should be well understood. The community forests under REDD are managed by Community Forest User Groups, whose members are diverse according to status (caste, income, education), social capital, power, capabilities, and knowledge. Those who have less of these things are more vulnerable to shocks, risks (financial, natural, physical), and are categorized as poor. Since, these people have less asset endowment; they will have difficulty to move out of this poverty trap. Therefore, while working on programme, the proper identification and inclusion of these deprived groups should be of key concern.

3.1.2 Tenure/Property Rights

Tenure/property rights help to regulate access and use of resources through various rights, rules, regulations and institutions (COTULA and MAYERS 2009). Property rights have been defined in various ways. However, for the domain of natural resource, Bromley's and Ostrom's definition is widely accepted. BROMLEY (1991 p. 15) defined property rights as a right to a benefit stream for an entity or group, only if other members agree to the protection of that stream e.g. Trademarks, copyrights, patents etc. Hence, property rights are a claim on benefits stream upon which others dutifully agrees. To have rights, does not imply that one can have sole authority to decide on use of properties according to one's

own wish. There are five main kinds of property rights that are appropriate with respect to common pool resources (CPR): access, withdrawal, management, exclusion, and alienation (SCHLAGER and OSTROM 1992, cited in ATZENHOFFER 2010; OSTROM and HESS 2007, P. 52-53).

Access: The right to enter a defined area (e.g. right to enter community managed forest) and enjoy non-subtractive benefits,

Withdrawal: The right to extract resources, benefits etc. from common pool resources,

Management/Participation: The right to decide on modifying resource use patterns or transforming resources to improve conditions of common pool resources (e.g. by restricting harvesting of healthy branches or allowing to harvest only dry and dead branches),

Exclusion: The right to determine the access, withdrawal and management rights of the others and how to transfer these rights,

Alienation: The right to sell, lease, exclude or gift resources

Forests are also a kind of Common Pool Resources, governed by forest tenure. Our major focus is forest tenure. Forest tenure is similar to other tenure rights in a way that it also restrains or liberates the use of resources (forest resources) for group or individual under certain conditions. Even for REDD+, tenure rights of forest is important (GRIFFITH 2007; PESKETT *et al*. 2008) as increasing tenure security can help in creation of direct benefits or increase claim over different bundles of rights for local communities especially poor ones. Nonetheless, it is also important to understand the property rights as bundle of rights (OSTROM and HESS 2007, p. 53). For instance, Community forests are mostly a government property but communities have the rights to use, manage, and distribute benefits extracted from these forests. Moreover, the group can decide to sanction or alienate the one who does not abide by the rules of Community Forest Users Groups (CFUGs). Despite having all these aforementioned rights, the groups can not sell the forest land or use it on the individual interest basis. Hence, the type of property rights influence the way of governance of resources under Community Based Forest Management (CBFM) regime (DI GREGORIO *et al*. 2004, cited in BAJRACHARYA 2008, p. 52). Moreover, Community Forests under REDD regime have to restrict the harvesting of forest resources, and manage forest resources more cautiously than when they are only under CBFM regime so as to increase

carbon stock. But, for many indigenous groups and poor local communities, forest provides food, fibre, fuelwood and many other things. Nonetheless, it is important to ensure the secure rights of these people on forests; otherwise they will again fall in the vortex of abject poverty. Meanwhile, exclusion of the locals from forest management regime or giving them less rights may lead to conflicting situation and later on failure of the forest management regime under REDD project. Hence, the forest tenure should have properties of excludability, duration, assurance and robustness (FAO 2007 cited in YEANG 2010, p. 12). Excludability permits the people with rights to exclude the people without rights from using forest resources. The forest user groups or communities will participate actively, only if they are assured of the forest rights for sufficient duration so as to reap adequate benefits. This assurance helps to institutionalise the rights to enforce. While managing forest resources, it is also important to delineate the type and strength (or robustness) of the rights to be possessed by communities. These key features help to demarcate the level of forest tenure rights and to determine who gets what and how much of benefits from forest ecosystem services. Moreover, the well defined forest tenure rights help to shape-up the social identity, personal or household security of the local communities and also to preserve the cultural heritage of indigenous or tribal groups (SUNDERLIN *et al*. 2008; cited in YEANG 2010), eventually providing a kind of incentive for success of various forest management programmes including REDD+.

3.1.3 Institutions

Institutions are the set of rules, conventions and norms to regulate action of an individual or group (OSTROM 1990; NORTH 1990; BROMLEY 1989, cited in HAGEDORN 2005; HODGSON 2006). Institutions can liberate and restrain individual or group action through rules and sanctions (BROMLEY 2006, p. 32). Institutions are either formal or informal (OSTROM *et al*. 2002, cited in BAJRACHARYA 2008). Formal institutions are represented by legal rules and sanctions (e.g. Community Forestry Policy, regulatory mechanism for REDD) where as informal institutions include social norms and social networks devised and nurtured by members of the communities (NEE and INGRAM 1998, cited in BAJRACHARYA 2008, p. 42). The institutions differ according to the situation and place (OSTROM 2005), and plays key role in governing common pool resources (CPR) by formulating rules and incentives for people to act in a certain manner (GERRARD 1998; cited in BAJRACHARYA 2008, p. 42).

Hence, to understand the functioning of Common Pool Resources (CPR) such as community forests; the ongoing social processes and governance mechanism prevalent in these institutions should be understood (KLOOSTER 2000, cited in BAJRACHARYA 2008, p. 42), which will in turn help in modifying or devising new rules for carbon enhancement and poverty alleviation under REDD. The institutional factors related to forest tenure rights, socio-cultural conventions and governance structure influence the achievement of co-benefits of REDD+ (forest carbon stock enhancement and livelihood improvement of the poor).

3.1.4 Collective Action

REDD+ mechanism plans to address the issues of deforestation and forest degradation, and improvement of rural livelihoods through collective forest management. The group of individuals or communities work together to enhance forest carbon stock by delineating the amount and type of resources to be harvested or planted; and to improve livelihood through sharing benefits derived from resources equitably in collective forest management – a collective action. Hence, collective action is "actions of a group of individuals working together to pursuit and achieve the perceived common interests" (MARSHALL 1998, cited in DI GREGORIO *et al*. 2008).

3.1.5 Community Based Forest Management

At old times, the forests were owned and managed by local communities. Especially for indigenous and poor rural communities, forest is still of high importance to fulfil their needs of food, fodder, and fuelwood. However, many of the forests were converted to the state property, depriving them from the previous rights to use forest resources (MOLNAR *et al*. 2011). The insecurities among local communities, due to lack of tenure/property rights, lack of appropriate institutional settings led to high rate of deforestation (POKHAREL and BYRNE 2009). Hence, Community Based Forest Management (CBFM) was promoted as policy mechanism to counteract high rate of deforestation in developing countries by involving local people, especially after Rio Earth's Conference in 1992. The conception of CBFM, however, started in 1978, during the Eighth World Forestry Congress, which was themed "Trees for People" (TAKU TASSA 2010, p. 17). CBFM is a kind of collective action for management of state owned or own forests, where all stakeholders of forest community

come together to improve local livelihoods, through decentralisation and devolution of governance of forest resources. CBFM acknowledges that participation of local communities is vital for the successful management of forest resources (TAKU TASSA 2010, p. 16). The CBFM mechanism has been quite successful in regeneration of degraded forests in various places, which can be illustrated by the fact that around 27% of the forests are now governed by communities across the world (MOLNAR *et al*., 2011). However, they are ridiculed by many for not sharing benefits equitably and exclusion of disadvantaged groups. Similarly, even for the preservation and management of forests, communities do not get monetary benefits, making the forest vulnerable to degradation. Hence, inclusion of these forests under REDD+ regime, can be beneficial for the communities as well as forests. However, for REDD+ mechanism to be effective, technical, institutional and even socio-economic issues should be tackled.

3.2 Conceptual framework – REDD+, Community Forest Management, and poverty

The conceptual framework is used to understand and analyse factors that might influence the desired outcomes of REDD+ scheme – forest enhancement and livelihood improvement. The modified Institutional Analysis and Development (IAD) framework, a tool for institutional analysis developed by Ostrom and her colleagues at Indiana University and modified by DI GREGORIO *et al*. (2008) is used for the analysis (Figure 3.1). According to OSTROM (2005), IAD framework is used to identify key variables for the systematic analysis of the structure of the situation that individuals/groups faced and to explore and analyze how rules and nature of the events evolved and how the community is affected by these situations over time. The framework is applied to systematically analyse the case studies on REDD+ experiences in various Asian countries focusing on the REDD+ mechanism, how regulatory mechanism of REDD+ interact with pre-existing formal and informal institutions of the communities and how these interactions affect the desired social outcomes from REDD+. The modified IAD framework is discussed below.

3.2.1 Components of the Institutional Analysis and Development framework

3.2.1.1 Contextual/external factors and poverty

The contextual factors include the initial physical, technical, socio-economic and governance settings that influence the availability of opportunities for future possible actions (DI GREGORIO *et al*. 2008). These contextual factors affect the well being and livelihood strategies of the people. Physical factors include physical assets such as house, natural resources, technology and environmental conditions, where as social factors include social structure, social relationships, social norms; and economic factors include production, pricing and market systems, policies that can affect the amount, type of return on assets. Likewise, political and governance settings changes the institutional structure by governing the patterns of interaction with certain kind of rules (DI GREGORIO *et al*. 2008).

Therefore, we can extrapolate that due to the lack of adequate physical and capital assets, the poor will not be able to invest for better future outcomes (DI GREGORIO *et al*. 2008). The inability to access or accumulate these assets for poor will increase their vulnerability towards shocks and risks making them fall into vicious poverty trap. Also, poor have insecure tenure rights, so even if they have capital to invest, they will not invest due to uncertain tenure rights. Hence, well defined property rights arrangements are important for poor so as to be out of vulnerable position. The property rights arrangements can be possible only through use of proper legal and political structures that will give them power to use the properties, which will in turn help in improving asset endowments of poor people. Likewise, societal norms and rules also affect the person's capability to tackle with risks and shocks. The poor people do not have adequate tangible (financial resources) or intangible assets (social capital, networks, power) and due to their incapacity to invest more, they eventually reap lesser benefits than the rich communities. Hence, access to or accumulation of one asset will lead to accumulation of more assets in future. For poor, who have very less physical assets, it is important to gain social capital through collective action, as collective action can help the poor to gain access to other assets. For example: If poor farmers become a member of saving group, s/he can have access to the formal credits and if one become member of Community Forest Users Group, one can have access to benefit stream through use of natural resources.

3.2.1.2 Action arena

OSTROM (1998) defined an action arena as the set of the variables that contains actors, action situation, working institutions (rules and regulations in the form of property rights), and contextual factors (physical, social, economic and political). Besides these, collective action and cognitive schemata also influences the action arena. In the action arena, actors interact or work together with in certain set of institutional rules to derive solutions to common problems, achieve desired outcomes, or transact goods or services.

In this thesis, the focus of discussion is the action arena. In the action arena, actors (groups or individuals from different strata (governments, Community Forest Users Group, implementing agencies, partner organizations) come together and follow rules set by the formal and informal institutions (operational and regulatory mechanism of REDD+ and community forestry user groups) to upgrade forest carbon status, preserve biodiversity and alleviate poverty. However, it has to be noted that interaction or collective action among different actors is complex as each of them have different preferences, capabilities, power, information processing ability and knowledge and comes from different contexts (DI GREGORIO *et al*. 2008). The one with more information or social network and power can gain more in the social interaction process. Similarly, cognitive schemata, which helps to visualize what is feasible and what is infeasible for the actors also affect the patterns of interaction. The interaction between social conventions and rules also plays a vital role in shaping up the patterns of interaction or action situation in an action arena.

3.2.1.3 Outcomes and their evaluative criteria

The patterns of interaction in action situation affect the outcomes of the project or any activity. In the thesis, the plan is to analyze the negative or positive outcomes derived due to interaction of forest tenure rights designed by communities, collective action of various actors (members of community forest user groups, implementing organizations of REDD - governments, non-governmental organizations, local groups) within the physical boundary of community forests, where REDD+ is being implemented. Hence, secured tenure/property rights and collective action can have impact on the outcomes by reducing the vulnerability to social, natural, political or economic risks (DI GREGORIO *et al*. 2008). Hence, in the action arena, actors interact, discuss, cooperate, challenge, and negotiate to

devise new rules or modify old ones to share, manage or exchange resources, which in turn shape up the desired outcomes. Moreover, we will observe how tenure rights, collective action and other institutional set up while implementing REDD+ initiatives, would affect the outcomes of the project as these setup do constrain, allow and affect the outcomes. Outcomes is evaluated in terms of sustainable forest management and equitable benefit sharing among actors, livelihood improvement of poor, increasing decision making capacity, empowerment, and social inclusion of disadvantaged group. The direct outcomes from activities to reduce poverty can be evaluated on the basis of indicators such as results of comparison of present and past situations of poor in terms of vulnerabilities to shocks and risks, direction of progress towards social and political inclusion, level of income inequality, increase in capabilities etc. Since, the REDD+ initiatives are still in the initial phase, and in most of the area, economic benefits from carbon trading have yet to be distributed and remobilized for poverty alleviation, outcomes linking to economic gains, and community development is discussed in terms of the projected results.

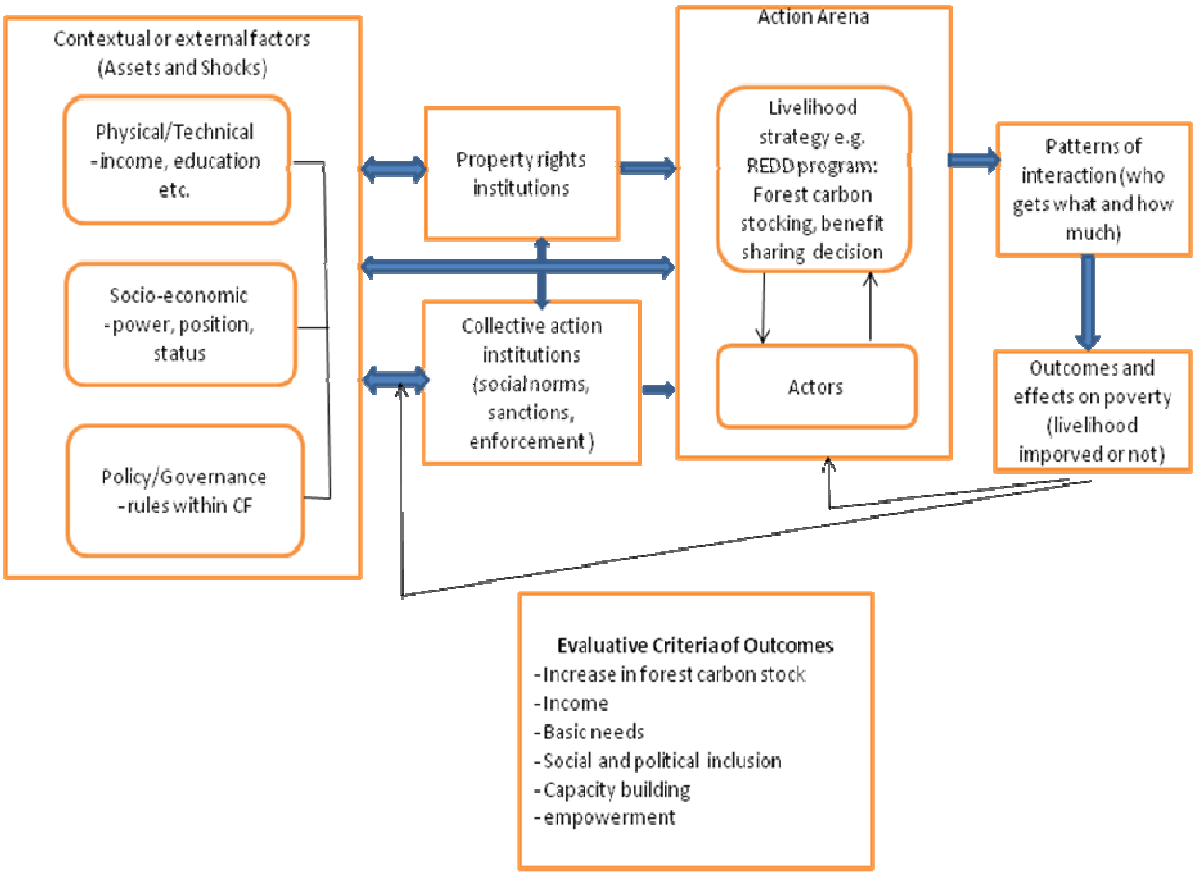

Figure 3.1 Modified Institutional Analysis and Development (IAD) Framework

(Source: DI GREGORIO *et al*. 2008)

4 REDD+ AND ITS EXPERIENCES IN ASIAN COUNTRIES

The chapter will start with description about the evolution of regulatory mechanisms of climate change leading to genesis of Reducing Emissions from Deforestation and Degradation (REDD) and path to REDD+, then modus operandi of REDD being implemented in the different countries is discussed. However, the major portion of this chapter will try to analyze and discuss the realized and potential (positive and negative) outcomes of REDD based on modified Institutional Analysis and Development (IAD) Framework.

4.1 Evolution of regulatory mechanisms for Climate Change

4.1.1 Genesis of Kyoto Protocol

Global climate have been subjected to dramatic altercations due to increased levels of CO_2 and other Green House Gases (GHGs) emissions to the atmosphere through activities such as increased use of fossil fuel for industrial purpose, deforestation and other economic activities. Climate change concerns were put forth for the first time during the First World Climate Conference (1979), held in Geneva (KARKY 2008). As the concerns for climate change increased, Intergovernmental Panel on Climate Change (IPCC) was founded in 1988 to scientifically assess the climate change process. The panel suggested the need of global treaty to tackle the climate change issues, which led to formulation of United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC was adopted during the United Nations Conference on Environment and Development (Earth Summit) held in Rio de Janerio, Brazil in 1992 as an effort to reduce green house gases (GHGs) emissions in the atmosphere and to mitigate adversity from climate change. In 1997, during the third session of the Conference of the Parties (CoP 3) held in Kyoto, Japan, UNFCCC put forth and adopted global treaty named Kyoto Protocol (KP) to battle climate change by regulating emission by setting a cap (legally binding emission targets) and allowing trade of carbon for reducing Green House Gases emissions (KARKY 2008) . For the Kyoto protocol to be effective, it had to be ratified by at least 55 Annex 1 (industrialized) countries that accounts for at least 55% of GHG emissions, and Russia was the 55th Annex 1 country to ratify the Kyoto Protocol. Hence, after the 55th country from Annex 1 ratified the protocol, Kyoto Protocol came into effect from February 2005. As of

now, 191 countries have ratified the Kyoto Protocol. The fact that Kyoto Protocol has been signed by many countries asserts it as a binding treaty among the world communities to mitigate climate change. As stated earlier, Kyoto Protocol permits regulation of the carbon trade, which led to establishment of three kinds of global carbon market namely Joint Implementation (JI), Clean Development Mechanism (CDM) and Emission Trading (ET). Among these three market mechanisms only in CDM developing countries can participate for GHG emission reductions. According to this mechanism, developing countries or non Annex I countries are provided funds for implementing CDM projects, where as Annex I countries buy the Certified Emission Reduction (CER) credits to fulfill the emission reduction criteria set by Kyoto Protocol. The details of CDM and how REDD was evolved is discussed on the next part.

4.1.2 Clean Development Mechanism (CDM)

Clean Development Mechanism (CDM) was the first initiative that created conducive atmosphere for environmental investment and marketing of previously non tangible environmental goods (UNFCCC 2011). This mechanism of Kyoto protocol permits developed countries to run emission reduction projects in a developing country through afforestation, energy efficiency or a renewable energy project that do not emit GHGs. These projects are then allowed to sell Certified Emission Reduction (CER) credits. Each Certified Emission Reduction credits was made equivalent to one tonne of CO_2 (UNFCCC 2011). These projects planned to support the sustainable development within the host country through use of innovative environmental friendly technology, and slow down global warming. Through the project, new technology is transferred to the host country, investments are made, additional jobs are created (ELVERFELDT 2010) such as through investment on alternative or renewable energy project. However, CDM allowed only afforestation and reforestation as two major categories that qualify forests as sink projects (SMITH and SCHERR 2002; cited in SHARMA *et al*. 2004). Forests to be qualified for the CDM project should have a minimum area of land of 0.5 to 1.0 ha with crown cover greater than 10% (KARKY 2008). By definition of Kyoto Protocol, afforestation is converting of the land to forests that had not been forested for 50 or more years, whereas reforestation is the conversion of previously deforested land to forest (KARKY 2008). Henceforth, the Community Managed Forests and other sustainably managed forests were

left out from CDM mechanism of Kyoto Protocol as there was uncertainty in quantifying and controlling leakage from avoided deforestation (KARKY and SKUTSCH 2010; EBELING and YASUE 2008). Thus, the CDM did not address the huge emissions due to deforestation; whereas the carbon emission from developing countries is more due to deforestation. Two of the developing countries with dense forests in the world account for half of the emissions from deforestation- Brazil contributing 25% and Indonesia contributing 23% of emissions from deforestation (BHANDARY 2009). Even in other developing countries deforestation and forest depletion due to mismanagement have been of prime concern. Due to this, the need for more practical mechanism addressing deforestation and degradation through improved and sustainable management of forest and biodiversity is felt.

To address these issues, new mechanism of carbon financing - Reducing Emissions from Deforestation and Forest Degradation (REDD) was developed during the 13th Conference of Parties (CoP_{13}) of the United Nations Framework Convention on Climate Change (UNFCCC), held in Bali in 2007 (OJHA *et al*. 2008; KARKY and BANSKOTA 2009). This carbon financing to prevent deforestation under REDD policy has been proposed under the voluntary framework of the UNFCCC, which is in its initiation phase and is being implemented since 2009 (UN-REDD 2009).

4.1.3 REDD (Reduction of emission from deforestation and forest degradation)

REDD address the major objections about avoided deforestation under the Clean Development Mechanism (CDM). It is based on the principle that developing countries that are keen and able to reduce their deforestation rate at a reference time period receive financial compensation in terms of carbon credits (LAURANCE 2007; cited in EBELING and YASUE 2008). Carbon credit transfers are based either on foregone opportunity costs or on the value of carbon market prices (UN-REDD 2009). Though emissions reduction is primary focus of REDD, it has the potential to deliver a range of “co-benefits” e.g. poverty alleviation for indigenous community near forest areas, biodiversity conservation etc. Hence, REDD is being touted not only as the tool for resolving climate change problem but also as tool for addressing social issues as it promises also to alleviate poverty, improve livelihoods of local communities and derive benefits from preserving biodiversity and generating ecosystem services.

Thus, REDD has provided a new framework to curb the trends of deforestation by bringing sustainable forest management activities under global carbon market, which previous global approaches have been unsuccessful at. The reduction in deforestation means less GHG emissions and increased markets for REDD carbon credits. However, to transform potential benefits into actual climate benefits, several critical issues need to be addressed in potential REDD policy framework. During first commitment period 2008-2013, under 'business-as-usual' scenario, the potential market for carbon credits is estimated to be 24 billion tonnes of CO_2 equivalents per annum (SIKKEMA and MC KENZIE 2001). Hence, the countries rich in forest resources can benefit from this policy. Mostly developing countries rich in forest resources can generate substantial sum of revenue in the form of carbon trading, which can be used for development of local communities and to avoid deforestation. Similarly, the REDD programme will provide help to generate revenue from standing forest, and the incentive generated through this programme will discourage further deforestation and degradation. This will help in conserving biodiversity and maintaining ecosystem services generated by these forests, thereby promoting co-benefits in developing countries (DICKSON *et al*. 2009). However, the socio-economic and political characteristics of the community, governance structure, the mode of REDD design and implementation mechanism followed will also affect the scale and identity of co-benefits (DICKSON *et al*. 2009).

4.1.4 REDD to REDD plus

REDD recognizes and addresses the issues of deforestation and degradation, and compensate communities for reducing deforestation and degradation. REDD is more about acknowledging communities for 'avoiding bad' than 'committing for good' (JOSHI *et al*. 2010, p. 12). Hence, REDD might not be beneficial for the community forest users groups (CFUGs) successfully managing the forests (POKHAREL and BYRNE 2009; OJHA *et al*. 2008; cited in JOSHI *et al*. 2010, p. 62), and might work only for the newly formed CFUGs. Hence, expert cited these issues might displease the older CFUGs as they will not be rewarded for their conservation efforts. They might end up being disenchanted to manage forests and encourage leakages (JOSHI *et al*. 2010, p. 62). The REDD might also restrict the forest tenure rights of indigenous communities (established by ILO convention 169) preventing them from using forests for sustaining their livelihoods, increasing their vulnerability situation. Moreover, forest conservation activities will not be successful unless

tenure rights of the local communities including indigenous and disadvantaged groups are preserved to sustain their livelihood (OJHA *et al*. 2008, p. 34; cited in JOSHI *et al*. 2010, p. 62).

Therefore, it is necessary to address and acknowledge the carbon stock enhancement and sustainable forest management practices besides activities addressing deforestation and forest degradation (LAMSAL and BHANDARY 2009). This led to the formulation of REDD+ regime at the 14th Conference of Parties (CoP14) of the UNFCCC held in Ponzan, Poland in 2008. In CoP 15 held in Copenhagen, Denmark in 2009, REDD+ was discussed and Copenhagen Accord was made. This accord recognized REDD+ as the one of the mechanism for reducing green house gases emissions from forestry sector. It also planned to establish the mechanism for mobilizing the funds from developed countries. REDD+ recognizes and pays not only for reducing carbon emission by avoided deforestation and forest degradation but also for increasing carbon stock and activities such as improved logging practices, prevention of forest fires, sustainable forest management (constant carbon stock over time) and afforestation and reforestation (A/R) (UNFCCC 2009; cited in BLOM *et al*. 2010, p. 165). And the payments will be made by the developed countries to the developing countries for conservation of forest and carbon emission reduction (EBELING and YASUE, 2008; cited in YEANG 2010).

4.2 REDD+ and its approach of implementation

The main idea of REDD+ is about giving financial support to the developing countries for reducing emissions from deforestation and degradation through implementation of new policies and measures (PESKETT *et al*. 2008). The amount of emissions cut off is estimated by comparing deforestation and degradation rates with baseline situation or reference scenario (PESKETT *et al.* 2008). The baseline situation depicts the situation predicted in lack of policy or measure. The baseline or reference scenario can be fixed by observing deforestation and degradation trends in history and extrapolating these into the future; "by modeling future trends using driving trends of deforestation and degradation or combining both of these methods (PESKETT *et al.*2008). In due course of time, payments would be made for per ton of emissions reduced, after verifying the emissions reduction. However, emissions reduction can be achieved only if enforcement and /or opportunity costs are covered by payments i.e. only if activities such as logging and agricultural expansion are

controlled through Policies and Measures (PAMs) that may include reward and compensation function. Rewards can introduce positive change in behavior such as sustainable forest management practices, where as compensation can help to cover the opportunity costs forgone. But, for the success of REDD+, stakeholders to be covered under either of PAMs should be differentiated (PESKETT *et al* .2008). Most of the forests in the developing countries have been the part of life of the diverse local communities including indigenous people. However, these are the people with less power, and there are chances of these groups to be left out in the process. Hence, while implementing REDD+, inclusion of disadvantaged groups who needs the forest most must be ensured along with the groups who are influential in deciding the rules and use of natural resources. Nonetheless, focus should be more on the sustainable forest management and equitable sharing of benefits than solely on carbon financing. Thus, REDD+ should cover wide range of activities than REDD, that might make the planning and implementation of REDD+ a complex process requiring greater degree of expertise and increasing the transaction costs. Likewise, situation in each country or even within different localities of the same country is diverse, and needs to be handled differently. Citing the heterogeneity among communities and localities, the three-phased approach was suggested by experts in the 2009 Meridian report for the implementation of REDD+ (IUCN 2011) as it will help the countries to be ready for implementation of REDD+ through capacity building. Similarly, if REDD+ is applied in phases, it can use both fund-based and market-based financial resources. In the forthcoming sections, REDD+ is mentioned as REDD for easiness. However, the way and order according to which these phases will be applied depends upon the situation of the site and opportunities available for funding. The phased approach generally consists of (GORDON and TAM 2010; MAGINNIS 2009)

a. Preparatory or 'readiness' phase
b. Policies and measures
c. Performance based carbon payments

a. Preparatory or readiness phase:

Participation of all kinds of stakeholders is important for the success of any programme related to management of Common Pool Resources (CPR). Hence, in this phase, REDD+

strategies are planned and designed by involving various groups including disadvantaged groups (women, disadvantaged caste group, and indigenous people. For ensuring active participation, capacity building activities are carried to prepare them and sensitize about various aspects of REDD+. Likewise, studies are conducted by governments, UN-REDD, private sector and to identify and analyse the reasons for deforestation and degradation (MAGINNIS 2009), so as to develop suitable REDD design based on problems identified.

b. Policies and Measures:

This phase focuses on instrumentalising regulatory framework for implementing REDD+ mechanism through new or reformed national policies on forest and other allied sector including agriculture. In this phase, focus is on designing instruments for implementing REDD+ without any hurdles. Likewise, the key issues such as equity in benefit sharing, carbon rights issues and issues related to distribution of benefits are to be clarified at this phase. For this, in depth understanding of regulatory framework, instruments for implementing REDD+ is needed, training activities focused on different ideas are to be conducted. In this phase, pilot programmes would be implemented to have better understanding of Measurable, Reportable and Verifiable (MRV) emission reduction system, results on actions of REDD+ and the effectiveness of the participation of different groups (MAGINNIS 2009).

c. Performance based payments:

The activities such as reducing deforestation and degradation, and managing forest sustainably help in to increase carbon stock and reduce emissions of Green House Gases (GHGs), which under REDD+ mechanism deliver monetary payments. Hence, in this phase, communities would be paid for their activities. Likewise, monitoring and auditing mechanism to foresee the activities would start working. Also, mechanisms to develop the way to share the benefits from carbon trading in inequitable manners would be implemented.

Till June 2011, thirty-five countriesfrom Africa, Asia-Pacific and Latin America have adopted REDD+ mechanism, which are under various phases of implementation (UN-REDD 2011). In all these countries, REDD+ strategies is being implemented under assistance of UN-REDD programme, by assisting the countries in formulating and implementing

REDD+ strategies collaborating with Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). In 13 countries (Bolivia, Cambodia, Democratic Republic of the Congo (DRC), Ecuador, Indonesia, Panama, Papua New Guinea, Paraguay, the Philippines, Solomon Islands, Tanzania, Viet Nam and Zambia), UN-REDD programme supports directly to the National Programme of the countries, where as other countries are getting indirect support from UN-REDD programme by gaining observer status in programme's policy board, through participating in regional workshops, and through online networking. Also, the Forest Carbon Partnership Facility (FCPF) was set up during the 13th Conference of the Parties (CoP 13) to support the developing countries to reduce carbon emissions from forest sector by valuating the standing forests in monetary terms (GORDON and TAM 2010). . Hence, both developing and industrialized countries in coordination with the World Bank are working together for creating the system of giving incentives for REDD+ and also to build the capacities of developing countries. For getting better outcomes, the situation of various countries should be taken into account. According to forest cover and deforestation rate, countries are categorized into five different groups– countries with highest forest cover and low deforestation rate, countries with highest forest cover and medium deforestation rate, highest forest cover and high deforestation rate, medium forest cover and medium rate of deforestation, and, low forest cover and low rate of deforestation (PARKER *et al*. 2008). PARKER *et al*. (2008) stated that the categorization of the developing countries help to analyse the drivers of deforestation and also helps to understand the situation of the countries and how the situation affects the outcomes. It also helps to develop strategies of REDD+ suitable to local situation. In the section below, we will try to analyze cases from the selected Asian countries to study the socio-economic implications of REDD+ mechanism to the members of community forests user groups or communities. In Asia, Cambodia, Indonesia, Vietnam, Thailand, the Philippines, Lao PDR, Nepal and Vanuatu are already implementing REDD+, whereas Pakistan, Srilanka, Bhutan and Bangladesh are recent entrants to the programme.

4.3 REDD+: Experiences, lessons learnt and outcomes

The experiences of various countries on REDD+ is analysed using modified IAD framework to study how the initial contextual factors affect the outcomes of REDD+, how

the implementation process and outcomes of REDD+ mechanism is affected by governance structure and other institutional arrangements prevalent on forest communities and how benefits are shared among communities. Likewise, the observed and possible outcomes of REDD+ addressing the co-benefits of sustainable forest management; carbon stock enhancement and livelihood improvement are also reviewed. As the REDD+ mechanism is still in its implementation phase, many countries have yet to receive monetary benefits for forest carbon stock enhancement; and those forests communities which have received payments have yet to reap benefits for investing in livelihood improvement of forest communities. Hence, many of the outcomes of REDD+ are yet to be realized and can only be anticipated. The analysis is based on the findings reported from various literatures.

Contextual factors

They are the preconditions that can affect REDD+ mechanism. The initial contextual factors includes socio-economic status, power, position and status of various stakeholders or members of the forest communities, including physical and technical characteristics such as the education level, cognitive schemata, level of knowledge about the issues

Property rights and collective action institutions and implication on REDD+

In this section, the kind of formal and informal property rights and the collective action institutions in the REDD+ areas are described and their effect on the outcomes of REDD+ are observed and analysed.

Property/Tenure rights

The vulnerability situation of the poor can be reduced by increasing secured access to the various resources including forest resources (DI GREGORIO *et al*. 2008, p. 17). However, the meaningful access to and control over the resources are also dependent on reformed institutional mechanisms (legitimized and clear forest rights); and transfer of power (TAN *et al*. 2008a); which can differ from situation to situation. Otherwise, insecure tenure rights can lead to deforestation and forest degradation (WESTHOLM *et al*. 2011). Nonetheless, reforming or introducing new tenure arrangements are a complex process, as there is no optimal design for implementation of tenures successfully. According to situation, the reform or introduction of new tenure arrangement should be made, as it is important precondition for any kind of Common Pool Resource (CPR) management. Even, the

UN-REDD and the Forest Carbon Partnership Facility (FCPF) that works for implementing REDD+ consider tenure reform as important precondition for its success. The secured tenure rights can be instrumental in controlling deforestation and forest degradation leading to sustainable forest management. It can also help in maintaining equity while sharing benefits from carbon trading (WESTHOLM *et al*. 2011, p. 1; HEIL, 2010). However, forest tenure reform does not guarantee the improvement in forest conditions and improvement in livelihoods (DAHAL *et al*. 2010; WESTHOLM *et al*., 2011). ELISACH (2008, p. 193) envisaged that REDD might give rise to new conflicts about resources owing to rise in value of forest and lands due to foray into carbon market (SAVARESI and MORGERA 2009, p. 18, cited in HEIL 2010, p. 6).

4.4 Forest property/tenure rights institutions in Asia: Implications to REDD+

In Asia-Pacific, 68% of forest is governed by government, where as only 25% forests are governed by communities and indigenous groups (RRI and ITTO 2009, cited in WESTHOLM *et al*. 2011 p. 5). Likewise, FAO (2007) reported that in South and South East Asia, where more than third of world population resides, 67% of forests are governed by central governments, 12% by regional or local governments and 7% by villages and municipalities, 6 % by public bodies, and 8% are owned by private individuals, industries and local communities. Of this 8 %, less than 1% forest is owned by local and indigenous communities. These tenure arrangements might be responsible for highest forest carbon loss in Asia-Pacific region as compared to other regions. Nevertheless, the area under Community Forestry Management varies from countries to countries. The countries such as Lao PDR (52%), the Philippines (39 %), Vietnam (24%) and Nepal (20%) have considerable land under the community forest management, where as Cambodia and Thailand have around 1% and Indonesia have less than 1% of forest under community forest management (WESTHOLM *et al*. 2011). Meanwhile, tenure rights are being reformed and emphasis is being placed on securing the tenure rights of the local communities (RECOFTC 2009). Hence, for fulfilling the REDD objectives, tenure rights should be reformed giving way for more flexible and secured property rights arrangement for local and indigenous communities.

In this section, the kind of formal and informal property rights and the collective action institutions in the REDD+ areas are discussed and their effect on the outcomes (real and

expected) of REDD+ is observed and analysed, citing the cases from Asia. The cases below are also referred to describe various components mentioned in the modified IAD framework.

According to TAN *et al*. (2008a), the study on two provinces of Vietnam - Dak Lak, where Forest Land Allocation (FLA) to local communities took place and all forests were under official Community Forestry Management; and Thua Thien, where both government introduced (study of four groups) and traditional (study of two groups) Community Forestry Management were practiced the differential experiences were observed which can affect the REDD+ outcomes, as both of these areas are under REDD now. In Dak Lak and Thua Thien, formal tenure arrangement gave secured legal forests rights to the people, but when inflexible state policies were applied by the authorities, people preferred not to engage in collective action as they did not feel the sense of being a part of these regulations. Also, state led regulations did not give them much right to control the encroachment of forests by outsiders. This led to increased deforestation in that area as they compete with outsiders for forest resources, and each wanted to reap the maximum benefits. But, in two communities of Thua Thien, where locals devised their own forest conservation regimes, though property rights were informal, the locals were complying with regulations and were also playing key role in deciding management procedure and rules to sanction misuse of forests as they felt the sense of belongingness to these rules. However, it was also observed that since benefit sharing among communities was not worked out by government, in most cases, arrangements of benefit sharing did not adequately support the poor households, also owing to labor crunch and lack of investment capability in Thua Thien.

Likewise, the study of forest tenure situation in Dak Lak and Hoa Binh of Vietnam showed following results. The results observed were based on the research done by TAN *et al*. (2008b) for RECOFTC and the Rights and Resource Initiative. In Hoa Binh province, 79% of forest lands were managed by individual households, where as in Dak Lak province, local have rights on only 3% of the forests, and state actors hold 96% of the forest area. Most of these forests are managed by the local communities though having limited control over forests. The individual households managed the part of the forests in Hoa Binh, where as locals managed the forests collectively in the Dak Lak province. But, when Forest Land Allocation (FLA) policy was introduced, these communities react differently. FLA in Hoa

Binh has been implemented in haphazard manner without any consultation with locals, confusing them; and where as in the Dak Lak province, the FLA was implemented with some modification to suit local conditions, and had also provided the people with rights to the forest. The people from Dak Lak were given support from the outside to manage the forests under new system. In the national level and even in Dak Lak province, the programme was successful where as in Hoa Binh, the FLA policy could not impart positive impact owing to lack of technical backstopping by governmental and non-governmental organizations.

Similarly, the case from a REDD+ pilot project in Oddar Meanchey in Cambodia showed that forest protection efforts were fruitful when local forest based communities have secured, long-term well defined forest tenures or property rights and access to forest resources (YEANG 2010). This was helpful to develop a sense of forest ownership and a greater commitment towards conservation activities and fulfilling REDD+ objectives, according to YEANG (2010).

As reported by (GOLDTOOTH 2010) and (LANG 2010), in Papua New Guinea, reports have surfaced that governments and companies forced indigenous people to sign away the carbon rights from the forests. In 2009, the television programme about Australian carbon traders in Papua New Guinea was broadcasted in SBS television. In one of the programmes, Abilie Wape, the leader of the land holders of Kamula Doso, belonging to Ogiek indigenous group stated that the contracts were forcibly signed for carbon rights at gunpoint. However, in July 2010, magazine named the Post Courier reported that the television network bribed the leader to blame the government, which has been denied by the television network. Many experts believed that the local leader was pressurized by REDD+ implementers to revoke the statement.

Moving to Indonesia, a country characterized by high forest cover and high deforestation rate. Here, the forest occupies 69% of the land and majority of these forests are defined as State forest (WESTHOLM *et al*. 2011, p. 22). The forests are categorized as state property if no claims are made to the forests by groups or individuals. This approach led to classification of all the village and community forests under state forests category, though managed by communities traditionally. In Indonesia, 100 million people are dependent on forest (categorized as state forest) for their livelihoods, of which 40 million are indigenous

people. Due to the categorization as state forests, community managed forests in Indonesia have highly insecure tenure rights and the chances are high that co- benefits from REDD+ would not be delivered to the local communities (ANGELSEN 2008, p. 115). Unclear tenure system had led to conflicts at many places (HEIL 2010, pp. 24-27; cited in WESTHOLM *et al*. 2011, p. 21) hindering REDD+ implementation. The most prominent case being the REDD+ trial project under Australian-Indonesian Forest Carbon Partnership being implemented in Central Kalimantan of Borneo, which have drawn flaks for not respecting the indigenous property rights from technical and social scientists,and locals including indigenous communities (LANG 2011; MACEY 2010). It has been reported that indigenous communities in Central Kalimantan are protesting against REDD+ fearing the conflict among the locals (SIMONARA 2010). It should be noted that Kalimantan region in Indonesia is the largest contributor of green house gases emission from illegal logging, forest fires and the drying of peat swamps (MACEY 2010). And, indigenous group claimed that in the area, the Malaysian Oil Company and even the subsidiary of the Norwegian government (one of the REDD partner in the country) and Australia are the one clearing the forest for oil palm cultivation and for timber in Kalimantan region emitting green house gases. The indigenous communities also feared that they would be driven from the forest; which they had been managing and where they had lived for hundreds or thousands of years after REDD+ implementation (LANG 2011). The REDD+ deals ignored their rights to access forest, though it sounds quite good and pro-poor oriented in paper (MACEY 2010), as in the name of environmental protection cultures are being destroyed and communities cannot use the forest for traditional hunting, sustainable harvesting, farming and spiritual practices (MORGAN 2010). The communities are still ignorant about the REDD+ and its co-benefits. Also, the Indonesian forestry sector is one of the highly corrupted sectors with very weak governance (BUTLER 2010). With insecure tenure rights, weak governance, and uncertainty in having share on co-benefits derived from REDD+, the participation of people in the conservation activities cannot be expected as the incentive for investing time for forest conservation is very less (DI GREGORIO *et al*. 2008, p. 14) that may lead to failure of the programme. However, it is worth mentioning the commitment of Indonesian government at a global forestry conference in Lombok on 12 July, 2011, where it vows to prioritize forest communities' need and to recognize, respect and protect the traditional forest rights of the communities (RRI 2011).

4.4.1 Interpretations of the results

REDD+ is also related with governance arrangement affecting the forest management activities. Therefore, the outcomes derived from different cases while doing research on forestry sector in Bolivia, Ecuador, India, Nepal, and Uganda by the International Forestry Resources and Institutions (IFRI) research programme (GIBSON *et al*. 2000),using Institutional Analysis and Development (IAD) framework is still relevant and can be compared to understand the analyze the situation and outcomes after REDD+ implementation. Ostrom and her colleagues were involved in the International Food Policy Research Institute (IFPRI) case study and analysed local forest governance, management and institutions. After analysis of the cases, they found that forest conditions within the similar ecological zones react differently to the same national policy (GIBSON *et al*. 2000) owing to varying socio-economic and political settings.

Majority of forests communities within the same geographic region are diverse. The case of Dak Lak and Hoa Binh reported by TAN *et al*. (2008b), where same forest law resulted positive outcomes in one and negative in another; is an example how social settings that includes existing tenure rights, group dynamics and benefit sharing mechanism of the actors interact differently with same national law in similar settings. The IFPRI study also concluded that for the successful enforcement of new policy mechanism or reformed policy mechanism, consent of local communities is foremost, only then rules are internalized (KOONTZ 2003). The REDD in Kalimantan region of Indonesia were not able to get consent of indigenous communities leading to the non compliance of the local actors to the REDD mechanism in the area, because of insecure tenure. According to CORPUZ and TAMANG (2007, p. 9), "global warming – a social and environmental problem has become a business venture creating opportunities to gain new property rights, assets and path for capital accumulation" at the cost of rights of indigenous peoples. The Papua New Guinea case, seems to point that the REDD mechanism is also becoming business venture which is indifferent to the sufferings of the local indigenous groups. At least, local groups are organized in Indonesia to protest for their rights where as in Papua New Guinea, it seems these people have lost voice, power to decide, and their tenure rights are being revoked in the name of carbon trade.

4.4.2 Person reflection on tenure rights as preconditions for REDD+

From the cases discussed above, we can conclude that property rights are important for implementing any kind of forest conservation policies including Reducing Emissions from Deforestation and Forest Degradation (REDD). Taking into account, the case of Vietnam, where establishment of formal property rights such as with Forest Land Allocation, in the areas that already have established informal property rights, and in the areas, where no formal property rights existed resulted in different outcomes. In the Dak Lak region, where no initial formal tenure rights was there, the collective action was increased and forest conservation activities were fruitful, whereas in the Hoa Binh case where formal property rights contradict with the traditional tenure practices, the new tenure system did not work. Therefore, it is important to respect the informal property rights regime while reforming or applying new policies, and in many cases informal property rights are the rules of the game, ignoring it can cost a lot for a programme. Likewise, in the areas where no formal or informal tenure mechanism exists, it is important for the state to create conducible environment by formulating new policies taking into account the interests of the local and indigenous communities as in Dak Lak Province. Moreover, there is heterogeneity in the methods of governing tenure rights in different regions, and understanding of the prevalent tenure rights of the particular region is important before reforming or changing property rights regime. For implementing REDD successfully, secured and clear tenure rights of forests are important to enable the locals to invest their resources in saving the forests from degradation. In general, poor people or communities have very insecure property rights, as insecure tenure rights give little scope for investment and reduce the chances of reaping benefits. Hence, to derive the positive outcomes of the REDD or rather say to be prepared for REDD, proper tenure rights either formal or informal should be intact, which can only be possible with better understanding of local conditions and improving tenure according to the region. The formal property rights do legitimize the use of forest resources for communities, however, informal property rights regime also play important role in managing the forest resources. Hence, while implementing REDD mechanism, the locals should be involved in formulating rules and regulations, only then the internalization of regulatory mechanism will take place leading to success of REDD. Similarly, devolution of property rights from government to the local communities and should be done, encouraging the local communities to set up their own rules and, it is also important to include

indigenous and local communities from the initial process of policy making because they know better about their requirements. Likewise, external support (governmental and non-governmental) is also important for the successful implementation of programme and capacity building of locals. And, with the potential benefits from carbon trading perceived, conflict might arise among communities where tenure rights are not well defined. Therefore, challenges lie ahead for making REDD mechanism less of a business endeavor and more with a venture with social and environmental overture. Hence, tenure rights are one of the contextual factors of IAD which is shaped up by formal and informal social or political rules, knowledge and capabilities (financial and socio-political capabilities of participating actors.

4.5 Collective action institutions and its implication in REDD+ mechanism

As the part of contextual conditions, the collective action also affect the outcomes of REDD, where as "collective action institutions are shaped up by legal and political structure of society" (DI GREGORIO *et al*. 2008, p. 9). Collective action is important as it helps to drive away from risks, give power of expression to the poor and can be present in the form of social networks. Forests have always been managed or governed by the local and indigenous communities across the world (AGRAWAL 2007; FAO 2005; cited in LAERHOVEN 2010), and plays important role in the livelihood of these people. Hence, it is important to maintain the forest in good condition (LAERHOVEN 2010), which can only be possible through good governance and collective action of local communities. The success story of community forests can be taken as an example of collective action being successful, for which good governance was created through trust building and secured tenure rights; eventually reducing transaction costs for managing forests (LAERHOVEN 2010).

REDD is being implemented in the forests managed by communities so, consent and aspiration of the communities is required to work out the policy. The good community forestry management mechanism with carbon trading as an agenda requires the communal planning, establishment and management of natural resources. These things will facilitate the communities to derive maximum amount of socio-economic and ecological benefits from the forest, henceforth, contributing to forest conservation with co-benefits of rural development and poverty reduction (EMMONS 2011; MAIDEN 2011). The presence of strong social network and bonding among communities help to create collective action by forming

formal or informal groups and forming networks, such as forest user groups, and community based organization. Hence, for the success of the REDD as well, strong collective action institutions are prerequisite. This can only be possible with secured tenure rights as in case of Dak Lak communities who began managing the forests in collective manner after the introduction of secured tenure rights (TAN *et al*. 2008a), creating good condition of the forests. Meanwhile, a survey conducted by Forest Governance Learning Group (FGLG) in selected villages of Dak Lak and Thua Thien Hue province showed that inflexible regulations introduced by the authorities to enhance collective action resulted in negative effects, inhibiting collective action (BLEANEY *et al*., 2009 p. 2).

Taking lessons from the previous case, in Phu Tho province of Vietnam, Community Livelihoods Clubs (CLCs), part of a Sustainable Rural Development (SRD) project are working with an aim to improve the livelihood of poor farmers and increase the decision making capacity (BLEANEY *et al*. 2009). The clubs contributed in implementing livelihood improvement plans along with managing demonstration plots and capacity building activities through trainings. In the clubs, two-thirds of members are women. With inclusion of poor and disadvantaged households, the clubs have been successful in improving forest management, benefit sharing and equity conditions, which in turn have given power to the groups to share their vision and work with governing authorities. Citing the success of CLCs, they were promoted to the collaborative community based organizations with legal framework, and have been seen as collective action institution which can facilitate, design and implement the REDD+. Some of them have already started working together for REDD+ in civil society networks.

In Cambodia, the communities of Oddar Meanchey, which had faced rapid deforestation during past three decade, come together to work for fulfilling the co-benefits of social, as project is collaborative and matched their interests as well (POFFENBERGER, 2009; POFFENBERGER *et al*., n.d.). Participation of local people in forest protection activities was useful to address and tackle many of the local drivers of deforestation and forest degradation (YEANG 2010). The Indigenous People's Alliance of the Archipelago (AMAN) are forcing the government to halt the REDD plus project in the Central Kalimantan region till the project give clear information about the project to local communities and allow them to participate in decision making process (SIMAMORA 2011).

4.5.1 Interpretations of the results

The study by the International Forestry Resources and Institutions (IFRI) research programme on common pool resources of the various countries by using Institutional Analysis and Development (IAD) framework revealed that the goal of forest preservation and equitable benefit sharing is possible mainly through the successful rule enforcement , which is possible if the communities or groups agrees on the rule to be followed and are convinced with the reasons of why they should follow rules (KOONTZ 2003). Moreover, collective action should be present among diverse stakeholders or communities to maintain sustainability. And, collective action is possible only if these diverse groups perceive that the benefits of participation outweigh the costs (KOONTZ 2003). Hence, participation is key for civil society to gain collective action. Experts also revealed that for the success of most, if not all, aspects of REDD programmes in Asia, which is the habitat of heterogeneous forest-dependent indigenous and communal groups, rely on how actively key stakeholders, including local people, are engaged in decision-making processes collectively (Bhattarai *et al*. 2009).

The cases in the previous section gives us the idea when and how collective action can be achieved. The non performance of regulatory mechanism that was supposed to pave way for collective action led to the search for suitable mechanism (BLEANLEY *et al*. 2009). This led to formation of Community Livelihoods Clubs (CLCs) in Phu Tho province of Vietnam, who were given autonomy to decide and work together to achieve the forest management goals. Since, then the Community Livelihoods Clubs (CLCs) have been able to organize people in small groups for achieving common objectives and ensuring the fair and fast benefit sharing among individuals of communities This has motivated the communities to be the part of collective action groups, developing and agreeing upon common agenda and regulations to be followed (BHATTARAI *et al*. 2009). Nonetheless, case of Central Kalimantan province of Indonesia is reverse. The indigenous groups in the region are not accepting REDD, because of the fear from being driven away from their habitat after the REDD (AFP 2011). Their apprehensions are reasonable, as in Indonesia, tenure rights of indigenous people seem to be protected only in paper, not in practice (COTULA and MAYERS 2009). Because of lack of trust among the stakeholders of the region, it is difficult to generate collective action.

4.5.2 Person reflection on collective action as preconditions for REDD+

Hence, for the REDD mechanism to achieve its aspiration, collective action is equally important. The objective of managing forest for carbon stock enhancement and benefit sharing for poverty alleviation and improving livelihood will not be possible without collective action of communities, and government. However, collective action is a result of interaction of various assets with governance mechanism including tenure rights. In the regions of Vietnam and Cambodia, as mentioned in previous section, the collective action is positive for REDD+ as communities find more benefits working collectively in REDD+. But, in the Central Kalimantan region of Indonesia, collective action emerged to defy REDD mechanism because the locals perceive REDD+ as threat to their habitat and culture. So, it can conclude that collective action can come for various reasons depending upon the individual or groups interest. Moreover, the drive to be in collective action is influenced by the social economic conditions, policy or governance rules with in the forest management system. Collective action act as an insurance against the shocks and vulnerability situation for many people. For REDD+ to be accepted by communities, it is important to tap the needs and interests of people. Most importantly, they should not be denied of their communal tenure rights of forest and land by inducing legal claims, otherwise they will fall in the bottomless pit of exclusion and poverty trap. Gaining trust and creating partnership for the communities disenchanted with REDD+, could be done by acknowledging the indigenous knowledge of these communities, integrating them in every step of decision making process through transparent procedures. Since, deforestation and forest degradation are polycentric problem with polycentric reasons; they should be tackled by introducing more flexible and adaptive regulatory mechanism. Consequently, even for the collective action to happen in favor of REDD+, the problems and issues should be dealt from holistic approach, by prioritizing the issues based on the local situation. The people from every stratum especially the disadvantaged ones, should be included as done by Community Livelihood Clubs of Vietnam, and Community Forest Users Groups of Cambodia. Nevertheless, I do have concern that Asian countries will be good in generating collective action as the forest dependent localities and almost every REDD countries of Asia, are mired by corruption and bad governance situation. Also, for many communities, forest fulfill the need of fuelwood, fodder and timber, and generate income, it is important for them to perceive the transaction costs of REDD to be less than that of following these

activities. Alternative environmental friendly solutions such as bio-gas for cooking and other localized interventions to fulfill the basic needs of the communities based on the requirement of the locals should be induced. This, in turn will change the path of collective action in favor of agenda of REDD – reducing deforestation and degradation, forest enhancement and livelihood improvement.

4.6 The Action Arena

As explained in the conceptual framework, the action arena helps us to comprehend how people from diverse social hierarchy and settings come together under REDD mechanism to enhance forest conditions and to reduce poverty (DI GREGORIO *et al*. 2008, p. 9). These actors based on their power and position, capability, information about payoffs of their actions and possible returns of their actions, and knowledge about the possible implications of their actions (OSTROM 1998) choose the way of implementation of REDD in the action arena. Though working for similar goals, the pattern of interactions among the actors in the action arena led to variation on the potential outcomes of REDD. The actors and factors affecting the action situation is analysed using the examples from the cases mentioned above.

4.6.1 Actors

The actors involved in REDD mechanism include communities, government, international and national non-governmental organizations and countries funding for carbon trading. In the Asia-Pacific region, REDD is supported by Forest Carbon Partnership Facility (FCPF), UN-REDD Programme, Forest Investment Programme (FIP) of the Climate Investment Funds, and Global Environment Facility Sustainable Forest Management and REDD+ Programme (ADB 2010 p. 8). FCFP is administered by World Bank to fund REDD projects in Asia, where as United Nations Development Fund (UNDP), Food and Agriculture Organization (FAO) and United Nations Environment Programme (UNEP) are the operators of UN-REDD. The industrialized countries such as Norway, Germany, the United States, Japan and Australia are providing direct funds to the countries (ADB 2010, p. 10). In the national level, government along with its national level non-governmental partner, and in local level, community based organization, with local government and forest users group work together (ADB 2010). The institutional focus is on devolution of power to local actors

for livelihood improvement. And, the sharing of experiences is done in across the countries in regional level as well.

4.7 Factors affecting action situation in REDD+

4.7.1 Attributes of the physical world

The forest cover within the regions of REDD+ countries differ in Asia. The countries such as Indonesia, Papua New Guinea, Lao PDR, Cambodia and Vietnam are the countries having high forest cover, where as countries such as India, Bangladesh and Nepal are the countries with medium to low forest cover. Likewise, the deforestation in the countries differs, some have high and some have low deforestation rate. These factors also affect REDD+. It has been in discussion for long time that REDD+ is profitable to the countries with high forest cover and high deforestation rate like Clean Development Mechanism (CDM). This is due to the fact that for the countries with low forest cover, transaction cost is high to maintain forest and to monitor and evaluate the forest carbon stock enhancement. The forests in these countries are dispersed and in patches. The chances are high that funding countries favor the countries with high forest cover only. The countries such as Indonesia with high forest cover and high degradation can gain in REDD+ by additionality (enhancing forest carbon stock), where as countries with stable forest condition and very low forests cover can gain very less from additionality of carbon. Since, the higher transaction costs are being projected from these kinds of regions, locals might not get benefits from REDD+ required to invest in livelihood improvement of people.

4.7.2 The community and its attributes

The characteristics of community, such as the level of information and ability of communities to process them, cognitive schemata, social capital, and group dynamics also affect the outcomes of REDD+. The Asian forests are home of people from diverse indigenous groups and their power status, social capital, assets, knowledge system and forest usage differs. The community attributes should be noted and appropriate method based on the attributes should be used while going for REDD+. Hence, to reduce deforestation and forest degradation, flexible and adaptive mechanism should be chosen. The different community attributes can have different kind of reaction to similar situation arise by REDD+. Some of the example of how different communities react to different

situations or problems in REDD+ and the how community characteristics influence the process and outcomes in REDD+ is discussed below.

The indigenous groups from Indonesia and Papua New Guinea expressed their voice against REDD+ based on fact that the tenure rights were being taken away from them. But, the way they handled the problem is different. The indigenous communities in Indonesia formed a strong social network among each other and are raising their voice against the REDD+ in the national and international platform based on social networks and their knowledge, where as the indigenous groups from Kamula Doso of Papua New Guinea have not been strong enough to stand against the government and others. This may be due to their social power status which is weaker than that of corrupted government as their voices were silenced by coercive power (GILBERTSON 2010, p. 27-28). But, Indonesian indigenous groups supported by various local and international organizations have been able to make their voice heard in the arena. The groups in Papua New Guinea might not have much exposure to the outside world to articulate their problems because of cognitive dissonance. If the voices of these deprived groups are not heard, instead of improving livelihood, they might end up being poor and more vulnerable to risk.

High deforestation rate was observed in Vietnam during 70s till 80s, to solve the problem of deforestation, new rules were introduced, also the participation of communities were emphasized but people's participation was not good because of centralized approach. Then, as BHATTARAI *et al*. (2009) stated, the Community Livelihoods Clubs were formed including disadvantaged group and women. Their capacity building through training on various aspects, and social mobilization activities have profound impact on forest carbon stock, and also on their decision making process. Since, they already have knowledge and information about forest management, and are also involved in decision making process of forest management, the implementation of REDD+ in the area got full support from the locals. Hence, facilitating through groups has been good to mobilize poor, women and marginalized groups. Though, REDD+ is still in initiation phase, less hassles have been faced at local level due to the knowledge and information gained through clubs. Moreover, engaging local peoples in national REDD+ processes and livelihood improvement through benefit sharing is good for getting better outcomes from REDD+.

4.7.3 The rules in use

REDD mechanism has been implemented since 2008/2009, and countries have not gone for full fledged REDD+ implementation. In majority of the countries, it is being started as pilot projects in the community managed forest. Forest communities are responsible for maintaining carbon stock and to fit under REDD+, they might have to change some regulations such as minimizing the forest harvest for fuelwood, timber and food. Moreover, the rules and regulations to maintain forest carbon stock are different for different groups based upon their group rules. Rules help to create good governance, otherwise, REDD+ might end up being inefficient mechanism. Lack of governance can lead way to corruption and mismanagement. The apt example of rules formulated in top level without engaging the indigenous groups and mired by corruption is of Papua New Guinea, where Greenpeace stated that lack of proper governance led to disregard of the tenure rights of indigenous groups, estimated likely benefits from REDD+ also were inflated unreasonably making the institutional systems unfit for management of forest under REDD+ (GILBERTSON 2010, p. 27-28). Furthermore, it is not only Papua New Guinea which have weak governance, majority of the REDD+ countries in Asia also lack good governance.

4.8 Rules of benefit sharing

The fundamental principle of REDD+ is to create a mechanism to transfer the rational amount of financial incentives from developed countries to developing countries for reducing deforestation and degradation, and reducing poverty of forest based communities by improving their livelihood (REDD-NET 2010). Moreover, the financial incentives can provide benefits to the communities. Though clear tenure rights of land and forests may not guarantee carbon rights and share in financial benefits, they are prerequisite for ensuring effective participation of locals in the programme (BHATTARAI *et al*. 2009). Meanwhile, the ambiguity present on carbon rights should also be addressed with inclusion of local communities. After rights are clearly defined, equitable benefit sharing among the households is a difficult task as chances of inequity and elite capture are high in Asia, where disadvantaged groups have lesser say in decision making process. Hence, wider sharing of benefits focusing on the needs of poor and disadvantaged group is important for common pool resources including forests so as to maintain harmony and avoid conflicts among communities (MAGINNIS and ESPINOSA 2009, p. 3). Due to the variations among

cases, every country and region of the countries have different benefit sharing rules. The benefit sharing mechanism of Indonesia and Vietnam which is still in its formulation stage is discussed below.

4.8.1 Benefit sharing mechanism in Indonesia

Government of Indonesia is a key player in the country's REDD+ fund mobilization to the different actors including Forest Users Groups. The Ministry of Forestry has formed working group on climate change namely National REDD Working Group, which is responsible for developing the regulations for REDD programmes (BAKER and MCKENZIE 2009; cited in KHATRI *et al*. 2010, p. 18-19). This working group consists of the members from various levels of government, non-governmental organizations, local action groups etc. The regulations developed by this working group states that the benefit are planned to be shared based on the kind or type of forest ownership programmes (KHATRI *et al*. 2010, p. 18-20) as shown in Table 4.1:

Table 4.1 Revenue Sharing for Forest Carbon Projects in Indonesia (projected)

S. No.	Permit holders/forest type	Government	Community	Developer
1	Hutan Adat (Indigenous Forest)	10%	70%	20%
2	Hutan Desa (Community Forest)	20%	50%	30%
3	Hutan Lindung (Protected Forest)	50%	20%	30%

Benefit sharing within the government = Central (40%) + Provincial (20%) + District (40%)

Modified from source: http://carbonpositive.net/viewarticle.aspx?articleID=1602, cited in (KHATRI *et al*. 2010, p. 19)

Hence, the 70% revenue will go to communities, 20% to the developer and 10% to the government from the REDD projects implemented in Indigenous Forests area. The communities will receive 50%, developer would receive 30% and government 20% of the revenue, where as in protected forest maximum benefits goes to Government (50%), then to developer (30%) and least to the communities (20%). Government also split their share within its hierarchy in such a way that 40% of funds received would go be for Central government, 20% to the provincial and 30% to the district/local government. Though

approved by Ministry of Forestry, Ministry of Finance is not happy with this benefit sharing mechanism, saying it against the Indonesian Constitution, since the Finance Ministry has the authority and right to distribute benefits (SIMAMORA 2010). According to Wanjodo Siswanto, the solution to this problem can be the pooling of money for REDD scheme at finance ministry, but it remains unclear whether to define REDD money as state revenue or not (SIMAMORA 2010).

4.8.1.1 Learning from the benefit sharing mechanism in Indonesia

Though the multi-stakeholder working groups have been formed, the key decision maker in the fund mobilization and implementation of REDD in Indonesia, is Government of Indonesia from central to local level. In central level, Ministry of Forestry is responsible for implementing and monitoring REDD+ activities whereas in provincial and local level, its local subsidiary play role in decision making. Hence, the governments have their final say in the REDD+ related activities (BHATTARAI *et al*. 2009). However, citing the objections of Ministry of Finance, even vertical dimensions of benefit sharing should be taken into consideration i.e. sharing of benefits within national and regional actors within and outside of the government (MAGINNIS and ESPINOSA 2009). From the projected sharing mechanism, it is clear that benefit would be shared among communities involved in protection of the forests and national actors. Likewise, the developer's role in REDD+ mechanism has been acknowledged as they are imperative in the REDD+ negotiation and facilitation of the region.

4.8.1.2 Personal reflection on benefit sharing mechanism in Indonesia

Indonesia is the country with one of the highest rainforest covers in the world and is also one of the five worst emitters of green house gases from deforestation and forest degradation (FINFACTS TEAM 2007). Hence, it can benefit much from REDD+ money for its potential for enhancing forest carbon stock and reducing deforestation than other smaller countries. The active participation of government can be owed to the internalization of potential benefits from REDD+. In due course of time, more actors will come for claiming their share. However, too many intermediaries claiming the share on benefits may minimize the benefits to be allocated for the community members (local or indigenous) (MAGINNIS and ESPINOSA 2009, p. 4), as it can dilute the incentives for local actions.

The major portions of benefits have been planned to be given to the communities in the community managed and indigenous forests, which is good. But, we cannot ignore the fact that in Indonesia, mere one percent of the forests fall under the category of community or indigenous forests (WESTHOLM *et al*. 2011, p. 22). This means forest communities, majority of whom are from deprived indigenous communities in Indonesia are at the peril of becoming alienated from their traditional property rights due to the lack of legal tenure rights. This can have negative implications to poverty reducing objectives of REDD mechanism, and also for the reforestation objectives. Moreover, they will be deprived of the benefits reaped from the resources which they had been managing from time immemorial. It has also to be noted that the representation of disadvantaged group is only in the name only as decisions are made by the government. Similarly, the way of benefit sharing among the stakeholders has not been finalized yet, so outcomes for poverty alleviation cannot be ascertained by REDD mechanism.

4.8.2 Benefit sharing mechanism in Vietnam

In Vietnam, Steering Committee for Climate Change Mitigation and Adaptation under the aegis of Department of Forestry within the Ministry of Agriculture and Rural Development is a key player in shaping up of the REDD policy (BLEANEY *et al*. 2009, p. 1). The steering committee plans to include other governmental and non-governmental actors such as Ministry of Natural Resource and Environment, the Ministry of Planning and Investment, the Ministry of Finance, the State Committee for Ethnic Minority and Mountainous Area Affairs and the Forest Sector Support Partnership (UN-REDD 2009). These actors were included citing "REDD as trans-boundary and multi-sectoral issue, whose success depends upon the wide and active participation of diverse stakeholders" (BHATTARAI *et al*. 2009; BLEANEY *et al*. 2009, p. 1). Vietnamese government has identified 54 forest dependent ethnic minorities and is trying to legally establish their rights on forest resources (BHATTARAI *et al*. 2009). Moreover, government has been trying to include representatives from various ethnic groups at their local offices, helping them to deal with ethnic issues. The three different type of institutional structure for REDD+ funding has been developed by the government encompassing financial audit by internationally certified external auditors to maintain accountability and fairness. Vietnam also plans to include civil society in the boards responsible for managing, administering and inspecting the fund. These

inclusive boards will be responsible for decision making, monitoring and using of REDD funds at national and sub-national levels (UN-REDD 2010).

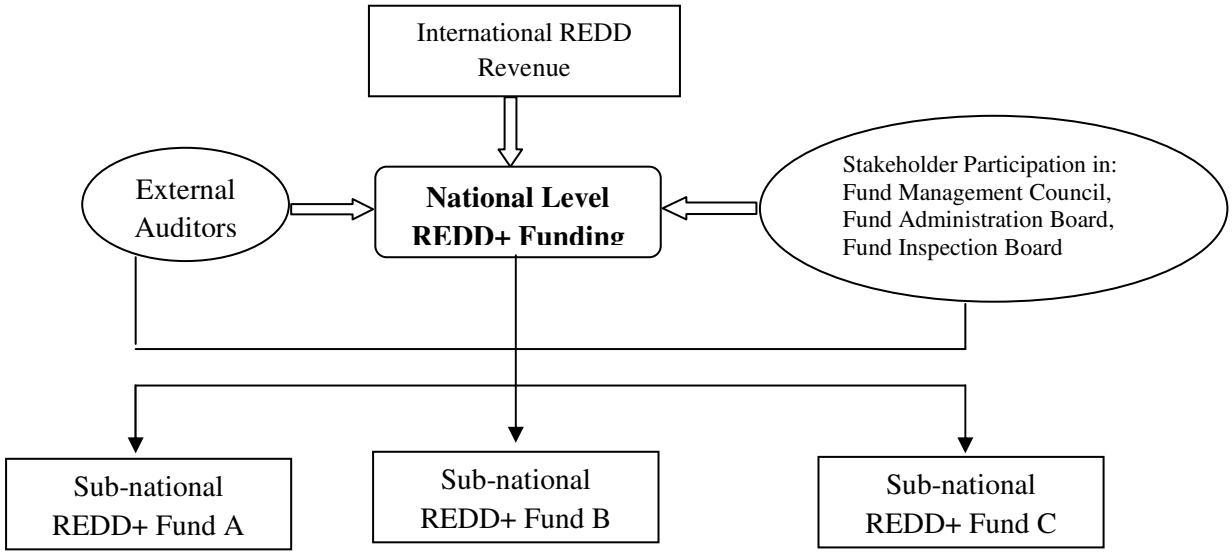

Figure 4.1 Suggested institutional structure for REDD+ funding for Vietnam

(Source**:** UN- REDD 2010; cited in KHATRI *et al*. 2010, p. 22)

In Vietnam, three different levels of institutional REDD funding was formulated at sub national level (Figure 4.1). In sub-national REDD+ option A, fund is being established at national and provincial level. In sub-national REDD+ option B, funds will be established at national, provincial and district levels where as in option C, REDD+ funds will be established at national and district levels. Among these three, option B is termed as most conducive one as it engages all levels of actors from state administration (UN-REDD 2010; cited in BHATTARAI *et al*. 2010).

Due to reform in tenure rights since the late 1980s, forests have been able to foster and flourish after the decline in between 70s to 80s, which led to increment in the forest area (CCMIN 2009). Even the natural forests under local government agencies have been given to the communities under forest protection contract that can lead to better participation of indigenous people and benefit sharing among them. However, it was also reported that the reforestation and forest conservation drive in Vietnam led to massive deforestation in

Cambodia, Lao PDR and even in Indonesia as Vietnamese imported forest products to fulfill its timber demand from these countries (BUTLER 2009).

4.8.2.1 Learning from the benefit sharing mechanism in Vietnam

Vietnam's effort to make REDD+ accountable and participatory by including multi-stakeholder including local communities in fund management council, fund administration board and fund inspection board is commendable (KHATRI *et al*. 2010, p. 18). Even, institutional structuring of REDD+ funding somehow tries to specify the benefit sharing structure and places importance for giving power of decision making on monitoring and use of local REDD+ at national level and also to the local communities (UN-REDD 2010). The payment services for ecosystem was developed already in Vietnam, which can be used as base for REDD+ fund management. The most important and positive aspect of Vietnamese policy is the inclusion of indigenous communities in various levels of decision making. This can facilitate the overall REDD+ process in the country and avert conflict among the stakeholders in the days to come. However, the REDD+ programme has also drawn flaks for lacking the concrete criteria to benefit sharing, as there is no good criteria to assess the quality of conservation efforts that can determine compensation levels for communities (CCMIN 2009).

4.8.2.2 Personal reflection on benefit sharing mechanism in Vietnam

The effort of Vietnamese government to identify and include local communities is good for fulfilling the REDD+ co-benefits of poverty alleviation through inclusion and increasing decision making capacity. However, it still has to do lot of work to assign legal tenure rights of the forests carbon stock to the communities, so as to avoid future conflict. The benefit sharing criteria should be developed in such a way that the good work of the communities should not go unnoticed. As in the Indonesian benefit sharing mechanism, Vietnam also has lots of intermediaries for benefit sharing, which can leave fewer benefits to be allotted for communities. Moreover, if the cost of management becomes more than benefits derived from forest carbon, people might not be interested in forest management activities. It has to be noted that though REDD+ activities might get successful because of the experiences gained in conserving forests by Vietnam or might not face the opposition from locals as in Indonesia. But, it has to find sustainable way to fulfill its demand of forest

products rather than asserting pressure on the ecosystem of other weakly governed country such as Indonesia, Lao PDR and Cambodia. The transaction cost for maintaining the forest should be less than that of going for deforestation; i.e. benefit should outweigh costs as for other common pool resource management (KOONTZ 2003). For the programme to be successful, participation or collective action, inclusion, accountability and good governance is also an important factor, which can only be possible with the effective and equitable benefit sharing mechanism. And, benefit sharing mechanism is still in constructive phase. Since, as in everywhere, REDD+ is still at its initial stage in Vietnam, the result of benefit sharing mechanism on poverty cannot be analysed.

From the Indonesian and Vietnamese case, we can say that the patterns of interaction among the various stakeholders and rules in use are important for success of the programme which aims at poverty alleviation. The success of REDD+ is surely to be affected by the way the collective action, the sharing of the benefit, co-ordination among different strata of intermediaries and primary stakeholders are being organized and by the rules in use, which in turn are affected by the existing tenure rights and transparency in decision making situation.

4.9 Potential REDD+ outcomes related to poverty alleviation

According to IAD framework, patterns of interaction performed by actors lead to outcomes, which vary according to the action situations (DI GREGORIO *et al.* 2008, p. 10). The REDD mechanism implementation can lead to various social outcomes, such as increase in revenue due to forest carbon stock enhancement, income generating opportunities, collective action situation, increased decision making capacity, gender empowerment and so on, which can be judged as evaluative criteria to analyze the poverty reduction goals. In this part, we will discuss about the possible implications of REDD+ in relation to poverty alleviation and livelihood improvement, for which, cases mentioned in the previous sections will also be taken as example:

a) Improved participation of the indigenous and local communities

Still, majority of the forests in the developing countries including Asia, are the home for indigenous and local communities and are managed by them (RAI 2009). These people have both historical and spiritual relationship with the forests, and are dependent upon forests for

their livelihood. Hence, they should be taken as right holders than simple stakeholders. Becoming right holders will let them share the benefits of carbon trading, improving their livelihood. To ensure that their rights are respected, participation of indigenous and local is important. And, for engaging indigenous peoples, free, prior and informed consent (FPIC) processes should be practiced. According to FPIC principles, "consent should not be coerced, should be obtained before starting the project and it should be informed by giving access to all information needed to make decision, including knowledge of legal rights and implications of the project (HERBERTSON *et al*. 2009; cited in DAVIET 2011, p. 20). However, FPIC in REDD projects are not clear enough and are still being developed. Similarly, the tenure rights are still unclear and not well defined in most of the countries such as in Indonesia and Papua New Guinea, where majority of the ethnic forest dependent groups are in verge of being left out from their rights making them poorer and more vulnerable to risks. Defining clear and secured property rights for REDD and following FPIC principles will definitely improve the participation of the indigenous groups as in the case of Vietnam, where participation of communities was generated by Community Livelihood Clubs (BLEANEY *et al*. 2009).

In many cases, the REDD mechanism is being implemented in Community Forests, which already have provision for indigenous and deprived groups, so benefit sharing from carbon trading can play crucial role in improving their livelihood and finally improving poverty. But, many forests are still state property though being a managed by communities; and, the chances are high that these communities will be ignored, so improving tenure rights is important for improved participation of disadvantaged group. Likewise, rules in use, such as in case of proposed REDD strategy of Vietnam, where each mechanism has to ensure participation of ethnic groups, can increase participation. Hence, the tenure rights and rules in use definitely shape up the outcomes of participation of indigenous groups finally leading way for livelihood improvement. And, for improved participation of these groups in REDD, policies should be formulated leading the way for their inclusion in every strata of decision making process, as there are still no concrete policy framework ensuring their engagement.

b) Capacity building

In Cambodia and Vietnam, capacity building of local human resources through basic training, local people are able to have profound positive impact on changes in carbon stocks in their forests and also making them self reliant in decision making process. Since, most of the Community Forest User Groups, where REDD+ is being implemented already have a set of skills through training on various relevant topics, imparting positive impact on forest management. These existing set of skills will help to facilitate REDD+ implementation without any hassles in "areas such as carbon monitoring, protection, rehabilitation and negotiation" (RECOFTC *et al.* 2011). Still, REDD+ is a new topic and lots of technical, economical and social issues about it need to be shared with communities. The best option to impart or share knowledge among people is through training. Hence, grass root level training while implementing REDD+ can help in making people more skillful, increasing their income opportunities and learning abilities, impacting positively in poverty alleviation goals. These things will reduce their vulnerability situation which could have led to poverty.

c) Good governance

Forest management varies among different communities and different regions. In many countries, community forestry was successful because of ensuring participation of stakeholders in decision making and acknowledging traditional forest management practices (RECOFTC *et al*. 2011). Elsewhere, community forestry was not successful majorly, because of lack of governance. Similarly, the community forestry mechanism was criticized for disproportionate sharing of benefits that led to elite capture in the processes. Learning from the past lessons, broad based community participation in decision making is required, only then accountable and transparent governance system is possible. Just as in case of Vietnam, where national REDD+ strategy had tried to ensure participation of all levels of stakeholders and establish auditing to maintain transparency, thereby creating good governance, transparent and accountable government structure are priority of global REDD+ strategy. This may help improve the governance structure in the REDD+ area, leading to effective implementation of REDD+.

d) Gender Empowerment

Though, lot have been written about the rights of indigenous and local communities in REDD+, there has been little focus on improving condition of rural women (REDD-NET 2011). Since, they are the active members of communities who depend upon and also work on managing the forest, including them in planning and design will help to develop equitable benefit sharing mechanism. This will help to change the way the societies worked. According to USAID report, "Gender and REDD+: An Asia Regional Analysis" as cited in REDD-NET (2011), at present, gender dimension and impacts on women from disadvantaged group (poor, local and indigenous) is not much a part of REDD discussion. This can be improved by inclusion of women in decision making and other processes, as social success of REDD depends upon their participation as well. Many countries already or will be planning to mainstream gender issues in their activities such as, in Phu Tho province of Vietnam, Community Livelihoods Clubs (CLCs), part of a Sustainable Rural Development (SRD), it is mandatory to have two-third of the women members (BLEANEY *et al*. 2009), which have positive implications on food security, poverty alleviation and finally the forest stock and species enhancement. Hence, one of the outcomes of REDD+ linking to poverty alleviation goals will be gender empowerment and inclusion.

e) Alternative income opportunities and integrated development

The REDD+ have been promoted as socially and environmentally just mechanism by experts and, the poverty alleviation goals can be achieved by this mechanism. In majority of the countries, REDD+ is still in planning and implementation phase, so not much can be said about the creation of income opportunities and development of local communities as one of the outcomes of REDD+. However, some cases have been documented. One of such case is the Kalimantan Forests and Climate Partnership (KFCP) project, which assisted the local communities of Tumbang Mangkutub hamlet and the village of Petak Puti in Central Kalimantan. Now, with the guidance and help of the project, locals are managing their own land and income "through activities such as the programme to improve the quality of rubber production through agricultural training of farmers, development of freshwater fish ponds in wetlands and ditch blocking to rehydrate dried peatlands" (KRISTANY 2011). Hence, the programme had helped them to choose new livelihood option that increases skills, knowledge and their income opportunities, imparting positive impacts on poverty

alleviation. The new or improved livelihood option will increase their income and skills, which will again help to develop the community as a whole.

4.10 Lessons learned

The analysis of the REDD+ cases from the various countries in Asia using Institutional Analysis and Development helped to conclude that the REDD outcomes related to poverty reduction depends on multitude of factors, from initial contextual factors, to the action situation and the patterns of interaction of the actors and the path or policy chosen by actors in the certain situation. Specifically, the poverty alleviation from REDD+ depends upon the way in which the poor people's need and interests are prioritized and included in REDD+ design and implementation, and kind of regulatory frameworks used to derive desired outcomes from REDD+. The foremost issues that can impact the outcomes of REDD+ in Asian countries discussed are tenure rights, collective action situation, and the kind of policy mechanism or rules in use in the communities or applied by government to get the desired outcomes and the way these policy mechanism are being implemented. In many Asian countries, for many indigenous and forest based local communities, forest is important part of their livelihood. But, majority of them do not have formal tenure rights over forests. The insecure tenure tends to increase risk to the livelihood strategy of these people, making them prone to poverty situation and also discourages them from investing in forest tenures that may act as driver for deforestation and green house gases emissions. And, in most cases tenures are formally held by the state. One of the REDD+ objective is to reduce deforestation and degradation, which can be achieved by secured tenure, and ensuring collective action. However, these things are affected by the initial physical, socio-economic, political and governance settings. The affirmative action through proper regulatory mechanism in these areas for successful REDD+ can open opportunities for improvement in the communities leading to poverty reduction.

But, we should not undermine the potential pitfalls of REDD+, if the government follows top down approach, rather than following bottom up approach and focuses only on the economic benefits rather than on the overall social implications of REDD+, while deciding, that might affect negatively to the especially to indigenous communities, making them more vulnerable to risks of poverty than before. To prevent negative consequences, REDD+ should try to be adaptive, and flexible. One of the risk associated with the future of REDD+

financing is that, "Will the developed countries be interested in funding the REDD+ activities in the developing countries in future?" The protest by people against Australian government's proposed carbon taxing policy can be taken as an example of the situation that developed countries might have to face (MERCER 2011), questioning the future of REDD+ funds. Also, lots of costs are associated with monitoring, recording and verifying carbon status of forests, readiness of REDD+, and other operational costs, making it an expensive venture for the countries with sparse forest. Hence, it might end up like Clean Development Mechanism, benefitting only big countries such as Indonesia.

Nonetheless, REDD+ can and is able to create a suitable condition for poor to move out of poverty by introducing reforms in tenure rights, collective action, situation of good governance, which can open avenue to income generating opportunities. So, REDD+ can help in formulating institutional preconditions that can facilitate to decrease environmental degradation and increase equity and reduce poverty. Such as the off-farm opportunities created due to participation, capacity building, increased decision making, power, secured tenure rights in REDD+ activities can improve the income and livelihood of the poor.

5 REDUCING EMISSIONS FROM DEFORESTATION AND DEGRADATION PLUS (REDD+) IN NEPAL

The previous chapter analysed the important issues related with REDD mechanism in the context of Asian countries. Nepal, a South Asian country, is one of the first from the South Asia to ratify REDD mechanism, and it has been implementing various levels of REDD activities. The chapter plans to focus on the case of Nepal. This section starts with the overview of the relationship between forest and people, forest status, forest policies in Nepal, and ends with the analysis of REDD in case of Nepal to check its possibility in future to generate benefits. The analysis will try to check whether Nepal have considered the lessons from Asian cases while implementing the programme. The analysis of this section is based on literature review and interview with personnel working on forestry sector focusing on REDD mechanism.

5.1 Forests and people – why forest is important in Nepal?

Of 23 million populations, 52.7% people of Nepal reside in hills and mountains (CBS, 2001), and, over 60% of the households in these regions are living below the poverty line. Fragmentation of lands, declining productivity and deteriorating farm incomes has forced families to become increasingly reliant on common access resources, i.e. forest resources. The forest provides various goods and services to the rural people, such as timber, fuelwood, fodder, leaf-litter, agricultural implements and several other types of non timber forest products (NTFPs). The collection and sale of NTFPs is a good source of income and employment to a large number of the rural poor in hills and mountain regions. Intangible goods and services include the forest's role in soil conservation, soil enrichment and biodiversity conservation. In Nepal, fuelwood is a major source of energy for the rural population. About 66.2 % population use fuelwood for cooking purpose and more than 90% of fuelwood comes from the forest (CBS 2001). Moreover, there are no other visible sources for substitutes of fuelwood in the near future.

In hills and mountain regions, there is strong linkage between agriculture and forestry. Farmers collect dry leaf litter from the forest and use it as animal bedding material. Mixed with animal dung, it is converted into compost and applied to farmland. To sustain the subsistence farming system of one hectare of agricultural land, it requires 1.33–2.8 hectares

(ha) of unmanaged productive forest (WYATT-SMITH 1982, MAHAT *et al*. 1987, BARAL and THAPA 2003).

Livestock raising is an important agricultural enterprise and also the source of off-farm income. Free grazing of animals in the forest is a very common practice and it is widespread all over the country. In the forest, animals' trampling compact the soil with negative effect on the sprouting and natural regeneration of valuable species. Further, heavy pressure on the forest for firewood, fodder and grazing is the main cause of forest degradation (BARAL 2003).

According to CBS 2001, of 14.72 million ha land area in Nepal, forest covers about 4.27 million ha (29%) and shrubs 1.56 million ha (10.6%). From 1978 to 1994, the forest area declined at an annual rate of 1.7 percent. Both forest and shrubs together have decreased at an annual rate of 0.5 percent (DFRS 1999). It is estimated that about 240 million cubic meters of topsoil are lost every year. Similarly, Nepal's forest area, which was 45% in 1964, declined to 37% in 1986 and further to 29% in 2000 (CBS 2001). FAO country report (2005) shows that Nepal has an annual deforestation rate of 1.63% from 1990 to 2005, which is higher than for most other countries. In this period, shrubland also increased by 4.05% annually indicating a conversion of forested land into degraded forests (KARKY 2008). Hence, to reduce degradation of land and deforestation, Nepal sought different forest policies to help community solve the problems. Among various forest policies, Community Forest Policy in Nepal has been found to have profound positive impact in forest cover expansion and community development.

5.2 Forest policies in Nepal

Various policy measures were taken at different stages in forestry sector of Nepal to protect the forest. After the democratic revolution in 1950, the government nationalized all forests in 1957 to prevent the feudal Rana rulers from continuing to use forests in the plain/Terai region as their personal property. The Private Forest Nationalization Act 1957 was primarily concerned with bringing an end to indiscriminate felling of trees in the Terai forests and the unregulated trade of timber with a view to check the further forests degradation in the country. However, nationalization of all forestland in 1957 and subsequent protectionist practices by the government undermined indigenous management

systems and led to overgrazing and random harvests. This accelerated degradation of the landscape and caused deforestation on a massive scale (SATYAL 2004). Hence, during the 1970s, the issue of forest and land degradation was highlighted and poor hill farmers were blamed for forest degradation (ACTION AID 1999).

The concept of Community Forestry Management (CFM) policy was formulated in response to the deteriorating condition of the state-controlled forests in the late 1970's. Nepal's forestry sector has under gone a paradigm shift after this policy that reflects devolution of forest resources from state control to community control (GILMOUR and FISHER 1991; HOBLEY *et al*. 1996). Under state management, forests were prone to 'the tragedy of the open access' (OSTROM 1990, cited in KARKY and SKUTSCH 2010); anyone and everyone had unlimited access any time because the state owned the resource. This was turned around by implementing CFM and handing over forests to local communities in the 90's. Usufruct rights were spelled out for the commons (GILMOUR and FISHER 1991; HOBLEY *et al.* 1996) and deforestation rates were considerably reduced, particularly in the hills.

However, this Community Forest Management policy was criticized for making the forest inaccessible to marginalized indigenous population and pro-poor communities, who solely depends on forest resources for food, fuelwood, medicine etc. In 1998, National Planning Commission of Nepal declared leasehold forestry as a priority programme to address these pro-poor issues. It was accorded the second highest priority after Community Forest Management in the Forest Policy Act (JOSHI 2006).

Deforestation in the tropics accounts for up to 20% of global emissions of carbon dioxide (CO_2), making it the second most important contributor to climate change after the combustion of fossil fuels and the largest source of GHG emissions in the developing world (EBELING and YASUE 2008). In most of developing countries such as Nepal, emissions are generally through deforestation and degradation, threatening the biodiversity of the area. The problem can be tackled by rewarding the conservation activities which can in turn benefit poor households of forest dependent communities. Citing these things, Reducing Emissions from Deforestation and Degradation plus (REDD+) has been proposed as a potential policy under the voluntary framework of the UNFCCC (OJHA *et al*. 2008; KARKY and BANSKOTA 2009), which is in initiation phase. Nepal is drafting its official REDD

strategy paper now, which have yet to be finalized. In Nepal, especially in hills, participatory forest management approach which includes community and leasehold forest management is successful. At present, government plans to include only community managed forests in the REDD mechanism. However, other kind of forests along with government managed forests should also be included in under REDD mechanism, for increasing benefits, and reducing transaction costs.

5.3 Forest and GHGs emission in Nepal

Nepal contributes 0.025% to the global annual GHG emission (MOPE 2004). The estimated total GHG emission from Nepal is 39,265 Giga gram (Gg) and per capita emission is 1,977 kg (GON 2008a). More than 1 trillion tonnes of carbon is stored in forests and forest soils of the world, twice the free floating amount in the atmosphere. Thus, increasing storage and preventing stored carbon from being released back to the atmosphere are two of the most important measures for combating global warming and conserving the environment. The Intergovernmental Panel on Climate Change (IPCC) estimates that the global temperature is likely to be increased by up to 3.5°C by 2100. Over the last twenty-five years, the temperature in Nepal has also been increasing at the rate of 0.06°C per year (GON 2008b). In high altitudes, it increased by 0.6°C over the last thirty years (LIAU and RASUL 2007). Concentration of carbon dioxide was almost stable at 280 Parts Per Million (PPM) over hundred years or up to the pre-industrial stage, and which increased rapidly following the Industrial Revolution, reaching 380 PPM in 2005 (BANSKOTA *et al*. 2007). In terms of percentage, between 1970 and 2004, global GHG emissions have increased by 70%; CO_2 emissions alone have grown by about 80%. Globally, forest destruction causes 24% of human-induced carbon emissions and 18% of all GHGs (SCHOENE and NETTO 2005). Thus, it is the second single GHG source, behind energy production, responsible for about a quarter of anthropogenic GHG emissions (IPCC 2007).

Reducing emissions from deforestation could significantly contribute to overall efforts to stabilize GHG concentrations in the atmosphere and to mitigate the climate change. In Nepal, the forest area decreased at an annual rate of 1.7%, whereas forest and shrub land together decreased at an annual rate of 0.5% during the period 1978/79 to 1994. Some recent studies in twenty Terai districts suggest that the forest cover has decreased at an annual rate of 0.06% during the period 1990/91 to 2000/01 (DOF, 2004; cited in OLI and

SHRESTHA 2009). The above two figures clearly show that deforestation in Nepal has been in a decreasing trend, which will certainly mitigate the negative impact of climate change. Though, community forest management regime is successful in hills of Nepal to preserve forests, the forests in plains/Terai region, known for its biodiversity are still faced with problem of encroachment, high deforestation rate and low participation in collective action. Due to unstable political situation, and high benefits from illegal logging, increasing population, forests have been ignored, leading to high deforestation. Deforestation not only causes loss of carbon, but also results in loss of biodiversity, disturbed water regulation and destruction of livelihoods of a large number of the poorest (WILLIAMS 2003; cited in OLI and SHRESTHA 2009). Nepal can tackle these problems with REDD mechanism. If implemented properly it can generate economic, social and environmental benefits, because, it still has lot of carbon stored which can be traded.

5.4 Forest carbon status in Nepal

Nepal has 759 million cubic metres of total stem volume (over bark) of forests and 873 million tonnes (air dry) of total biomass of stems, branches and leaves. Carbon storage in the above ground and below ground biomass, deadwood, litters and forest soil is presented in table. The Table 5.1 illustrates that the forests of Nepal store 897 million metric tonnes of carbon in 2005 (FAO 2006; cited in OLI and SHRESTHA 2009), indicating the huge potential carbon markets. However, no good official calculations have been done to measure potential benefits in case of Nepal. For the first time, Nepal government is planning to calculate forest status through use of Geographical Information System (GIS) in the country. This will help to keep the inventory of carbon sequestered by all kinds of forest including community forests, which used be unaccounted previously.

Table 5.1 Status of carbon in Forest and Shrub Land of Nepal

Percentage (%)	Carbon (Million metric tonnes)		
	1990	2000	2005
Carbon in above-ground biomass	278	385	359
Carbon in below-ground biomass	97	135	126
Sub-total: Carbon in living biomass	375	520	485
Carbon in dead wood	56	78	73
Carbon in litter	17	13	13
Sub-total: Carbon in dead wood and litter	73	91	86
Soil carbon to a depth of 100 cm	432	350	326
Total Carbon	880	961	897

Source: (FAO 2006; cited in OLI and SHRESTHA 2009)

5.5 Community Forestry and REDD+ in Nepal

The Community Forestry Management has been perceived as the most successful and cost effective method to manage forest by various countries including Nepal (SKUTSCH *et al*. 2009). In Nepal, community forestry management has been most preferred arrangement as it has decreased the deforestation and forest degradation rate (KHANAL 2009, p. 26) by involving people in managing forests sustainably and sharing benefits. According to Department of Forests, Nepal, about 1.45 million households i.e. 35% of the people from Nepal are parts of community forestry management regime (DOF 2011) and about 25% of the forests in Nepal are under community forestry regime (KHANAL 2009, p. 27). After Conference of Parties 13 (CoP 13), reducing deforestation and forest degradation have been recognized as the one of the strategy to mitigate climate change. This led to inclusion of community forestry mechanism under the Reducing

Emissions from Deforestation and Forest Degradation (REDD) policy mechanism, which can benefit the Nepal which has been practicing community forestry.

For Nepal, which became signatory of the UNFCCC on June 12, 1992, and ratified it on May 2, 1994, making it effective in the country from July 31, 1994, REDD is an opportunity. Since, though being a signatory to the Kyoto Protocol and becoming party to the conference from December 2005, Nepal did not gain much from Clean Development Mechanism (CDM) which focused on emission reductions from avoided deforestation. As, in Nepal, many forest are regenerated and sustainably managed forests, and harvesting carbon trading benefits from CDM is not possible. Hence, after REDD mechanism has been identified as an opportunity to derive social, environmental and financial benefits from the Community Forests through forest carbon stock enhancement and increasing livelihood of people by reducing poverty in Nepal.

However, advanced remote sensing technologies for forest monitoring for measuring forest carbon stock are not easily available in Nepal, and, individual and institutional capacities to estimate and monitor forest resources are not so strong. For cashing the benefits from REDD, there is an imperative need for maintaining reliable baseline statistics of the forestry sector (OLI and SHRESTHA 2009), besides building capacities of Community Forest Users Groups for REDD mechanism. Despite the success of Community Forest Management, deforestation and forest degradation is still rampant as annual deforestation rate in Nepal is higher (-1.63% in between 1990 to 2005) as compared to other countries, and at the same time shrub land increased by 4.5 % due to degradation of forests (FAO 2005, p. 10). Hence, there is a potential to expand Community Forest Management to these areas, and put it under REDD regime to reduce deforestation and forest degradation and also to improve livelihoods of members of Community Forests Users Group.

5.6 Opportunities and Challenges of REDD+ in Nepal

The REDD mechanism starts with Reducing Emissions from Deforestation (RED) moving to Reducing Emissions from Deforestation and Forest Degradation (REDD) and finally to reducing emissions from deforestation and forest degradation through forest enhancement (REDD+). Hence, the negotiations are now focused on REDD+ as it has create new opportunities to help conserve forests, increase carbon stocks which in turn provide the

chances to tackle poverty, strengthen livelihood resilience, creating ecosystem services and promote adaption to climate change at global level. In the future, however, REDD+ must move to Reducing Emissions from all Land Uses (REALU), to be viable and practical to acknowledge all sorts of emissions reduction of carbon. As, forestation of previously non forests land will also reduce biodiversity and ecosystem services offered by non forested land (MILES and KAPOS 2008, cited in DICKSON *et al*. 2009) and even biodiversity outside forest land should be acknowledged.

For now, REDD+ is a good opportunity for Community Forest User Groups of Nepal to draw benefits for the sustainable forest management activities. If environmental safeguards are not strongly enforced, then REDD+ could convert natural forests with wider biodiversity to just plantation forests with lesser biodiversity. Likewise, setting suitable baseline situation, and establishing effective system to monitor, report and verify carbon stocks for assessing the progress in REDD+ goals is tough job (ACHARYA *et al*. 2009). Thus, focusing only on carbon could have negative effects in biodiversity conservation; and additional transaction costs is required to maintain the ecological integrity of forests (ACHARYA *et al*. 2009, p. xiii).

Nepal can also face the problems related with social and institutional issues. As REDD+ is in formulating stage and adopting regulatory framework for maintaining good governance to ensure equity, efficiency and accountability in implementation of REDD+ is difficult (ACHARYA *et al*. 2009) in Nepal; where governance is very weak, corruption is rampant and exclusion of disadvantaged groups from REDD+ is of high possibility. Though forest regeneration and management was highly successful under Community Forestry regime in Nepal, it has been criticized for the exclusion of disadvantaged caste groups, tribal groups and poor in sharing benefits. Hence, to include the disadvantaged groups in benefit sharing from carbon financing can be hard task. Likewise, the forests in Nepal especially Community Forests are in small patches, and to monitor, report and verify carbon stock can be expensive, which can dissuade industrial countries to invest in countries like Nepal. The Community Forest Users Groups in Nepal already have a mechanism to share benefits such as harvest of fuelwood, income generated from various other activities. Yet, bringing community forests into REDD mechanism for forest carbon enhancement can require high opportunity costs as "forests provide numerous non-monetary benefits to the local

population, for them, it is the key incentive to manage and conserve the forest" (KARKY and SKUTSCH 2010). The opportunity cost for choosing REDD+ mechanism might be higher and affect their livelihood aspects because of restriction in harvesting forest products to maintain carbon biomass. Finally, besides technical, legal, socio-ecological, and political situation of the country, benefits from REDD+ can depend on the "international negotiations and its resulting competitiveness in a global carbon market vis-à-vis other countries with significant carbon stocks and/or deforestation rates, such as Brazil and Indonesia" (ACHARYA *et al*. 2009).

5.7 REDD+ projects in Nepal

In Nepal, few REDD+ projects have been started since 2009. Majority of these projects aim to estimate carbon stock in forests for future inclusion in carbon financing and to create awareness and train communities about REDD+ and climate change. However, a demonstration project on REDD+ pilot project that aims to set up and pilot REDD+ payment, share benefit and build capacity has been started in community managed forests along the three watersheds (Charnawati in Dolakha district, Ludkhola in Gorkha and Kayarkhola in Chitwan district) of mid hills. The forests under these watersheds are community managed forest. The project covers around 10,266 hectares of the forest land.

5.7.1 Actors involved in REDD+ in Nepal

This project has been managed by the Asia Network for Sustainable Agriculture and Bioresource (ANSAB), International Centre for Integrated Mountain Development (ICIMOD) and Federation of Community Forestry Users, Nepal (FECOFUN) to prepare the country for the mechanism of carbon financing under REDD. Moreover, the Ministry of Forests and Soil Conservation has established REDD+ – Forestry and Climate Change cell to improve institutions under REDD+ regulatory framework (BHATTARAI 2009, p. 36). Similarly, World Wildlife Fund, Winrock International and ForestAction are engaged in applied research, piloting and policy advisory activities. The Center for People and Forests (RECOFTC) and FECOFUN are jointly promoting grassroots awareness on REDD+ concepts and issues. In addition, both FECOFUN and the Nepal Federation of Indigenous Nations (NEFIN) are actively engaged in understanding the dynamics of REDD+ through global forums and national debates, while representing the concerns, rights and

involvement of their constituents—community forest user groups (CFUGs) and indigenous peoples, respectively (BUSHLEY and KHATRI 2010). These institutions are building 'REDD+ readiness' or building Nepal's institutional capacity to engage in REDD+ after its projected inception in 2012.

5.7.2 REDD+ project status in Nepal

The pilot project has been implemented to test the REDD+ and its impact in the society. After implementation of the project, there has been an increase of carbon sequestration of 8.6, 19.4 and 5.1 tonnes of carbon dioxide per hectare in the community forests of Dolakha, Gorkha and Chitwan respectively between 2010 and 2011 (SHAHI 2011). In 15 June 2011, 105 forest users groups from Dolakha and Gorkha in the west and Chitwan in the south, where REDD+ has been implemented received a total of 95,000 dollars by ICIMOD. Charnawati got 43,545 dollars, Ludikhola got 27,560 dollars and Kayarkhola received 21,905 dollars (SHAHI 2011). Though the carbon money, after shared among all the stakeholders, may seem meager, in Nepal, it is considerable amount to be spent in the livelihood improvement of poor. However, REDD+ mechanism is in its trial phase and lot of issues need to be assessed and potential pitfalls should be avoided by learning from REDD+ scenario from other country cases

5.8 Results of analysis of Nepal case using IAD framework

In this section, the plan is to investigate whether REDD+ in Nepal have been able to avoid the pitfalls while implementing REDD and incorporate the principles needed for success of REDD based on lessons learned from the cases discussed in Chapter four. The tenure rights situation, effective participation, benefit sharing mechanism, governance issues, the variables from IAD framework which affect the outcomes related with livelihood improvement and poverty reduction for REDD are envisaged in the following section.

5.8.1 Forest tenure/property rights institutions in Nepal under REDD+

From the Chapter four, it is clear that forest tenure is important for local communities. For Nepal, forest tenures are of quite important as it is a home to more than 30 % of forest dependent indigenous group. The community forest management regime and leasehold forestry management regime in Nepal do ensure the property rights to the local

communities whereas, the large area of forests still belongs to state or are converted to protected areas. The Community Forestry in Nepal is exemplary of sustainable forest management (LAMSAL and BHANDARY 2009), where as in protected forests, forest dependent communities have been stripped of their traditional forest rights making them vulnerable to poverty. Hence, Nepal is characterized by diverse and distinct governance mechanism in case of forest management and benefit distribution mechanism (BUSHLEY and KHATRI 2010, p. 14). Even among different community forest regime of Nepal, the governance mechanism and benefit sharing level to locals vary.

In hills, tenure rights due to community forests has been quite instrumental for positive change in livelihoods of local communities, where as in some parts of Terai/plains, it has not been able to impart positive impacts. Moreover, though they have autonomy in managing forests, still Community Forests User Groups (CFUGs) face threats to their rights to manage and use forest resources because of lack of secured tenure rights of forest lands, though they have clear rights to trees and forests (BUSHLEY and KHATRI 2010, p. 14). The lack of tenure rights to land can be challenging for carbon trading under REDD+, as carbon is stored not only by trees but also by soil, roots and organic debris, for which CFUGs have no rights (OJHA *et al*. 2008; POKHAREL and BYRNE 2009). Even rights guaranteed by law are counteracted by government directives and administrators.

5.8.2 Collective action/Participation of communities

The successful results in case of Vietnam, Cambodia and other Asian countries under REDD+ have been due to participation of local communities in the programme. Has Nepal been able to create participation? The success of Community Forest Management Regime in Nepal has been attributed to the collective action, imparted by Community Forest Users Group. These groups actively participated in management, formulation of rules and regulations for benefit sharing, sanctions and punishment for violation of rules, because of the active participation, the degraded forests were rehabilitated. Since REDD+ is a novice idea, participation in national REDD+ processes have been limited. However, affirmative action by various stakeholders has made the participation of local communities possible in case of Nepal, especially in the Community Forestry. Participation is positive in Community Forest Users Groups of hills, but same cannot be said about forest communities from plains. Likewise, concern has been voiced that REDD+ policy documents in Nepal,

that though it recognized the engagement of multi-stakeholder for REDD+ implementation, the REDD+ implementation policy is being developed by the experts or consultancies, without prior consultation and support from multi-stakeholders. Hence, the chances are high that the concerns of local stakeholders, important governance concerns have not been addressed, making the approach a top-down one (BUSHLEY and KHATRI 2010) and discouraging participation of local communities in decision making. Nonetheless, the participation has been improving in national REDD+ process as multi-stakeholder consortium have been formed including marginalized groups (BLEANEY *et al*. 2009).

5.8.3 Attributes of the community and physical world

The initial forest cover, location, socio-economic status of the communities and governance structure within community forestry are the context which can affect the REDD+ implementation in Nepal.

In Nepal, different geographic regions have different response to same forest policy because of diverse drivers of deforestation for each community. Though Nepal has been able to reduce deforestation in mid hills, deforestation is still a problem at plain/Terai region. It is due to the fact that deforestation in mid hills was for subsistence and the collection of non-timber forest products, whereas deforestation in plains/Terai is due to the high value timber species and expansion of agricultural land. This might lead to focus the REDD+ activities only in mid hills of Nepal because of the perceived better success chances (BUSHLEY and KHATRI 2010).

REDD+ seems to be beneficial for Nepal because of effective community forestry policy and strong forest management institutions. However, for developed countries, Nepal might not be the attractive venture for investment because of sparse forests as compared with Indonesia, Brazil etc. which make it complex and costly to monitor.

The funding mechanisms such as Forest Carbon Partnership Facility and UN-REDD want to ensure the standardized REDD+ process across a range of countries, which can led to inflexible REDD+ design, formulated by top down approach. The inflexible REDD+ design if not made flexible, cannot fit the entire situation and may restrict the REDD+ implementation.

Hence, contextual factors play key role in setting up opportunity for following or implementing REDD mechanism. It can also be said that though some contextual factors have positive outcomes for poor and disadvantaged group, others might have negative consequences. These factors can either affect the property rights and collective action institutions.

5.8.4 Benefit sharing mechanism in REDD+

One of the major concerns of REDD+ mechanism is about maintaining equity in benefit sharing mechanism among different stakeholders. In Nepal, community forests though have been applauded for forest conservation, it was criticized for internal inequities in the access to benefits and decision-making persist many CFUGs, perpetuated by local power imbalances (BUSHLEY and KHATRI 2010). Even in other countries, benefit sharing mechanism that addressed equity issues have been difficult to create. For creating conducive environment for benefit sharing in REDD+ of Nepal, following things need to be considered

- Multi-stakeholder decision making: Multi-stakeholder decision making is important to ensure the accountability and transparency of REDD+ activities. The lessons can be learned from Vietnam, where they even include third party for auditing and managing the funds. Likewise, effective participation of government, non-governmental organizations and local communities is must for success of REDD+ in Nepal. In its interim strategy of REDD+ in Nepal, it has focused on ensuring engagement of multi-stakeholder through capacity building, creating REDD+ trust funds and managing funds in participative way for community development. Nepal and Vietnam are the first countries to include the indigenous groups in REDD+ negotiation. However, it has to be observed, whether the voices of these people are represented in effective manner or not.
- Beneficiaries of REDD+ payments: It is important to delineate how the benefit is being shared from national to local level, and within communities (BLEANEY *et al.* 2009). Nepal should learn the lessons from Indonesia and Vietnam to include developers in benefit sharing mechanism as future of REDD+. Likewise, it should work to increase the contribution of annual revenues from forests to poorer households. Though Nepal

has already increased the contribution of annual benefits to poorer households by 25%, it is not yet known about how it has been implemented (BLEANEY *et al*. 2009).

- Management of Funds: It is important to ascertain that funds are managed and distributed transparently in accountable and equitable manner. Hence, fund management should be governed by multi-stakeholders, including local groups (KHATRI *et al*. 2010) to ensure that funds are utilized as per the interest and need of the poor and forest dependent communities at community level.

Since, Nepal is still in preliminary stage of REDD+ implementation phase, how benefit sharing mechanism impact the poverty reduction outcomes in REDD+ mechanism is not possible to analyse at present context. Likewise, in future, if REDD+ moves beyond Community Forestry Regime to the state and protected forests which is likely to happen, there is no well defined benefit sharing mechanism. It is important to develop well defined benefit sharing mechanism for protected areas and state forests also with inclusion of local and indigenous communities, whose livelihoods are linked with forest and were ignored in past while converting the forests to protected areas, affecting their livelihoods.

5.8.5 Forest governance

The way in which forests are governed play major role in fulfilling the co-benefits of REDD + i.e. poverty reduction and forest stock enhancement. In Nepal forest governance is affected by three institutions that includes the legal and policy framework, the forestry bureaucracy, and the policy and decision making process (BUSHLEY and KHATRI 2010). From the review of cases of Chapter four, it is already known that forest governance affects variety of things including forest tenure rights and collective action institutions arrangement, benefit sharing mechanism finally affecting the outcomes. Hence, it is important to know whether the institutions of governance favors pro-poor in REDD+ mechanism or not.

The policy and legal framework has supported the devolution of forest governance, preserved forest are still under centralized forest governance. The community forestry regime which is one of the most successful forest regime covering 25% of Nepal's forest area (KHANAL 2009, p. 27), have decentralized forest management practice with rights given to locals for managing and using forests. However, government still has a control

over majority of forest lands and has authority to control use of forest products. Even, in the community forests, the ultimate legal authority is with government to regulate, manage and use forest products. Hence, it can exclude the locals from benefit sharing mechanism.

In Nepal, forestry bureaucracy includes the Ministry of Forest and Soil Conservation with two departments at central level concerning REDD+ – the Department of Forests (DoF) and the Department of Forest Research and Survey (DFRS). The DoF is responsible for regulating forest management and conservation activities through its local administrative bodies – the District Forest Offices, to enforce administrative and regulatory laws and policies and provide technical support to community forests users group, whereas the DFRS is focusing on research and survey of forests. The local forest administration are responsible for approving and monitoring forest management plans, their working modality can affect the performance of the projects of community forests user groups.

The policy making process affect the forest governance in Nepal. Before 1990s, it used to be highly centralized affair, however, drive for inclusion of multi-stakeholders led to decentralized forest governance. Now, the variety of actors are involved in the policy making process such as Federation of Community Based Organizations (FECOFUN); national organizations supporting the rights and capacities of specific disadvantaged groups, including indigenous peoples, disadvantaged caste group and women; national and regional non-governmental organizations engaged in forestry sector; members of the funding organizations; political parties. Hence, REDD mechanism in its interim strategy has been able to include multitude of stakeholders in the process, but the level and kind of participation of these organizations is yet to be known.

5.9 Personal reflection about REDD+ in context of Nepal

Based on analysis of various institutional conditions under Community Forestry regime, it can be concluded that Community Forests in Nepal have relatively better institutional preconditions such as secured forest tenure rights, good collective action situation, provision of multi-stakeholder involvement and relatively good forest governance. However, these conditions are not sufficient to ensure the success of REDD+ in alleviating poverty, due to the high transaction costs associated in monitoring, recording and verifying carbon stocks owing to the low forest cover as compared to other countries like Indonesia.

In Nepal, the forests products especially timber generate higher revenue than carbons, especially in plains/Terai region with forests known for stock of trees with high value timber. The high timber value than carbon will put off the people to participate in REDD in the plain/Terai regions, which has the highest deforestation rate in the country. Likewise, community forestry regime of Nepal has its own benefit sharing regime. Though, it is possible to add benefits to pre-existing benefit sharing regime of community forests, the benefits from carbon trading in fund based REDD+ mechanism will not be substantial as for countries with high forest cover as Indonesia, Vietnam, and Lao PDR. Even within Nepal, Community Forest Users Groups (CFUGs) from the newly created Community Forests will be able to gain more from REDD+ mechanism than matured CFUGs, as new groups can claim more from addition in the forest carbon stock. The carbon stock enhancement cannot be possible for older CFUGs, as these forests are already well managed with less possibility to enhance their carbon stock.

6 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Forest acts both as sink and source of carbon dioxide. The 20% of global green house gases emissions is from deforestation and forest degradation. Hence, sustainable forest management can play key role in curbing deforestation and forest degradation, which can be promoted by acknowledging the forest communities through some kind of incentives. This led to the development of new mechanism namely Reducing Emissions from Deforestation and Forest Degradation plus (REDD+) under the United Nations Framework Convention on Climate change. The REDD+ aspire to reduce climate change by compensating the communities from developing countries for their forest conservation and management efforts in monetary terms. Based upon the monetary gains from carbon trading, REDD+ can generate co-benefits of livelihood improvement, besides forest stock enhancement and biodiversity conservation. However, various risks are associated that can have negative consequences on the potential poverty alleviation and other objectives of REDD+.

The cases from Cambodia, Indonesia, Lao PDR, Papua New Guinea and Vietnam revealed when analysed using that various institutional preconditions such as tenure rights and collective action institutions, power dynamics, patterns of interaction of actor can affect the outcomes of REDD+. The inclusion of people in decision making, prioritization of their interests and effective participation along with proper design and implementation mechanism can contribute to the success of REDD+. Likewise, governance situation also plays key role in generating positive outcomes from REDD+. However, the impact of REDD+ on poverty also depends upon the international negotiations, as for developed countries investment on REDD+ is beneficial more at countries with high forest cover and high deforestation rate.

The indigenous communities of countries such as Indonesia, Papua New Guinea, and Cambodia still lack secured tenure rights. Hence, they are weaker in power dynamics. They also have less capacity to understand and work accordingly because of the lack of educational skills and capabilities. This can hinder them from reaping benefits. These

conditions might not be conducible for fulfilling the poverty alleviation goals. Hence, profound social, economic and institutional issues such as tenure rights, benefit sharing and governance mechanism, capacity building issues, increased decision making scenario need to be headed towards positive direction otherwise REDD+ might threaten the livelihoods of the marginalized forest dependent communities and also increase their vulnerability by reducing access to forest and forest products.

Similarly, the study of implications of REDD+ in Nepal showed that it has features conducive for implementing REDD+ such as strong community based forest management institutions, supportive legal and regulatory framework for decentralized forest governance, forest enhancement in mid hills due to good management by user groups, successful collective action and growing capacity in monitoring, measuring and verifying forest carbon stocks, and prospects of poverty reduction.

Nonetheless, the significant challenges and risks are to be addressed for effective REDD+ implementation. The difficulty in monitoring, recording and verifying forest carbon stocks due to the scattered kind of forests unlike the vast uninterrupted forest area in Indonesia might increase the transaction costs of REDD+ and might not attract interests of funding agencies.

Likewise, prioritizing only forest carbon stock enhancement can have negative impacts on ecological integrity of the forests, so maintaining biodiversity may require extra transaction costs, reducing its chances of poverty reduction aspiration. The introduction of REDD+ mechanism can restrict from using forest products such as fuelwood and fodder as it also stores carbon, which might deter the Community Forests Users Groups from REDD+ as these are important things for their livelihood. Hence, REDD+ should go beyond the principles of carbon marketing and focus on funding also for sustainable forest management and poverty reduction.

Similarly, the unstable political situation and lack of consensus among political party members who are part of forest user groups can hamper the effective governance of forests in national to local level. The conflict may arise among communities due to contradiction in benefit sharing mechanism as forest tenure rights including that of carbon are not clear. What so ever, REDD+ still offers a numerous potential benefits to forest dependent communities for which, REDD+ should be devised in fair and flexible manner. For Nepal,

REDD+ has potential to generate more from moving beyond Community Forestry Regime to state and protected forests.

6.2 Recommendation

- At present, REDD+ related studies are focused majorly on the principles of carbon marketing, where as to study social implications, in-depth institutional analysis is important and highly recommended. Likewise, implications of fund based REDD+ approach also needs to be studied.
- Though REDD+ plans to address poverty alleviation and equity issues, it has yet to come up with clear mechanism, how it is planning to deal with these issues, so research in these areas is suggested.
- The risk associated with increased transaction cost can dwarf the poverty alleviation outcomes, but not so much research has been done on the transaction cost associated with REDD+. So, it is highly recommended to foray on these areas.
- Research is also needed to discuss the carbon tenure issues, which in future can be the reason of conflict among the stakeholders.

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