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International Architecture of REDD+: Implications for India Final Report



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*...towards global
sustainable development*

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Table of Contents

1. INTRODUCTION	1
2. INTERNATIONAL FOREST POLICY & SUSTAINABLE FOREST MANAGEMENT (SFM)	2
2.1 Achievements & Challenges in the Implementation of SFM in India.....	4
3. REDD+	7
3.1 From Kyoto 1997 to Doha 2012.....	7
3.2 REDD+ current funding architecture.....	10
3.3 Expectations from donor countries: The case of Norway.....	11
3.4 Some implementation experiences.....	13
3.5 Implementing REDD+ in India.....	16
4. CARBON COMPLIANCE MARKETS AND REDD+ FINANCE	22
5. CONCLUSIONS	24
MAIN ACRONYMS	27
REFERENCES	29

List of Tables

Table 1 Perceived areas of priority concern about forests.....	3
Table 2 Changes in per-capita forest area in India in the period 1991 - 2011	6
Table 3 Heterogeneity in changes in forest area in India in the period 2003 - 2009	6
Table 4 Accounting prices and changes in forest wealth in India in the period 2001-2003	7
Table 5 From REDD to REDD+	8
Table 6 REDD+ Funding Tracks	11
Table 7 Norway' evaluation criteria of its contributions to national REDD process	12
Table 8 Donations to the Amazon Fund (2008-June 2012)	13

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1. Introduction

It has been widely recognized that REDD+ can play a prominent role as a strategy to effectively address climate change for at least two reasons: 1) deforestation and forest degradation accounts for about 20% of global emissions, and 2) the costs of reducing emissions through reduction of deforestation rates have been estimated to be considerably lower as compared to other sectors such as industry and transport; see e.g. Kindermann et al. (2008) and van der Werf et al. (2009). IPCC (2007) stated that *“Forestry can make a very significant contribution to a low-cost global mitigation portfolio that provides synergies with adaptation and sustainable development. However, this opportunity is being lost in the current institutional context and lack of political will to implement and has resulted in only a small portion of this potential being realized at present.”*

As a result of climate negotiations, REDD+ emerged in December 2007 with the recognition that deforestation and forest degradation are driven by factors that make conservation particularly challenging for developing countries. These include growing local and international demand for fuel wood, timber, agricultural products and meat. REDD+ seeks to compensate local governments and local communities for giving up on certain benefits associated with deforestation and forest degradation. At the same time it aims at improving forest governance, thereby enhancing the welfare of local communities.

This report analyzes the international architecture of REDD+ with reference to existing and emerging literature and negotiations, to expectations in the investing countries. In the discussion of REDD+ implementation, special attention is given to the role of Sustainable Forest Management (SFM) in the process of building REDD+ readiness in a developing country such as India. To the extent that Norway remains one of the largest sources of REDD+ funding, this country’s expectations and its role as an actor in boosting the demand for forest conservation are discussed. The role of the broader donor community, including multilateral organizations, is also examined. National and international forest policies are continuously evolving and path dependency is often a part of the process. The current analysis delves into forest policy trends and their historical context when rendered necessary.

Section 2 discusses the role that forests in international negotiations and introduces some achievements and challenges in the implementation of SFM in India. Section 3 introduces REDD+. It first discusses the role that forests have played at the United Nations Framework Convention on Climate Change (UNFCCC), starting from COP3 in Kyoto in 1997 and following its evolution towards COP17 in Durban in 2011.² It then maps the current REDD+ funding architecture and introduces the expectations from the donor community. The last part of section 3 discusses some implementation issues in countries such as Brazil, Indonesia and Tanzania, which have taken steps in REDD+ implementation. Section 4 discusses future

² UNFCCC was introduced in the [United Nations Conference on Environment and Development](#) (UNCED) in Rio de Janeiro in 1992. Since 1995, the parties, or country representatives, meet annually in a Conference of the Parties (COP). The COP is the highest decision-making authority of the UNFCCC.

REDD+ funding and the possible international architecture under which it may be provided. Section 5 summarizes and concludes with implications of the analysis for India.

2. International Forest Policy & Sustainable Forest Management (SFM)

Forests in general and tropical forests in particular are highly diverse ecosystems that provide a number of ecosystem services.³ Forests have been the object of discussion in a number of international fora over the years. An in-depth analysis of international forest policy reports a “staggering” number of international instruments, agreements and processes related to forests (McDermott et al. 2007). These arrangements range from global to regional and may be binding or non-binding. Among the existing forest-related instruments, the United Nations’ conventions are of particular interest due to their scope in terms of the number of signatory parties and potential leverage to mobilize funding. The UNFCCC (adopted in 1992), the Convention on Biological Diversity (CBD) (adopted in 1992) and the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification (adopted in 1992) are some of the most relevant conventions for forests (Braatz 2003, McDermott et al. 2007). Other relevant conventions include the Ramsar Convention on Wetlands (adopted in 1975), the World Heritage Convention (adopted in 1972), the Convention on International Trade in Endangered Species (adopted in 1973), the Indigenous and Tribal Peoples Convention (adopted in 1989), the International Tropical Timber Agreement (adopted in 1994) and the World Trade Organization (adopted in 1994).

The long list of forest-related conventions reveals a global concern for the world’s forests. At the same time however there does not exist an overarching Forest Convention that covers the services provided by forests in a unified manner (McDemortt et al. 2007, Ruiss 2009). The relevance of forests in the above mentioned agreements lies mainly in forests services that are directly related to the main purpose of the instrument at hand. For instance, CBD aims at preserving and enhancing biodiversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilization of genetic resources (UN 1992). Ancillary ecological and socioeconomic benefits are typically considered in the different conventions, but do not necessarily play a primary role.

A recent milestone in international forest policy was the adoption of “Non-legally binding instrument on all types of forests” in the United Nations General Assembly in 2007 (UN 2007). An important component of this instrument is the adoption of SFM, which takes the concept of Sustainable Development (SD) and adapts it to forests. It defines SFM as a “dynamic and evolving concept that aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations.”

³ The following classification (Secretariat of the Convention on Biological Diversity 2009 and MEA 2005) is illustrative of the wide arrange of forest services:

Provision of Services: Food, fiber, fuel, genetic resources, biochemical and fresh water

Cultural services: Spiritual and religious values, knowledge system, education, inspiration, recreation and aesthetic value.

Regulating service: Invasion resistance, herbivory, pollination, seed dispersal, climate regulation, pest regulation, disease regulation, natural hazard protection, erosion regulation and water purification.

Supporting Services: Primary production, provision of habitat, nutrient cycling, soil formation and retention, production of atmospheric oxygen and water cycling.

Sustainable local livelihoods are thus an integral component of the instrument. In discussions related to SD in the developed world, e.g. those related to climate change, it is sometimes forgotten that SD is not only about intergenerational equity but also about intra-generational equity. In fact SD explicitly contains “the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given” (World Commission on Environment and Development, 1987).

Forest protection and preservation remains highly underfinanced. International funding to promote forest conservation and sustainable management is not commensurate with the local and global benefits provided by these ecosystems (Barbier 2012). This is so despite the fact that protection of certain forest areas is relatively inexpensive (Angelsen, 2010; Kindermann et al 2008). In a well-known article focusing on the CBD and its failure to raise the necessary funds for implementation, Barret (1994) explains that certain nations may have strong incentives to free ride on the conservation efforts made by forest nations. If this is the case, the total benefits of contributing are reduced and no nation or group of nations may want to participate in a conservation fund. It should be noted that forest conservation is a global public good in the sense that its benefits accrue to society at large and no nation can be prevented from enjoying these benefits.⁴ MEA (2005) states that “the marketed values of ecosystems associated with timber and fuel-wood production are less than one third of the total economic value, including non-marketed values such as carbon sequestration, watershed protection, and recreation.”

Forests provide different services in different contexts and take different meanings across different societies. This diversity could be a factor that thwarted attempts to coordinate international efforts to conserve and manage the world’s forests (Hunter 2001). The classification presented in Table 1 illustrates how groups of countries have emphasized certain aspects of forests in their discourses in the international arena. Countries are classified according to per-capita income and forest cover.

Table 1 Perceived areas of priority concern about forests

Per-capita income •	Per-capita forest cover	
	Low	High
High	Environmental sustainability (e.g. UK, Netherlands, Japan, Denmark)	Sustainable Development (e.g. Canada, US, Australia, Finland)
Low	Subsistence (e.g. <u>India</u> , China, Kenya, Somalia)	Economic development (e.g. Indonesia, Russia, , Brazil)

Source: Hunter (2001)

While high income countries with low forest cover emphasize environmental aspects, rich countries with high forest cover express concerns about forest contributions to the productivity base of their economies. Low income countries with high forest cover seem to

⁴ Unlike private goods, public goods are non-rival and non-excludable. A good is non-rival when the consumption by one individual does not reduce the level of consumption by others. Thus, if one individual purchases the good, others also get to consume it. A good is non-excludable when once the good is provided, it is physically impossible to prevent others from consuming it (e.g. Sandmo 2010).

emphasize the existence of tradeoffs between environment and economic development. Poorer countries with low forest cover are mostly concern about subsistence. To the extent that forests support the livelihoods of millions of people in these countries, it is expected that issues related to energy and food supply would emerge in their discourses. It is thus clear that international instruments that do not explicitly consider local communities and their dependence on forests will not be relevant in those contexts. Such is the case of India where the socioeconomic dimensions of forests currently play a prominent role in forest management.

2.1 Achievements & Challenges in the Implementation of SFM in India⁵

India is an interesting case of forest policy and governance. It belongs to a selected group of developing countries that exhibited negative flux of carbon from changes in land used in the period 1950-2000; Schrope (2009). The results of this study shall be read as a general indication, as it was only until 1987 that satellite data on Indian forests started to be collected. Public registries, for instance, did not distinguish between high forest cover and degraded forests and this can lead to carbon stock misrepresentation. Post 1987 measurements however confirm the existence of a positive trend in forested land, which increased from 634,938 Km² in 1991 to 692,027 Km² in 2011. While the total area of dense forest (40% above crown cover) as opposed to open forest (10%-40%) increased during the period, its total share fell from 60.6% to 58.4% (Naya et al. 2012).

National forest policies and management practices in India have gone through different stages since independence from British rule in 1947.⁶ Policies that (as a side effect) enhanced carbon stocks at the beginning of the second half of the 20th century were not necessarily in line with the needs of local communities and broader environmental goals such as biodiversity. The 1952 Forest Policy was the first milestone in forest management in the country after independence. However, it inherited the centralization spirit of the colonial times, providing policy guidelines that prioritized national interests over local interests. Conversion of natural forests into plantations that maximize timber production resulted in biodiversity loss. Communities supplied labor to nearby plantations but were not allowed to extract forest produce. Over the years, with increased population and demand for forest products (including fuel wood, construction materials, fruits, vegetables, medicinal plants etc.), signs of social unrest emerged in certain areas, making central management difficult. At the same time, natural forest degradation settled in in certain parts of the country. It became clear to government officials and politicians that local communities ought to be an integral part of any initiative that sought the exploitation forests in a sustainable manner. As Nayak et al. (2012) explain, people living close to forests in India, which are often among the poorest in the country, are *“intrinsically linked to the forest ecosystem”*.

It was only until the 1988 Forest Policy that a significant shift in forest management occurred. Local interests were prioritized over national ones and the rights of local communities and their ability to directly harvest forest produce was vindicated (Sud et. al 2012). The 1988 Forest Policy was largely in line with some of the basic principles put forward one year earlier in the so called Brundtland Report (World Commission on Environment and Development 1987). Notably, the basic idea that the needs of the poor ought to be given an *“overriding”* priority in the SD agenda seemed to be at the heart of the new policy. The

⁵ Section 3.5 presents complementary information on forest management in India.

⁶ For a detail overview of forest management in India, both before and after independence see Sharma et al. (2012).

program known as Joint Forest Management (JFM) was introduced in 1990. Its objective was to establish partnerships between local communities and the government so that forests were not degraded beyond sustainable levels. The benefits from forest exploitation, including timber, were to be shared between the government and local communities. Currently, the program covers about 220,000 Km², which corresponds to about a third of the total forested area of the country (Sharma et al. 2012). JFM programs vary widely in terms of the sharing rules, design issues and, naturally, the rates of success. A more recent program is the Community Forest Resource (CFR) program where local communities play an even more prominent role than in JFM.

The decentralization of forest management together with deeper community involvement and increased forest stocks suggests that India has made progress towards having an overarching SFM system. The decentralization initiated in 1988 with community forest management has been shown, at least in certain cases, to be cheaper than centralized management. In a study on the central Indian Himalayas, Somathan et al. (2009) reports that state forests cost “at least 7 times as much per hectare to administer as do council-managed forests”, while providing similar results in terms of forest preservation. This is consistent with the earlier findings in the literature showing that, under certain circumstances, local commons such as fisheries, forests and irrigation districts can be efficiently managed by local communities (Ostrom 1990). While such successful experiences do not necessarily extrapolate to other geographical areas, they do provide an indication of the social and economic gains of community management.

A recent study shows that India has strong forest monitoring capabilities across the developing world (Romijn et al., 2012). The study used, among others, indicators for existing monitoring capacities, challenges with respect to forest monitoring under particular national circumstances and technical challenges for the use of remote sensing. The study finds that forty-nine countries have a very large capacity gap, forty-six a large, medium or small capacity gap, and only four countries (Argentina, China, India and Mexico) a very small capacity gap. At the same time the study reports that India has “medium” remote sensing challenges. For further details on forest monitoring in India see Chauhan and Saxena (2012).

Despite the institutional progress made over the last decades, India faces considerable challenges in forest management. Due to lack of resources, not all forests are under JFMs or CFRs (Sharma et al. 2012). In some cases the demand for fuel wood overwhelms the regeneration capacity of local forests (Aggarwal et al. 2009; Nayak et al. 2012). Some SFM programs may require providing local communities with substitutes for fuel wood from natural forest, but this demands considerable public funding (Kohlin and Parks 2001). As is often the case in environmental management systems in developing countries, there is program overlapping and the competences of the different actors are not always well-defined. In this regard India is no exception and authors such as Sharma et al. (2012) have pointed out the need for policy reform.

Despite the increases in total forested area over the last twenty five years, the pressure on Indian forests has grown considerably. Table 2 shows that, the forest area per inhabitant and per rural dweller has decreased by around 0,15 Km² since 1991. This corresponds to a remarkable decrease of about 22% of forest area per inhabitant and of 16% per rural dweller. When looking at the evolution of dense forested area, the decreases are even larger. The underlying driver of these results is population growth, which was 39% (about 350,000 inhabitants) in the period 1991-2011. Current population trends suggest the challenges are going to be even greater in the near future.

Table 2 Changes in per-capita forest area in India in the period 1991 - 2011

Year	Forest area		Dense forest area	
	Km2 per inhabitant	Km2 per rural dweller	Km2 per inhabitant	Km2 per rural dweller
1991	0,712	0,962	0,432	0,583
2001	0,610	0,848	0,369	0,512
2011	0,557	0,808	0,326	0,472
% Change 1991 -2001	-21.7 %	-16,0 %	-24,6 %	-19,1 %

Source: Author calculations. Original data from Nayak et al. (2012) and World Development Indicators (2012)

While providing a general indication of the kind of pressure Indian forests currently face, Table 2 masks the existence of considerable geographical heterogeneity. Ravindranath et al. (2012) show that even though the total area under forest increased in the period 2003-2009, there was also significant forest loss; see table 3. This calls for analyses and strategies that look beyond aggregates and consider local scales as unit of analysis.

Changes in forest area as well as in timber volumes are measurements that have certain limitations. In order to know the actual contributions of changes in forest loss to changes in the wealth of the country (e.g. World Bank 2011), accounting prices for both market and non-market forest goods and services ought to be calculated. Gundimeda and Shyamsundar (2012) provide such estimates and calculate changes in forest wealth for the period 2001-2003; see Table 4. Forest wealth declined considerably between 2001 and 2003 (by Rs. 325 billion or about US\$6.5). While the total forest area increased in this period, a large proportion of forests changed from dense to open forest.

Table 3 Heterogeneity in changes in forest area in India in the period 2003 - 2009

	2003-05	2005-07	2007-09
Number of districts where forest area declined	130	174	118
Number of districts where forest area increased	112	164	162
Increase in forest area	327,268	200,200	327,300

Source: Ravindranat et al. (2012). Districts that exhibited no forest change are not considered.

Table 4 shows that economic growth and investments in other sectors of the economy are reflected in a relatively high increase in gross physical capital formation. This does not imply that one should not be concerned about forest loss. Firstly, those who are most affected by

forest loss, i.e. the rural poor, may not directly benefit from increased physical capital, which typically occurs in the cities. Nayak et al. (2012) explain that around 40% of the country's poor live in forest fringe areas. Secondly, natural capital and produced capital are not perfect substitutes and India, like any other country, requires a sufficiently broad productivity base that also includes human and social capital.

Table 4 Accounting prices and changes in forest wealth in India in the period 2001-2003

Accounting price of timber/m ³	7,016
Accounting price of fuelwood	1,019
Accounting price of NTFPs (Rs/ha)	7,631
Accounting price of carbon (US\$/ton)	20
Accounting price of recreation (Rs/ha)	65,193
Accounting price of genetic material (Rs/ha)	22,646
Loss in value of timber, carbon and NTFPs (million Rs)	-177,882
Loss in ecotourism and genetic diversity (million Rs)	-147,460
Total loss in forest wealth (million Rs)	-325,342
Gross physical capital formation (million Rs)	4,502,417

Source: Gundimeda and Shyamsundar (2012). NTFP corresponds to non-timber forest products

As suggested earlier forests are but one sector of the larger economy and what happens in other sectors may affect forests in ways that are often difficult to foresee. Notably, the Indian manufacturing and service sectors have grown considerably over the last twenty years. This has resulted in increases in incomes in both rural and urban areas. In this regard Gundimeda and Shyamsundar (2012) state that *“a quick review of village-level studies suggests that demand for fuel wood may not be very income elastic and is unlikely to decline in the immediate future as income and wealth increases in rural India. Thus, it is very important to manage forests better to ensure that any changes do not further aggravate rural poverty.”*

3. REDD+

REDD+ has emerged as a promising instrument that can overcome international coordination failures at providing the required funds for forest protection in developing countries. By anchoring forests to an issue that is of high priority in the international agenda, i.e. climate change, forests have drawn considerable attention in recent years. When analyzing the response of different actors to the REDD+ initiative, Angelsen (2012) states that REDD+ as “an idea” has been a success. The following sub-section describes how REDD+ came about within the context of the UNFCCC and how it has evolved since its beginnings.

3.1 From Kyoto 1997 to Doha 2012

It is recognized among policy makers and academicians that a good monitoring system and reliable information are prerequisites for the successful implementation of policy. Without

reliable information, the effectiveness of policy cannot be measured. Due to alleged difficulties associated with the measurement of carbon stocks and project additionally, forestry has played a limited role under the Kyoto Protocol's Clean Development Mechanism (CDM) (IPPC 1997).⁷ In the Marrakesh Accords of 2001⁸ afforestation and reforestation of (certain) deforested lands were included under CDM. However, due to strict requirements, only a small fraction of the projects submitted have been approved. At the COP11 in Montreal in 2005 the governments of Costa Rica and Papua New Guinea, with the support of other developing countries, requested to add the item *"Reducing emissions from deforestation in developing countries: approaches to stimulate action"* as part of the COP agenda. As a result of COP11 the secretariat invited the different countries to submit reviews and recommendations on this new item with a focus on scientific, technical and methodological issues. At the COP13 in Bali in 2007 REDD+ became an integral part of the UNFCCC negotiations. Decision 1/CP.13 (*"Bali Action Plan"*) calls for *"Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries."* The semi-colon initially implied that deforestation and forest degradation were to be given special status in terms of actions and policies. This was known as REDD (without the plus) and it underlined a difference between reduction of carbon emissions and enhancement of carbon stocks. Decision 2/CP.13 (Reducing emissions from deforestation in developing countries: approaches to stimulate action) spells out some of the details of the new concept. It *"Encourages all Parties, in a position to do so, to support capacity-building, provide technical assistance, facilitate the transfer of technology to improve, inter alia, data collection, estimation of emissions from deforestation and forest degradation, monitoring and reporting, and address the institutional needs of developing countries to estimate and reduce emissions from deforestation and forest degradation."* This calls for action has in fact provided support to a number of initiatives, including the UN REDD Program and Norway's International Climate and Forest Initiative (NICFI). The scope of these and other REDD initiatives are discussed in greater detail in the following section.

Table 5 illustrates how forestry policy may affect atmospheric CO₂ concentration via reductions of existing emissions flows (second column), or via enhancement of forest carbon stocks (third column). As mention earlier, the Bali Action Plan appeared to focus on reduced negative changes, i.e. REDD. Upon complaints from developing countries with relatively low deforestation rates, including India, the enhancement of carbon stocks through SFM were to be given a similar status to that of reduced deforestation and forest degradation. In 2009 the Chair of the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) adopted the term REDD+.

Table 5 From REDD to REDD+

⁷The CDM is the only mechanism under the Kyoto Protocol that allows Annex I countries to meet emissions reductions commitments through projects that reduce emissions in developing countries.

⁸The Marrakesh Accords (COP7 2001 Marrakesh) introduce the detailed rules for the implementation of the Kyoto Protocol

Changes in	Reduced negative change	Enhanced positive change
Forest area (area)	Reduced deforestation	Afforestation and reforestation
Carbon density (C/area)	Reduced degradation	Forest restoration, rehabilitation and sustainable management of forests

Source: Meridian Institute (2009). Adapted from Angelsen and Wertz-Kanounnikoff (2008).

At the COP 16 in Cancun 2010, Decision 1/CP.16, it was agreed that REDD+ would be implemented in three phases: 1) Development of national strategies or action plans, 2) Implementation of policies and measures and, 3) Payment for performance on the basis of quantified forest emissions and removals. Countries were also encouraged to develop a national forest reference emission level and a national forest monitoring system that provides information on environmental and social safeguards. Decision 4/CP.15, COP15 in Copenhagen, had emphasized that national monitoring systems should use a combination of remote sensing and ground based forest carbon inventories to measure forest carbon stocks and changes. Decision 1/CP.16 (Appendix 1) demands “*Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples*”. The United Nations Declaration on the Rights of Indigenous Peoples had been adopted in 2007. Of particular relevance for REDD+ is Indigenous Peoples’ Right “*to give or withhold their free, prior and informed consent to actions that affect their lands, territories and natural resource*”, which is now known as Free Prior and Informed Consent (FPIC); e.g. OXFAN (2010). Safeguards on biodiversity were also put forward in Decision 1/CP.16. so that, for instance, REDD+ actions do not result in the conversion of natural forests into plantations. This decision explicitly encourages countries to contribute to mitigation actions in the forest sector via SFM activities.

REDD+ does not only seek the attainment of different environmental goals but it also covers certain socioeconomic considerations that are important in their own right. Such diversity of goals adds new layers of complexity in the realization of REDD+, but are also important to gain the required political support for implementation. Financing options for implementing REDD+ was deferred to COP 17 in Durban 2011. Decision 12/CP.17 provides new and more detailed guidance on how to establish reference levels and safeguards, although the text remains rather general. Decision 2/CP.17 confirmed that in order to obtain result-based funds, relevant actions should be measured, reported and verified (MRVd). While general guidelines to establish reference levels have been developed (Decision 4/CP.15; Meridian Institute 2011a, 2011b) no general agreement on what the actual reference levels should be has been reached. Overall, UNFCCC have progressed in addressing some of the technical aspects of forest emissions and forest sinks. However, comprehensive funding architecture is still lacking. The Green Climate Fund⁹ was launched in Durban (Decision 3/CP.17), but actual contributing sources are yet to be secured.

⁹ “The Fund will promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change the needs of those developing countries particularly vulnerable to the adverse effects of climate change.” (GCF 2012)

The negotiations at COP 18 in December 2012 held at Doha have not yielded any significant progress on these issues either. There was a deadlock over negotiations on methodological issues in verification with Brazil and other developing countries advocating for internal verification process by the individual countries where Norway argued for an independent, transparent and internationally accepted verification mechanism (Das, 2012). There has not been much progress on matters related to REDD+ finance as well during COP 18 as the parties couldn't come to an agreement on this. These issues need to be resolved in future COPs to make REDD+ operational.

3.2 REDD+ current funding architecture

Studying how REDD+ funding is being channeled provides an overview of the current international architecture of REDD+. This approach has the advantage of being concrete. It should be first noted that REDD+ funding may be supplied via two different channels, namely a donor funded programme or a compliance market. In the former case REDD+ is funded on a voluntary basis by donor countries. In the latter countries participating in a carbon market have the opportunity to buy REDD+ credits as offsets of own emissions. So far REDD+ funding has only been provided by donor funded programmes. None of the existing international carbon markets allows for REDD+ offsets. Substantive differences between forest conservation and ordinary tradable goods, makes the emergence of a market for REDD+ credits problematic. Some view donor funded programmes such as the UNREDD program as a necessary step for the future implementation of REDD+ in a compliance market programs –see section 4 for a discussion on carbon compliance markets and REDD+.

The donor contributions to the UNREDD Program, whose initial purpose is to develop country readiness for a REDD+ mechanism, have increased at an average annual rate of 46% since its creation in 2008. Total accumulated contributions amounted to 118 million dollars in 2011 (UN 2011). Norway initiated this effort and has contributed about 90% of the resources, while Denmark, Spain and Japan joined at a later stage. The World Bank's Forest Carbon Partnership Facility (FCPF 2012), which was also initiated in 2008, has a fund for REDD+ readiness (USD230') and a carbon fund (USD205') that is to be used for actual forest conservation and enhancement. FCPF currently consists of 15 donor countries that have committed or pledged the mentioned resources.

While the efforts to consolidate a multilateral and unified REDD+ system are important in their own right, donor and recipient countries are using other tracks to exploit the potential of REDD+. NICFI, the facility through which Norway manages all its REDD+ initiatives, seeks to:

- Enter into large-scale partnerships with key forest countries to demonstrate that real action on a national level is possible and to encourage large scale emission reductions even before a REDD+ mechanism is agreed upon under the UNFCCC.
- Contributing to the design and establishment of an integrated architecture of multilateral REDD initiatives to help ensure broad and early progress (NICFI 2012).

These objectives clearly reveal a bilateral – multilateral architecture for channeling REDD funds. Norway's bilateral – multilateral strategy what has also been pursued by other donor countries. This is reflected in the typology of funds committed to REDD+ where approximately equal fund shares are being allocated through each type of channel. Table 6, shows information provided by donor countries on funds committed through REDD+ using bilateral or multilateral tracks.

Table 6 REDD+ Funding Tracks

Arrangement type	Funds in billion dollars
From Funder country To REDD+ Country	4.1
From Funder country To Institution (e.g. UN, WB)	3.9
From Institution To REDD+ Country	no – app

Source: Voluntary REDD+ Database (2011). Developing countries have contributed considerably in building REDD+ readiness with their own efforts. In Table 5 (and this section in general) we focus on external REDD+ funding.

As a general rule Norway seeks bilateral agreements with those countries that have already started a REDD+ process through the multilateral system. CIFOR (2012) explains that Brazil and Indonesia are among the countries with the highest number of REDD+ projects (over 31 projects each).¹⁰ Norway is in fact providing financial support for REDD+ activities in these two countries as they have some of the highest forest stocks and have traditionally faced important deforestation challenges. The third country with a relatively large number of projects is Peru, which is also located in the Amazon River basin. Political borders add a new degree of complexity in the deployment of REDD+. In the case of the Amazon forests for instance, bilateral agreements may inadequately address deforestation issues that occur at a regional scale. This suggests that in certain circumstances multilateralism may also be necessary at the recipient country level.

REDD+ funding has so far followed two tracks, namely bilateralism and multilateralism. Although projects undertaken through the multilateral system may have more legitimacy than others, consensus in this setting is often difficult to achieve due to the large number of parties and differing views involved. Developed countries that are particularly eager to get REDD+ started have found it convenient to work directly with recipient countries. It is believed that if bilateral agreements produce positive results in a relative short time span, this may encourage skeptical parties to join the forest conservation initiatives.

The current bilateral - multilateral architecture of REDD+ is consistent with an emerging literature suggesting that a patchy global international architecture for climate, as opposed to a unified architecture under the UN, is necessary to effectively tackle climate governance. Victor (2011) suggests that to the extent that the best climate governance strategies and actions are unknown it is best to allow a broader range of policy experiments by different actors. In this context the UN would act as an umbrella organization under which these policy experiments are carried out and diffusion of successful experiences takes places.

3.3 Expectations from donor countries: The case of Norway

NICIF has developed a real time evaluation of its financial contributions to National REDD+ processes in 5 countries, namely Brazil, Democratic Republic of Congo, Guyana Indonesia, Tanzania (NORAD 2011a). NICFI was launched in December 2007 and the first evaluation

¹⁰ The CIFOR database lists India as having 13 projects although. New projects are being implemented and are unlikely to be reflected in this database. TERI recently initiated the implementation of 6 pilot projects (TERI 2012).

round was carried out during 2010. NICFI supports REDD+ readiness or national strategies aimed at preparing countries for a payment mechanism. As section 4 illustrates such mechanism remains largely undefined. The criteria used in this evaluation provide a basis for accountability and synthesize the expectations of donor countries with regards to REDD+ (See Table 7).

Item 1 (National ownership) measures, among other things, the extent to which participatory processes have helped shaped REDD+ national strategies. Item 2 (REDD relevant policies, strategies, plans and actions) and item 3 (MRV capacity and capability) are, just as item 1, not ends in themselves. Activities under these criteria will eventually be reflected in changes in “outcome” criteria, i.e. items 4 and 5. Item 4 Deforestation and forest degradation measures natural key outcomes of any REDD+ intervention. In this regard, the Government of Norway recently supported the development of guidelines for REDD+ reference level (Meridian Institute 2011a, 2011b). On the other hand, item 5 covers objectives that, while important in their own right, are not strictly related to changes in carbon stocks. As discussed earlier a wide range of interest groups from different countries and diverse backgrounds have shaped REDD+ at UNFCCC negotiations. As a result, and in line with SFM principles, the overarching goals of REDD+ go beyond carbon emissions reductions.

Table 7 Norway’ evaluation criteria of its contributions to national REDD process

Criteria	Indicator
1. National ownership	Position of REDD in the national agenda Transparency and stakeholder inclusion of REDD coordination Civil society participation Private sector participation
2. REDD relevant policies, strategies, plans and actions	Policy addresses the key issue REDD strategy links well with national forest conservation programs Plans allocate adequate resources Actions are addressing key policy issues
3. MRV capacity and capability	Quality of national forest inventory Frequency of national communications to UNFCCC Quality assurance and quality control of verification
4. Deforestation and forest degradation	Rate of deforestation Rate of forest degradation
5. Livelihoods, economic and social development and environmental conservation	Share of forest-based income of rural family income Present or planned sharing of REDD payments among stakeholder groups

Criteria	Indicator
	Rights of indigenous peoples and local communities to land and forest sources
	Share of conservation forest of all forests
	Proportion of certified production forests
	Conservation included and applied in forest management guidelines

Source: NORAD (2011e) – Appendix I

Following the principles of FPIC, see section 3.1, explicit measurements of the impact of REDD+ on local livelihoods and indigenous groups are explicitly considered. The importance that socioeconomic factors have in this and future evaluations is highlighted by the fact that about 2/3 of REDD+ funding comes from aid budgets and is channeled through aid programs. This suggests that in some cases certain social safeguards will be given the same, or perhaps more priority than changes in carbon stocks. In this regard countries with a history of local community engagement in forest management and in SFM such as India (see section 2.1) may find it easier to access REDD+ funds.

3.4 Some implementation experiences

In this section we present some experiences from REDD+ implementation in Brazil and Tanzania, countries that have received financial support from the Norwegian government and are at different stages of implementation. A brief description of REDD+ activities in Indonesia and India is also provided.

In 2008 at COP14 in Poznan, Brazil announced that it would reduce deforestation on a voluntary basis by 80% below the average deforestation rate for the period 1995-2006, which was 195.500 KM2 hectares (NORAD 2011b). That very same year the Brazilian government created, by presidential decree, the Amazon Fund whose main objective was “to provide support to projects to prevent, monitor and combat deforestation, as well as for the conservation and sustainable use of forests in the Amazon Biome”; see Amazon Fund (2012a). The Fund brings together the demand and supply for forest conservation and serves as a bridge between the Brazilian Amazon and the international community. It is managed by the Brazilian Development Bank (BNDES). Project proposals may be submitted by public institutions, state-owned companies and NGOs (Amazon Fund 2012a). In 2008 The Government of Norway announced contributions to the Fund of up to 1 billion dollars. NIFIC has made donations in 2009, in 2010 and in 2012. Table 8 presents a list of contributors to the Fund and the amounts committed and received. It should be noted that the Amazon Fund is performance based and donor countries are given a diploma upon each contribution.¹¹

Table 8 Donations to the Amazon Fund (2008-June 2012)

¹¹ Donor countries are given a diploma upon each contribution. Each diploma states the value of the donations in terms of reductions of carbon dioxide emissions. For instance, in March 2012, the Kingdom of Norway was given a diploma worth 9 million tons of CO₂ for a contribution of 45.1 million USD that is about 5 USD per Ton of CO₂. Although this ‘price’ is not the result of a competitive process, it is interesting to note that it is just below the price in the European Union Emission trading system (EU-ETS), which is about 7 USD per ton of CO₂.

Donor	Donations Committed (USDx1000)	Donations Received (USDx1000)	Balance (USDx1000)
Norway	432,028	94,393	338,172
Germany	26,674	3,952	22,864
Petrobras	4,535	4,535	-
Total	463,237	102,880	361,036

Source: Amazon Fund (2012b)

Fund raising has been facilitated by a number of factors: strong commitment by the Brazilian government at the highest level, a remarkable reduction of greenhouse emissions from deforestation since 2005. Contributions by Petrobras, the Brazilian national oil company, are relatively small in size, but may have served as a signal to donors of the country's commitment to its REDD+ strategy.

The evaluations of Brazil's REDD+ processes and of NIFIC's contribution to these processes are positive. Most of the qualitative-quantitative indicators shown in Table 7 exhibited an improvement for the period 2007 – 2010. The report gives a good grade to national ownership as well as to REDD policy (criteria 1 and 2 in table 3) and it highlights that "*Brazil has an impressive system of monitoring, governance and enforcement*" (criteria 3). While Brazil scores well at reduced deforestation, the evaluators were unable to assess forest degradation and forest conservation due to lack of data. The socioeconomic indicators, criteria 5, were among the weakest indicators. In particular the indicator related to the rights of indigenous peoples and local communities is relatively low and did not change in the period of evaluations. This could partially explain the large difference between donations committed and donations received, forth column in Table 8. At the same time, it should be noted that in November 2012 a new payment to Brazil of about of \$176 million was approved due to a reduction of 27% in the deforestation rate between July 2011 and July 2012 (Norwegian Ministry of Environment 2012).

Some economic analyses suggest that Africa has a comparative advantage in the supply of REDD+ projects. Estimates of the opportunity costs of forests in the continent is relatively low as agriculture, one of the main drivers of deforestation, typically exhibits very low productivity levels (Kindermann 2008). At the same time however, and due to governance issues, implementation costs of REDD+ may be large. A study on the status and development of national forest monitoring capacities show that African countries exhibited the largest capacity gaps across the developing world (Romijng 2012). Using data from 2009, Cerbu et al. (2011) undertook a study on REDD+ demonstration projects and readiness activities across 64 countries developing world. It was found that government effectiveness was one of the most important determinants of the total number of readiness activities a country countries had in 2009. Surprisingly, agricultural revenue, while included in the analysis, did not emerge as an important explanatory factor. Most REDD+ activity in the African continent has been geared towards building readiness. Bellow we review some of the REDD+ readiness activities undertaken in Tanzania.

With a Gross Domestic Product per capita of about US\$1500, Tanzania is one of the poorest countries in the African continent. Forests and woodlands support about 87% of rural poor in the country and the deforestation rate is around 1.16%. Agriculture and demand for fuel

wood are among the main drivers of deforestation and forest degradation in the country (NORAD 2011d). Tanzania is part of the FCPF and the UNREDD program, although a large share of REDD+ readiness resources have been channeled via bilateral agreements with other governments. At this stage the largest benefit for Tanzania from being part of the FCPF and the UNREDD program is given by the opportunity to access knowledge and technical support. In 2011, and consistent with phase 1 of REDD+ implementation (Decision 1/CP.16 - COP 16 - Cancun 2010) Tanzania submitted to the FCPF its final Readiness Preparation Proposal (R-PP). A Second Draft of the National REDD+ Strategy is currently being circulated for comments. Tanzania's R-PP states that The National Carbon Monitoring Center (NCCM) together with the National Carbon Accounting/Assessment System (NCAS) will be established to coordinate REDD+ matters and pave the way for the implementation of R-PP and the country's REDD+ Strategy. Earmarked funds have been disbursed to civil society organizations to undertake pilot projects (REDD+ Readiness Factsheet: Tanzania 2012). The objectives of the demonstration projects vary widely and include a) Improve knowledge and scientific understanding of forests, b) build village-level, local government and civil society organizational capacity towards understanding REDD mechanisms, c) build mechanisms for benefit sharing and empowerment of communities, and d) Improve livelihoods and fuel wood availability to help address root causes of deforestation and degradation. Under the umbrella of the UNREDD Programme, a detailed analysis on the implementation costs of a fully-fledged REDD+ program in Tanzania has recently been prepared (LTS International 2012). This study covers opportunity costs, institutional costs and other transaction costs of REDD+. Project level cost estimates were developed to aid decision making and prioritization of resource spending so that the most cost effective REDD+ projects could be undertaken first.

Using data from 53 Tanzanian districts Fischer et al. (2011) compare the opportunity costs of forests against the cost of implementing policies that directly alleviate the demand for forest conversion. The authors conclude that increasing crop yields through the use of more fertilizer and improved seeds as well as subsidies to alternative cooking fuels (or developing plantations for charcoal fuel) can be cost-effective strategies for reducing deforestation. These results are in line with a recent report on existing REDD+ readiness plans in different countries, explaining that it is critical to look beyond the forest sector to design interventions that effectively affect deforestation drivers (Kissinger et al. 2012). Finally, it should be mentioned that the issue of unsecured land tenure is a major challenge in many Africa developing countries, including Tanzania, but it has not always adequately reflected in the R-PP submitted to the UNREDD Programme (Westholm et al. 2011).

Indonesia dominates in terms of forest cover (127,720,000 Ha in 2005) and deforestation in South East Asia (0.7 million ha/yr in the period 2000-2005). As a result, a large proportion of REDD+ readiness projects in the region are concentrated in the country (NORAD 2011c). In 2010 the governments of Norway and Indonesia signed a letter of intent where up to 1 billion dollars in Norwegian funding were pledged. REDD+ related institutions were practically non-existent as far back as 2008. The new funding was meant to boost the development and implementation of REDD+ activities. Preparation activities were to take place in the period 2010 – 2013, while performance-based payments could start from 2014. A REDD+ Agency that directly reports to the President has been created, as well as a MRV institution (Silori, 2012). Indonesia's National REDD+ Strategy was finalized in 2012 and its implementation is expected to take up to 3 years. Unlike Brazil, monitoring of actual rates of deforestation and rates of forest degradation still poses an important challenge in Indonesia (by 2010 a national reference level had not been established), although a number of projects have started to

provide site specific estimates of different carbon pools (NICFI 2011). Silori (2012) explains that despite the fact that considerable preparation is underway, Indonesia still faces coordination problems among different agencies and a lack of clarity on a number of issues such as land tenure.

Unlike Brazil, Indonesia or Tanzania, India is a low forest cover low deforestation country. As explained at length in section 2.2, India, while having a long tradition in forest management and community forest management, faces important challenges. National, state and community level consultations related to REDD+ have been carried out over the last two years. Similarly a number of REDD+ pilot projects in different types of forests are being implemented across the country (Sharma 2012). The National REDD+ Cell in the Ministry of Environment and Forest is the national REDD+ coordinating institution. The creation of similar cells at the state-level and the village-level has been proposed but is yet to take place (Sud et al. 2012). Sud et al. (2012) state that there is a lack of resources for moving forward with the implementation of REDD+ in the country. Unlike Tanzania, India is not part of the FPFC or the UN REDD Programme. Regarding existing safeguards Ravindranath et al. (2012) states *“India does not have a system of providing information on environmental and social safeguards. In order to effectively monitor safeguards, it will be necessary to evolve a clearly defined set of indicators and criteria for parameters such as forest governance structures, respect for rights of indigenous peoples, and full and effective participation of relevant stakeholders, along with a system to monitor these.”* Chauhan and Saxena (2012) highlight the need to build capacity at the local level so assessments of forest carbon stocks at the project level can be undertaken.

We have discussed how different countries have approached REDD+ according to national circumstances. It is clear that while project level activities are important, ownership at the highest levels of government, beyond forest and environmental ministries, is a key part of the processes. They not only enable coordination of national policies that directly or indirectly affect forests but also act as strong signal to the donor community. In fact addressing the drivers of deforestation and forest degradation are at the heart of REDD+ and local governments ought to recognize that these drivers often lie in areas outside the forest sector. As section 2.1 suggests the development of subnational REDD+ readiness activities and actions (e.g. the establishment of emissions reference levels) is particularly important in heterogeneous countries such as India.

3.5 Implementing REDD+ in India¹²

Forests in India have always held a special place in the socio-economic, cultural, and religious sectors of Indian society. Though blessed with diverse forest resources that support a rich diversity of flora and fauna, the geographical distribution and quality of forests is not uniform in India. India has 78.29 million hectare (Mha) under forest and tree cover (Forest Survey of India, 2011) which is 23.81 per cent of the total geographical area of the country. Of this total, forest cover constitutes 69.20 Mha (21.05 per cent), whereas tree cover is 9.84 Mha (2.76 per cent). However, improving the quality of forest cover is a major concern today in terms of density classes, since very dense forest covers, having canopy density more than 0.7, constitutes only 8.347 Mha (2.54 per cent), and medium-density forests with canopy density of 0.4–0.7, constitute 32.07 Mha (9.76 per cent). The remaining forest cover is open forest or scrub which requires to be rehabilitated. India’s forests are facing immense pressure due to unsustainable use of forest produce. Poverty and forest degradation are inextricably linked and curbing forest degradation requires convergence of various poverty alleviation policies

¹² This section builds on Sud et al. (2012b)

and schemes. The role of local communities is vital in not only addressing the drivers of forest degradation but also enhancing carbon stock through conservation, protection, and reforestation. The carbon stock of Indian forests in 2004 has been estimated by the Forest Survey of India (FSI) to be 6,663 metric tonnes (Forest Survey of India, 2011). Carbon stock in India's Forests has increased by 592 metric tonnes from between 1994 and 2004, but it can be increased significantly through the involvement of local communities. The institutional mechanism for REDD+ will leverage on the strengths of the existing forest management system in the country while also ensuring sectoral integration and inter-departmental coordination to address some of the key drivers of deforestation and forest degradation in the country.

3.5.1 Forest Management

The scientific management of forests in the modern era that dates back to 1864 started with the appointment of a German forester, DE Brandis, as the first Inspector General of Forests of the country, which subsequently led to the setting up of Forest Departments (FDs) across India. Thereafter, the process of large-scale survey of forests, preparation of working plans, and development of essential infrastructure started. Under the then prevailing socio-economic and technical situation, forests were viewed pre-dominantly as a revenue-generating resource for meeting the growing demand of timber for expansion of railways, shipping, and building other infrastructure. As a result, more emphasis was laid on harvesting of timber from forests on a commercial basis. However, the 1988 *National Forest Policy* brought in a major shift and enunciated that the principle aim of forest policy was to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which is vital for the sustenance of all life forms — human, animal, and plant. The derivation of direct economic benefit must be subordinated to this principal aim. However, removals from forests continued to occur in order to meet the increasing demand for forest goods and services. Inadequate investment in managing this unique and renewable resource, contributed to deforestation and degradation pressures.

3.5.2 Policy and Regulatory Framework

Since the 1860s, Indian forests have been managed on the principle of sustained yield of timber. A number of policies, legal and administrative measures were introduced over the years keeping pace with changing socio-economic conditions and recognition of the role of 'forests'. India adopted its first *National Forest Policy* in 1894, which was subsequently revised in 1952 and again in 1988. Similarly, forest legislation in India dates back to 1865, when the first Indian Forest Act was passed. Since then, the Act has been amended several times and has led to the Indian Forest Act of 1927, which is still applicable with state-specific amendments in some states, wherein some states have enacted their own Acts based primarily on the Indian Forest Act, 1927. Later on, several other legislations including the Wildlife (Protection) Act, 1972; Forest (Conservation) Act, 1980; the Environment Protection Act, 1986; and the Biological Diversity Act, 2002, were promulgated which, along with the Indian Forest Act, 1927, or the State Forest Acts, constitute the basic legislative framework for forestry, wildlife, and biodiversity. India has a multi-tier forest administration system comprising the Indian Forest Service constituted in 1966 under the All India Services Act, 1951, by the Government of India supported by State Forest Services and Forest Rangers, and frontline forestry personnel — the foresters and the forest guards — who have a reach in to the remotest and most interior parts of the country. The main mandate of these forest services is to protect, conserve, and manage forest and wildlife resources of the country by

ensuring scientific and sustainable management of forests (SMF) for various products and services under the policy and legal framework.

3.5.3 Local Communities and Participatory Forest Management

The intricate relationship between local communities and forests, based on the principle of co-existence, is integral to the conservation and sustainability of ecological systems. The people living in and around forests have been dependent on forests for their sustenance and livelihoods and have traditionally played a significant role in the conservation of forests. The National Forest Policy 1988 has recognized this symbiotic relationship between the tribal people and forests and advocated association of communities living in and around forests, including tribes, towards the protection, regeneration, and development of forest as well providing gainful employment to local people. Considering the fact that life of tribal and other people living within and near forests revolve around *forests*, the policy stressed that the domestic requirements of fuel wood, fodder, Minor Forest Produce, and construction timber should be the first charge on forest produce. JFM was started formally in 1990, as a participatory forestry programme based on the principle of care and share, and has taken roots in the country with over 1,00,000 JJFMCs covering more than 20 Mha of forests. This has formalized and strengthened the partnership between local communities and the FD in forest management. Based on the experience gained during last 20 years the JFM is to be evolved into JFM+ by adding the livelihood concerns of the local communities (GoI, 2012).

3.5.4 Institutionalizing REDD+ in India

India has a long history of scientific forest management, spanning over a century. This resulted in the formulation of a robust legal and regulatory framework and a formalized system of forest governance. Over the years, India has also built the technical capability for assessing its forest and tree cover; the Forest Survey of India (FSI) along with its local offices has been carrying out the national forest carbon stocks accounting for the country. The FSI has also been publishing a series of biennial assessment reports on the state of the forest cover in India since 1987. India is one of the few tropical countries where forest cover has stabilized over the years. A strong policy and legal framework with due recognition of the rights of local forest-dependent and tribal communities over forest resources under the umbrella of the Forest Rights Act (FRA) has been a significant contributing factor. Policy and legal instruments in the form of JFM programmes, provisions under the Tribal and Other Forest Dweller (Recognition of Rights) Act, 2006, Biological Diversity Act, etc., aim at safeguarding and ensuring the rights of the tribes and forest dwellers while enabling the local communities to be key players in local-level governance of the natural resources. JFM has been fairly successfully involved communities in protection and management of forests and has recently been integrated into more democratic organizations of local governance like the Gram Sabha. Today, JFM is gradually evolving into JFM+ by involving the livelihood concerns of the forest-dependent communities along with protection and management of forests.

The broad institutional framework for implementing REDD+ is already in place. However, to be eligible for REDD+, a system need to *be place for Forest Carbon Accounting (FCA), Monitoring, Reporting and Verification (MRV), social and environment safeguards among other specifications.* The institutional mechanism and the governance structure needs to be strengthened by enhancing capacity for operationalizing REDD+.

REDD+ will not only help addressing capacity gaps under the current forest management system but most importantly would benefit the local forest-dependent communities. The

financial incentives generated through carbon added or carbon saved will supplement the incentives already derived by JFMCs through the harvesting of Non-Timber Forest Produce (NTFP) and would help support livelihoods of communities and contribute to overall socio-economic development besides. The incentives received from REDD+ are to be passed on to the local communities involved in protection and management of the forests to ensure sustained protection of India's forests. India's submission to the UNFCCC (2011) states its commitment to transfer the REDD+ benefits to the local, forest-dependent, forest-dwelling, and tribal communities who are contributing to forest conservation and enhancement of forest carbon stocks

3.5.5 Institutional Arrangement

In accordance with the Forest Principles that were agreed upon during the Earth Summit in 1992, the REDD+ architecture that is being discussed at the international level, takes cognizance of the sovereign rights of the nations to design and implement nationally appropriate policies and measures. The institutional mechanism at the international level, while providing overall oversight for REDD+ mechanism, will incentivize measurable actions on REDD+ that are in accordance with the objectives of the UNFCCC. Therefore, the COP to the UNFCCC needs to have provisions for balanced representation from both developed and developing country parties to ensure transparency, equity, and accountability in the decision-making process.

At the national level, a planned and coordinated approach with active stakeholder engagement will help develop technically sound and locally relevant strategies. The National REDD+ Cell set up at the Ministry of Environment and Forests (MoEF) will play a key role in the design and implementation of REDD+ strategies at the national and sub-national level which are consistent with the agreed principles of framework convention on climate change. The National REDD+ Cell will coordinate and guide REDD+ related actions at the national level, and engage with the State Forest Departments (FDs) to collect, process, and manage all relevant information and data relating to FCA. It would also help identify REDD+ opportunities in different regions and work with SFDs for REDD+ project development. The Cell would also assist MoEF and its affiliated agencies in developing and implementing appropriate policies relating to REDD+ implementation in the country, mobilizing and disbursement of resources, and will engage with centres of excellence to provide technical guidance and support to the states, as required. The Cell would also actively participate in the deliberations of the UNFCCC on REDD+.

A State REDD+ Cell could be set up in the State FD for overseeing the project preparation and implementation by the Joint Forest Management Committees (JFMCs) or Village Forest Protection Committees (VFPCs). It shall also be responsible for ensuring that projects are designed in compliance with the national guidelines and are eligible for financing. In addition, the State REDD+ Cell shall organize training and capacity-building seminars and workshops for officials of the SFD and village-level institutions through Forest Divisions which will be the main implementing agency for REDD+ programmes on the ground.

The village-level forest governance unit shall be responsible for REDD+ project formulation. The JFMCs and VFPCs could directly be involved in the implementation of REDD+ projects under the technical guidance of the Divisional Forest Officer concerned or his representatives. The Gram Sabha will be the centric body to constitute the JFMC for conservation, protection, and management of forests, with benefit sharing from forests on the principle of sustainable harvests as laid down in the management plan of the respective

area within their jurisdiction. The FD shall provide technical guidance to the Gram Sabha, and also monitor implementation of the management plan.

Monitoring, Reporting and Verification of the REDD+ projects shall be carried out by independent experts not involved in any of the processes of preparing the forest carbon stocks inventory. For conducting the evaluation, they will be supported by the National and State REDD+ Cell. The data on changes in forest carbon stocks for estimating forest degradation can be collected using Remote Sensing (RS) or Geographic Information system (GIS) along with required ground 'truthing' (actual measurements on the project site). To ensure transparency, provisions will be made to involve and engage local communities, civil society organizations, and other stakeholders, who will be trained by the FSI and FD on technological, methodological, policy, and financial aspects of MRV processes and procedures. The MoEF may designate centres of excellence to support both national as well as state REDD+ Cells. These centres of excellence will provide capacity-building support and perform other facilitating functions as may be required. Involvement of grass roots or civil society organizations will also help raise awareness on the issue among forest-dependent communities.

3.5.6 Strengthening the Local-level Institutions

Local institutions play an enormously significant role in forest conservation and its sustainable utilization of forest resources. They also have the local acceptance that is essential for policy uptake. The institutions dealing with forests at the local level are JFMCs (known by different names in different states), Van Panchayats (Uttarakhand), traditional village-level institutions or Village Councils (Schedule VI area); and Biodiversity Management Committees, Forest Committees set up under Rule 4 of the Forest Rights Act, etc. In addition, Self Help Groups (SHGs) or Common Interest Groups (CIGs) have also been set up at the village level to promote forest-based livelihood activities. Since JFMCs have certain limitations such as tenurial insecurity, inadequate silvicultural development, restricted harvesting, lack of legal back up and market access, therefore they need to work in coordination with the Gram Sabhas or Panchayati Raj Institutions (PRIs). The Scheduled Tribes and Other Forest Dwellers (Recognition of Forest Rights) Act, 2006, empowers Gram Sabhas with the ownership of Minor Forest Produce and the responsibility to set up institutions to see that the individual and community forest rights are strengthened.

Village-level institution for protection and management of forests with technical guidance from the FD need to be set up by the Gram Sabhas. This would not only help in strengthening the Gram Sabha, but would also help in necessary convergence of resources and integrated planning for implementing REDD+ at the village level that would surely benefit all stakeholders. Leadership provided by the committees of the Gram Sabha and the SHGs would contribute to strengthening of the Gram Sabha.

REDD+ has to be implemented without undermining the needs of the local forest-dependent communities, however, this has to be based on the principles of sustainability. Livelihood activities and enterprises as well as protection of forests have often been effectively addressed at the cluster/sub-landscape level, led by product-based federations of SHGs and CIGs working as livelihood promotion groups, which need to be encouraged and facilitated along with village-level committees including JFMCs/Van Panchayats/Biodiversity Management Committees for forest protection, conservation, and livelihood activities in

forest fringe areas. Therefore, the JFMC, 13 as a committee of the Gram Sabha, needs to be strengthened and appropriately empowered to protect and manage forests as well as act as the primary agency for implementing REDD+. This will necessitate a review of the structure and role of the Forest Development Agencies (FDA) to make them primary district or Forest Division level institutions and contribute to decentralized forest governance and provide valuable services for forest conservation and improving livelihoods of people living in and around the forests. This would further help achieve poverty eradication objectives while enhancing carbon sequestration potential. The function of the FDA will be to facilitate demand-based and inclusive (participatory) planning and implementation of forest conservation and community development activities by the local bodies mandated by Gram Sabha. It will need to create partnerships with local NGOs/CBOs, academia, PRIs, research and training organizations, people's representatives, media, and government line agencies to carry out its function and to strengthen forest governance. In order to carry out the above functions on ground, the FDA, as an institution would need to be strengthened with appropriate capacity building through a well thought of institutional arrangement, and adequate infrastructural support.

The Forest Department in collaboration with other line departments, like Tribal Welfare, Panchayati Raj, Social Welfare, Rural Development, Education, Electricity Departments should take up programmes for capacity building of the local community institutions as a long-term measure to help them effectively implement REDD+ and commence forest-based livelihood enterprises. SMF will require good skills and knowledge in inventories, adaptive silvicultural practices, and sustainable NTFP harvesting and monitoring of impacts. Traditional knowledge, forestry science, and Information and Communication Technology will promote capacity-building initiatives.

The State Forest Departments (SFDs) would act as an 'enabler' in addition to its statutory role in protection and management of forests and to ensure compliance with technical prescriptions of REDD+ with the active role of local communities. The SFDs have to prepare themselves for a new role which is more inclusive, facilitative, development centric, educative and supportive to local communities in enhancing forest resources, with a proactive role of the MoEF, Government of India. The engagement of community institutions in facilitating field actions will require sensitization of the FD officials and frontline staff. Capacity building of frontline staff, on a regular basis, to carry out the emerging role will have to be given high priority. Teams of subject-matter specialists at the level of revamped FDAs could bring in new knowledge and skills.

3.5.7 Remarks on REDD+ implementation in India

In addition to the institutional mechanism being negotiated at the international level, implementing REDD+ at the ground level needs to be backed by strong institutional support at the national, state, and local (JFMC/Gram Sabha) level. The entities that will be implementing REDD+ activities at different levels need to function in a well-coordinated manner in order to take decisions and incentivize actions that are in alignment with the national policies and internationally agreed objectives. Achieving the desired results requires adequate capacity support in terms of dedicated professional staff, technical base as well as provision of adequate financial resources.

¹³ The JFMC will be set up by the Gram Sabha. Its constitution and processes need to be harmonized with the provisions as laid out in the State Panchayat and PESA 1996 legislation.

Frequent and focused trainings can be organized for local institutions on cross-cutting issues and resource management highlighting their role as facilitating agencies. Orientation programmes on REDD+ could be made mandatory for in-service candidates, officials from various sectors and community foresters. A mechanism by means of which regular technical guidance can be provided to officials of the FD and local-level institutions needs to be established by MoEF.

National-level Institutions that have been working in the forestry sector and which can support REDD+ activities need to be identified and strengthened. These can play an important role in providing the required technical inputs and undertaking capacity-building exercises on issues such as MRV, safeguards, assessment of carbon stock among others.

An inter-departmental coordinated approach is required to address the various drivers of deforestation and forest degradation that lie outside the forestry sector as well as cater to the concerns of different stakeholder groups. This demands coordinated efforts by all sectors to align their policies and activities by means of mandates, procedures and capacity to meet such accountabilities. This will also ensure that the actions under existing policies and programmes of various departments that have linkages and overlaps are suitably modified/strengthened for realization of goals under SMF.

It is also important to open effective channels of communication between the forest-dwelling or forest-dependent people and the government agencies. It is a statutory requirement under the FRA to have Gram Sabha based forest governance. Also, the National Mission for a Green India document states that committees set up by the Gram Sabha under FRA will be centrally engaged for implementation of Mission. Similarly, for REDD+, the Gram Sabha will be the overarching village-level institution to oversee and implement REDD+. The FD along with the local-level forest governance units will play a key role in sensitization and capacity building of the local people so they can reap maximum benefits from forest conservation activities in their area. The Gram Sabha and JFMCs with technical support from the FD are principal agencies in decentralized management of forests. These institutions need to be strengthened for effective decision making and planning to be inclusive and responsive to the needs of the local communities for the design of the REDD+ architecture.

The FD at the district level will provide the Gram Sabha with technical, monitoring, and legal support. The State REDD+ Cell will function as a link between the district-level authority and the National REDD+ Cell to incentivize measurable action at the field level. The National REDD+ Cell will be engaging at the international level to ensure that the REDD+ activities undertaken at the national level are in accordance with the principles agreed under the Framework Convention on Climate Change and are eligible for international support.

While in the REDD+ readiness phase, fund-based mechanism for REDD+ projects is recommended for supporting REDD+ activities, but later possibilities of a market-based mechanism could be explored. The National Mission for a Green India may be used as an opportunity to have a fund-based mechanism for financing REDD+ projects. Financial assistance may be provided to communities for preparing the baseline and later their efforts in forest conservation can be compensated on the basis of assessment of carbon stock and implementation of SMF.

4. Carbon compliance markets and REDD+ finance

Countries that finance REDD+ initiatives cannot currently use the induced emissions reductions as offsets for their own emissions, but they may be able to do so in the future. If

this occurs, nations (or group of nations) will be able to claim property rights over carbon offsets generated through REDD+. For the time being, countries that are actively financing REDD+ initiatives and conservation efforts do it on a voluntary basis. Further details on the inclusion of REDD+ in a carbon market and its potential for REDD+ are provided in the following section. Pilot initiatives of the type described in section 3.4 constitute important steps in the process of institutionalizing REDD+. Scaling up REDD+, in order to make it an effective mitigation strategy to combat climate change, demands broader international involvement as well as financial resources (NORAD 2011a). Such support may be harnessed by allowing REDD+ offsets to be used as credits in compliance carbon markets. Forest related offsets are not allowed in the EU ETS, the largest carbon cap and trade program in the world. The CDM of the Kyoto Protocol, in practice, does not cover forest conservation. Large differences in carbon abatement costs between forest related activities and other sectors suggest a possibly large demand for REDD+ offsets in a carbon compliance market. The inclusion of a relatively cheap abatement technology such as REDD+ in cap and trade programs is expected to generate a drop in the prize of carbon credits and an overall reduction of abatement costs to reach a given pollution target.

While potentially beneficial for forest conservation, the possible inclusion of REDD+ in carbon markets is yet to gain wide support in international negotiations. Some large developing countries, including some with significant forested areas such as Brazil, are skeptical of this approach. One of the main arguments against inclusion is that REDD+ credits would enable Annex I countries to buy their way out of one of the most important challenges posed by climate change, namely the de-carbonization of industrialized economies (Eliasch 2008). Allowing Annex I countries to meet existing carbon reduction commitments generates surpluses in international markets that are not evenly distributed. This is, naturally, another source of resistance.

In a recent simulation exercise Angelsen (2012) illustrates how REDD+ credits may over flood a (fictitious) global carbon market. With a relatively stringent cap (where for instance the EU and the USA are to reduce carbon emissions by 30% and 5% below 1990 levels) the equilibrium carbon price would drop by about 60% to 7USD per ton of carbon, while deforestation emissions are reduced by 17-25% below business as usual. Since such low carbon price will not foster green energy innovations in the developed world, it is likely to be unacceptable to important developing countries.¹⁴ As mentioned earlier the prize of EU ETS is about 7 USD per Ton of carbon dioxide and is often criticized as being too low. At the same time the authors estimate that reaching a 2 degree target would cost up to 57% more were REDD+ not to be part of a carbon market.

Angelsen et al. (2012) present a number of policy options for the inclusion of REDD+ in carbon markets that attempt to prevent the crowding out of other mitigation options. The most relevant suppliers of REDD+ credits in this modeling exercise are Brazil, Indonesia, the Rest of South America and the Rest of South East Asia. The policy options analyzed include restrictions on the supply and demand of REDD+ credits that limit the number of REDD+ credits a country may sell or buy. Similar to existing CDM rules, Annex I countries may only be allowed to offset a limited proportion of emissions with REDD+ credits. An additional option is to include a discount factor between forest and non-forest emissions. A unit of carbon emission generated in the manufacturing sector may, for instance, be offset by

¹⁴ It should be noted that the authors assumed that 2/3 of emission reductions must be done domestically for Annex I countries so in a market without restrictions the price should be lower.

a reduction of at least 1.5 units of carbon in reduced deforestation. This, naturally, makes REDD+ credits relatively more expensive than own reductions and other types of credits. The authors conclude that the different options analyzed can effectively deal with some of the concerns associated with over-flooding and the inclusion of REDD+ in carbon markets. It should be noted that although a global carbon market may not emerge in the short term there may be some scope for using the above mentioned strategies in regional carbon trading systems.

5. Conclusions

Forests have been the object of discussion in a number of international fora over the years. Despite the long list of forest-related agreements, there does not exist an overarching binding forest agreement that covers the services provided by forests in a unified manner. Incentives to free-ride on the conservation efforts made by others have been listed as one of the possible reasons why an internationally coordinated effort on forest preservation has not taken place. Also, the positions taken by different countries in international negotiations have traditionally emphasized those aspects of forests that are closer to national interests. As a result, funding to promote forest conservation and SFM has not been commensurable with the local and global benefits provided by these ecosystems.

In recent years forests have drawn considerable attention within the context of climate change, a topic of high priority in the international negotiations agenda. REDD+ emerged in 2007 as part of the UNFCCC negotiations. It seeks to compensate local governments and communities for reduction of deforestation and forest degradation as well as for the enhancement of carbon stocks via SFM. It is to be implemented in three phases: 1) development of national strategies or action plans, 2) implementation of policies and measures and, 3) payment for performance on the basis of quantified forest emissions and removals. A large number of developing countries that may be eligible to benefit from the REDD+ instrument, including India, are in stage 1) and have initiated what has become to be known as REDD+ readiness activities. Countries such as Brazil are in a more advanced stage of implementation and have already received performance based payments.

The international community has mobilized readiness funds to lay down the foundations for REDD+ implementation. These funds are being partly channeled through the multilateral system with initiatives such as the UN REDD Program and the World Banks' FCPF. However, bilateral agreements between developed and developing countries have emerged as an important and effective way to raise REDD+ readiness funds. Norway, the developed country that has committed the most resources to REDD+ readiness and implementation, has entered into large scale bilateral agreements with a number of countries. The current bilateral - multilateral architecture of REDD+ is consistent with an emerging literature suggesting that a patchy global international architecture for climate, as opposed to a unified architecture under the UN, is necessary to tackle climate governance effectively. These funds can support readiness activities in developing countries as the

Despite several achievements in forest management, the current institutional mechanism needs to be revisited to for implementing REDD+ projects in India. The broad institutional framework for implementing REDD+ is already in place. However, to be eligible for REDD+, a system need to be place for Forest Carbon Accounting (FCA), Monitoring, Reporting and Verification (MRV), social and environment safeguards among other specifications. The institutional mechanism and the governance structure needs to be strengthened by enhancing capacity for operationalizing REDD+. There is also a need for sectoral integration

and inter-departmental coordination to address some of the key drivers of deforestation and forest degradation in the country.

Capacity building activities at national, state, village, and project levels are need to be up-scaled. Capacity building is a key requirement for the REDD+ readiness process. Capacity has to be built of officials at all tiers of forest governance, of the supporting institutions and the local forest dependent communities, on various issues ranging from general awareness about forest policies and programmes to the benefit-sharing mechanism under REDD+, MRV mechanism, and social and environmental safeguards. The role of local communities is vital in not only addressing the drivers of forest degradation but also enhancing the carbon stock through forest conservation, protection and reforestation.

Monitoring of environmental and social safeguards is yet to be addressed. All these activities require the mobilization of human and financial resources. Experiences from countries such as Brazil and Indonesia show that in order to effectively harness REDD+ funds, international forest policy should be prioritized at the highest levels of government and beyond forestry and environmental ministries. India is not a part of the FPFC and the UNREDD, institutions that could facilitate the process of building REDD+ readiness.

If REDD+ is to establish itself as an effective climate mitigation instrument, the international community needs to demonstrate that it works effectively on the ground. We below identify a number of reasons why India can be in the position to showcase REDD+.

First, to the extent that around 2/3 of existing REDD+ funding is channeled as development aid, socio-economic safeguards are of particular importance in the current international architecture of REDD+. For a number of years, the socio-economic dimensions of forest management and SFM have played an important role in Indian forest policy. Since the introduction of the 1988 Forest Policy, the rights of local communities and their ability to benefit from forests have been prioritized in India. Initiatives such as the JFM, which was introduced in 1990 and is based on partnerships between local communities and the government, have shown that enhanced local livelihoods and healthier forests go hand in hand. These earlier experiences have been shown to be cost effective and will greatly facilitate the process of building REDD+ readiness and help the country face different challenges posed by population growth and increased demand for forest produce.

Second, in order to obtain results-based funds (stage 3 of REDD+ implementation) actions should be measured, reported and verified (MRVd). India already put in place one of the most advanced forest monitoring systems in the developing world. This system, along with improved ground based inventories, will allow an evaluation of REDD+ initiatives in terms of changes in forest cover and changes in carbon stocks.

In India, the challenge before the forestry sector is not so much related to checking deforestation as it lies in managing degradation. It is particularly difficult to curb forest degradation due to widespread poverty, and overwhelming dependence of local communities on forest resources for subsistence and livelihood. Even introducing new policies and schemes to reduce the dependence on forests would be a slow process subject to myriad operational challenges. As a result, MRV of forest degradation presents much greater challenges in terms of technical and cost implications as evaluating carbon emissions from degradation would require extensive on-site monitoring as remote sensing has its limitations (Foody, 2002). Although India possesses an established system of monitoring Sustainable Forest Management (SFM) activities by means of eight criteria and forty-three indicators

developed under the Bhopal-India process (1998); new techniques and methods need to evolve for measuring aspects such as leakage and additionality of forest carbon stocks.

Third, it is widely believed that since aggregate changes in forested area over recent years have been positive, India can greatly benefit from REDD+ for conservation and sustainable management of its forests resources in addition to the incremental increase in forest stocks. In fact this has greatly influenced the country's position in international negotiations -India was instrumental in the evolution from REDD to REDD+. On the other hand, recent studies show great geographical heterogeneity in changes in forest cover in the country. This suggests the importance of constructing sub-regional, as opposed to national, baselines in order to consider the possibility to access REDD+ funds based on reduced deforestation - and possibly reduced forest degradation. The bulk REDD+ funding is currently going to countries with traditionally high rates of deforestation. However, this need to change as conservation comes with significant opportunity cost for developing countries, as reserving forests implies foregoing the benefits that would have been generated by exploiting these resources, or from adopting alternative land use practices. Further, the on-site benefits of forests are lower than the potential benefits of alternative land uses.

Fourth, while readiness activities related to REDD+ have begun to emerge around the developing world, key policy design issues remain unresolved. Notably, with the recent failure to reach a binding Post-Kyoto Agreement at the COP17 in Durban in 2011, there exists large uncertainty regarding where the necessary funding is going to come from for a fully-fledged REDD+ - one where payment for performance on the basis of quantified forest emissions and removals takes place. It is clear that the funds to build readiness can be instrumental in building local capacity. At the same time, a national forest management system that solely builds on readiness funds runs the risk of collapsing if future climate negotiations and agreements fail to provide the required funding. Unlike in many other developing countries, this risk in India is minimized as the country has a long history of SFM implementation and its forest management institutions when compared to other countries, are relatively strong.

Main acronyms

CBD	Convention for Biological Biodiversity
CDM	Clean Development Mechanism
COP	Conference of the Parties
EU ETS	European Union Emissions Trading System
FCPF	Forest Carbon Partnership Facility
FDA	Forest Development Agencies
FD	Forest Department
FPIC	Free Prior and Informed Consent
IPCC	Intergovernmental Panel on Climate Change
JFM	Joint Forest Management
JFMC	Joint Forest Management Committees
MoEF	Ministry of Environment and Forests
MRV	Measured, Reviewed and Verified (emissions reductions)
NICFI	Norway's International Climate and Forest Initiative
NORAD	Norwegian Agency for Development Cooperation
REDD	Reduced emissions from deforestation and forest degradation
REDD+	Reduced emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
R-PP	Readiness Preparation Proposal.
SD	Sustainable Development
SFM	Sustainable Forest Management
SFD	State Forest Department
UNFCCC	United Nations Framework Convention on Climate Change
VFPC	Village Forest Protection Committees ()

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