

***REDD+ Design in Cambodia, Indonesia and Mexico:
Lessons to Inform International REDD+
Policy Development***

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This report was prepared by Leticia Guimaraes, Matthew Ogonowski and Diana Movius of the Center for Clean Air Policy (CCAP). It is based on the results of CCAP's REDD+ policy analysis projects conducted in 2009-2010 in Cambodia, Indonesia and Mexico in collaboration with a number of government and research partners. The full country reports are available [here](#). Editing and review of the document was provided by Saba Raza.

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1.0 INTRODUCTION

Land-use change, particularly deforestation and forest degradation in tropical countries, contributes approximately 17 percent of total global emissions of greenhouse gases (GHGs) annually (IPCC, 2007). Without tackling forest loss, it is highly unlikely that GHG concentrations can be stabilized at a level that avoids the worst effects of climate change. Scientific evidence indicates that in order to avoid dangerous climate change (i.e. warming greater than 2°C by the end of the century), deforestation will need to be reduced by at least 50 percent by 2020 and global forest cover loss halted by 2030 (Eliasch, 2008). Hence, tackling deforestation and forest degradation in the short-term is essential for successful climate change mitigation.

The Center for Clean Air Policy (CCAP) aims to support the development of international and domestic frameworks that provide substantial, predictable, results-based and long-term emission reductions and financial flows to developing countries committed to reducing emissions from deforestation and forest degradation (REDD+).¹ At the international level CCAP is contributing to the creation of a support framework through its work at the United Nations Framework Convention on Climate Change (UNFCCC) meetings and ongoing roundtables and consultations with senior-level climate negotiators. At the ground level, CCAP builds local capacities to help prepare key developing countries -- Cambodia, Indonesia and Mexico -- to participate in a post-2012 international REDD+ regime through design and implementation of national and sub-national REDD+ plans.

The Parties to the UNFCCC have over the last five years advanced towards an agreement on REDD+. Meanwhile, there are many initiatives underway in developing countries to tackle deforestation and forest degradation. These initiatives range from government policy actions and legislation to local projects, with environmental, social and economic objectives. Some of these initiatives can serve as the basis for the bottom-up implementation of a national REDD+ strategy and in other developing countries. Furthermore, insights from these in-country experiences can inform the design of the international REDD+ mechanism and ensure that the international regime is consistent with the reality on the ground. This paper aims at providing insights to international policymakers to help guide their decisions on REDD+, by presenting the implications of CCAP's work in Cambodia, Indonesia and Mexico for the design of both domestic REDD plans and an international REDD+ mechanism.

2.0 THE CANCUN REDD+ AGREEMENT

Following its inclusion in the climate change agenda in 2005 at COP 11 in Montreal, REDD has been the object of discussions during many UNFCCC meetings (see Annex 1 for details). This process culminated in an agreement reached at COP 16 in Cancun in 2010. The safeguards and guiding principles outlined at COP 15 in Copenhagen were included in Annex I of the Cancun Agreement, including: promotion of actions that complement or are consistent with the

¹ Climate change mitigation actions in the forest sector including reducing emissions from deforestation, reducing emissions from forest degradation, conservation of carbon stocks, sustainable forest management and enhancement of forest carbon stocks.

objectives of national forest programs; transparent and effective national forest governance structures; respect for the knowledge and rights of indigenous peoples and members of local communities; the full and effective participation of relevant stakeholders; actions consistent with the conservation of natural forests and biological diversity; actions to address the risk of reversals; and actions to reduce displacement of emissions (leakage).

The Cancun decision also requests developing countries to address drivers of deforestation and forest degradation, land tenure, forest governance and other issues, ensuring the full and effective participation of relevant stakeholders, especially indigenous peoples and local communities. The Cancun Agreement states that REDD+ should be implemented using a phased approach, and allows sub-national activities as an interim measure. The agreement requests developing countries aspiring to do REDD+ to develop a national strategy or action plan, a national reference emissions level, a robust and transparent national (or interim sub-national) forest monitoring system, and a system for providing information on how safeguards are being addressed.

Specific issues regarding financing, reference levels and other issues were left for future negotiations. In the meantime, the Cancun Agreement requests the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) to explore financing options for the full implementation of performance-based REDD+ actions. In addition, the Subsidiary Body for Scientific and Technological Advice (SBSTA) is asked to develop modalities for the development of reference levels, guidance for providing information on safeguards, and modalities for measuring, reporting and verifying forest-related emissions reductions and removals and carbon stocks.

3.0 CCAP COUNTRY STUDIES

In 2008, with the generous support of the Norwegian Agency for Development Cooperation (Norad) CCAP launched its *Forestry and Climate Change Program*. CCAP conducted a REDD+ policy development project in Cambodia in 2009-2010; companion projects in Indonesia and Mexico were also launched in that period and are ongoing. CCAP works in these countries in close collaboration with high-level international forest negotiators, in-country forestry and REDD+ administrators and other stakeholders. The goal is to understand the local drivers of deforestation, identify potential solutions and the financial support required, and assist governments with designing policies that will provide the foundation for successful implementation and integration of REDD+ programs, at both the national and sub-national levels.

3.1 Cambodia

The Royal Government of Cambodia (RGC) contains some of the most important forest ecosystems in Southeast Asia, with approximately 10.7 million hectares of forest in 2006, covering 60 percent of the country's land area. The RGC is committed to national REDD+. The country submitted its Readiness Project Idea Note to the Forest Carbon Partnership Facility (FCPF) in 2009 and is completing its Readiness Preparation Plan. Since 2010 Cambodia has also been a partner with the UN-REDD program. A number of REDD+ pilot projects are

underway as well (e.g., the Oddar Meanchey and Seima projects). Cambodia's forests remain under threat however from illegal logging, population expansion, migration, agriculture, infrastructure development, mining and other drivers. As a result, the annual deforestation rate was estimated at 0.8% from 2002-2006.

In 2009-2010 CCAP conducted a REDD+ policy analysis of reference levels and opportunity costs of agricultural options for a key carbon-rich region in Western Cambodia: the coastal lowlands of Koh Kong province. This study also developed a detailed policy blueprint for improving Protected Areas systems and enhancing carbon stocks in Cambodia. The main objective of this study was to contribute to the design of a national REDD+ strategy in Cambodia by providing key policy elements needed in the current process of developing a REDD+ Roadmap. This work was a partnership with the Ministry of Environment (MoE). CCAP also conducted discussions and consultations with other agencies and organizations involved with land-use and natural resources management in Cambodia.

This CCAP study analyzed the opportunity costs of preserving carbon stocks in the Koh Kong province study area for the 2010-2030 time period. Three price scenarios were modeled for soybeans, maize, sugar cane and rubber: annual prices for each crop held constant in real terms; prices increasing at the annual average growth rate of 2000-2010, up to a maximum; and prices modeled by regressing against GDP per capita, export prices and oil prices. A representative target area of 44,000 hectares containing an estimated 12.8 MtCO₂e was the subject of the analysis. CCAP found that the total average opportunity cost in the Koh Kong province target area ranges from \$5 to \$16/tCO₂e (see Table 1). The average opportunity costs for the selected crops in the case study area are therefore higher than prices for REDD+ credits currently available on the voluntary market (less than \$5/tCO₂e), but well within the range of future prices that would be expected on a future global compliance market (for example, at present carbon prices in the EU ETS are around \$20/tCO₂e). Sales of carbon credits on a future compliance market are therefore likely to cover most or all of the opportunity costs of preserving carbon stocks, potentially making investments in REDD+ more attractive for local farmers in this area.

Table 1: Total opportunity cost and average cost per ton of carbon in the study target area

Crop^a	Total opportunity cost (million 2008 USD)^b	Average cost per ton of carbon preserved (\$/tCO₂e)
Soybean	\$65 - \$111.3	\$5.1 - \$8.9
Maize	\$97.6 - \$191.6	\$7.6 - \$15.0
Soy/ Maize ^c	\$81.4 - \$151.5	\$6.4 - \$11.8
Sugar cane	\$102.3 - \$201.4	\$8.0 - \$15.7

Note: ^a Rubber has not been included in this analysis because the long-term nature of investments makes the analysis less meaningful. ^b Range of the three price scenarios considered in the analysis for the opportunity costs per hectare to preserve the target area for the next 20 years using a 10% discount rate. ^c Assumes a 50/50 area split between crops.

Cambodia has an extensive system of protected areas. Protected areas cover over 25 percent of the country land area and are estimated to store some 820 to 950 MtCO₂e (LifeWeb 2010; Kapos et al, 2010). Although generally less exposed to disturbances than unprotected areas, about 40

percent of the area under protection has either undergone recent impacts or will be vulnerable to impacts in the near future. The CCAP analysis indicates that protected areas can be a key element of the country's national REDD+ strategy as they help preserve carbon-rich forests, minimize leakage from other areas, promote REDD+ safeguards and achieve multiple co-benefits. However, the CCAP study identified a number of barriers for the effective implementation of REDD+ in Cambodia, including:

- Limited cross-sector and inter-agency coordination of decision-making and implementation of activities;
- Lack of harmonization among land-use objectives and short-term planning horizons;
- Inconsistent and selective implementation of existing land-use plans, inter- and intra-ministerial competition, and;
- Lack of law enforcement capacity.

Among the other insights from the CCAP Cambodia policy analysis is that a large potential exists for the rehabilitation and regeneration of natural forests in Protected Areas. A key recommendation is that the existing zoning system be employed to achieve REDD+ objectives. The zoning system can be used as a tool for integrating cluster, regional and national level planning and implementation to protect and enhance carbon stocks, by helping to categorize and rank forests for rehabilitation, regeneration, managed systems and (where necessary) excision. This is consistent with the current functions of the Sustainable Use Zone (including national cultural/heritage, ecotourism, wildlife conservation, etc.). The implementation of REDD+ also requires effective planning and coordinated responses across jurisdictions, institutions and sectors. To achieve that, local structures in Cambodia need to be empowered to take greater responsibility in managing natural resources.

3.2 Indonesia

Indonesia contains the world's third largest rainforest and continues to experience a very high rate of deforestation. The government of Indonesia has made major strides in development of a national REDD+ plan, under the principle of national REDD with sub-national implementation. The country receives support from the UN-REDD program and submitted its REDD Readiness plan (R-PP) to the FCPF in May 2009. The Norwegian government also has a bilateral agreement with Indonesia to support the country's efforts to reduce emissions from forests and peat lands with up to US \$1 billion. The country recently announced a two-year moratorium on forest clearing as part of this framework. At the local level, the strategy developed by the Ministry of Forestry and submitted to the FCPF for the implementation of REDD+ in Indonesia calls for the establishment of district reference levels and systems for measurement, reporting and verification (MRV), institutional development and strengthening, and the development and implementation of demonstration activities.

While a large number of pilot projects have been developed in Indonesia, so far little work has been done to develop parallel institutional structures for local REDD+ policy and implementation. The Indonesian Ministry of Forestry requested that CCAP and its local partner Carbon and Environmental Research (CER) Indonesia in Bogor lay the foundation for a plan to strengthen local institutional capacities and foster the implementation of REDD+ demonstration activities at the district level. In collaboration with the Ministry of Forestry, CCAP and CER

Indonesia work with the local district government of Musi Rawas in South Sumatra and other local stakeholders, to build technical capacity on MRV and develop institutions to assist policymakers with implementation of Indonesia's national REDD+ strategy in the district.

Musi Rawas district has about 50 percent of its land area covered by forests. Most of the forested lands are located in Kerinci Seblat National Park (KSNP). Many areas of the district's forest have already been converted to other land uses, and the rate of emissions from deforestation and degradation in the district between 2003 and 2006 was about 5.9 MtCO₂e annually.² The Musi Rawas District Government (MRDG) has developed its own plans and programs to improve the management of its land and forest resources, a team for the verification, monitoring and evaluation of the implementation of corporate social responsibility activities in the district, and a program to revitalize community agriculture plantations. In addition, MRDG has also developed and funded innovative programs to protect the Bukit Cogong Protection Forest: an Integrated Coconut Utilization program to provide an alternative livelihood for villagers by processing coconuts into products for sale, and a local ecotourism program. These initiatives have succeeded in reducing deforestation locally and have had a positive impact on local communities, especially women. The CCAP study finds there is a significant potential for scaling-up and expanding these initiatives as a strategy to prompt the implementation of REDD+ in this region.

To integrate REDD into these existing local forest conservation actions and implement the national REDD+ plan at the district level, CCAP, CER Indonesia and Bogor Agriculture University facilitated the formulation of the Musi Rawas REDD Working Group (RWG). After a series of meetings and a training workshop on REDD+, on April 8, 2010 the Musi Rawas RWG was established through the Regent's decree concerning the Establishment of the Implementation Coordination Team for Reduction of Emissions from Deforestation and Degradation Program in the District of Musi Rawas. The RWG will be responsible for:

- Formulating REDD+ strategies and programs that are consistent with land-use programs planned by Musi Rawas district;
- Developing community-based REDD+ demonstration activities;
- Preparing an implementation framework for MRV activities consistent with the national methods; and
- Developing a marketing strategy for REDD+ and exploring potential national, regional and international funding to support its implementation.

The CCAP team has already developed preliminary designs for MRV and new REDD demonstration activities. In 2011 we are working with our Indonesian partners to elaborate these MRV designs and build capacity in spatial mapping and other skills needed for effective REDD.

3.3 Mexico

In Mexico, CCAP has partnered with the Ministry of Environment and Natural Resources (SEMARNAT) and the National Forestry Commission (CONAFOR) to provide recommendations for the establishment of a national REDD+ strategy, including integrating all

² CER Indonesia, 2009. *REDDI Feasibility Study for Banyuasin District (Sembilang National Park) and Musi Rawas District (Kerinci Seblat National Park)*. Report Submitted to JICA.

land and forest use into one plan, ensuring public access to inventory data, and strengthening community and social structures. CCAP has also developed a checklist of potential characteristics to help the national government of Mexico identify potential REDD+ demonstration and readiness activities already underway in the country. Many of the safeguards and principles agreed by the Parties in the Cancun Agreement were part of the checklist for evaluating REDD+ projects developed by the CCAP Mexico project.

At the state level, in support of the national REDD+ strategy currently being developed by CONAFOR and SEMARNAT the CCAP analysis in 2010 aimed to elicit lessons from existing activities, case-studies, and efforts in key forested areas in Chiapas state that can be scaled-up to feed into Mexico's national strategy. The three target municipalities chosen as case study sites were Ocosingo, Villaflores, and Motozintla. In this effort, CCAP partnered with the state environment agency, the Secretary of Environment, Housing and Natural History (SEMAVIHN), and Conservation International. For this study CCAP identified both challenges and barriers to effective REDD implementation in the three sites. The results are presented below in Table 2.

Table 2: Initiatives underway in Chiapas and REDD+ opportunities

Location	Organizations Involved	Initiative	Challenges and Barriers identified by the CCAP study	Opportunities identified by the CCAP study for REDD+
Naha and Metzabok	National Commission on Protected Areas (CONANP) and AMBIO (a capacity-building and reforestation NGO)	▪ Promoting shade grown coffee by helping <i>ejidos</i> between reserves organize themselves by working with a French fair trade organic certifier and distributor Sposel. ▪ Working on a reforestation initiative with a voluntary carbon standard (PlanVivo).	▪ Limited funding ▪ So far there is only carbon quantification in a few sites using PlanVivo methods. ▪ The even distribution of payments among the group does not reward high-performers. ▪ Difficult to sustain follow-up on specific projects.	▪ Good potential for reforestation. ▪ Job opportunities at CONANP and as coffee <i>tecnico</i> welcomed by the community. ▪ Empowering women in the region. ▪ Existing efforts could serve as a model for a government program – partnerships with NGOs such as AMBIO and the extension of this program could be important opportunities.

Sierra Madre Sepultura	CONANP, Conservation International and ProNatura-Sur (conservation group)	▪ CONAP is engaging <i>edijo</i> members through land-use planning, environmental education and technical training. ▪ CI is working with <i>ejidos</i> within the reserve in a larger scale coffee collaboration with Starbucks. ▪ ProNatura is helping <i>edijos</i> grow and sell sustainable palm.	▪ Most of the pressure comes from within the <i>edijos</i> as many landholders are expanding their cattle production. ▪ This area is highly vulnerable to climate change. ▪ Lack of sustainable funding. ▪ The success of this initiative varies across <i>edijos</i>.	▪ Landowners believe that diversity in land-use yields a more stable subsistence and income. ▪ Indications that this community would welcome a REDD+ scheme. ▪ Economic associations involved in palm and coffee can be used for REDD+ activities, including cooperatives and revenue distribution systems.
Motozintla	CONAFOR and the State Forest Commission of Chiapas (COFOSECH)	Worked directly with landowners in a variety of government supported programs, including reforestation and payment for environmental services (PES), soil protection and others.	▪ Farmers are provided with the seedling ex-ante and payments ex-post upon performance, so they do not always have access to credit to improve soils and productivity. ▪ Government agencies more successful than NGOs; historically is a difficult working environment for NGOs.	▪ Capacity built in multiple levels can serve as basis for REDD+ activities. ▪ Communities in these areas are accustomed to participating in government environmental programs. ▪ Leader in these communities (liaisons) have been identified and the workshops have set the ground for future activities.

CCAP's presence in Chiapas also helped unify the diverse network that included SEMAVIHN and the local climate change coordinating body (Grupo REDD). This led to development of a more organized REDD stakeholder group (which for the first time included state government representatives) and enhanced coordination with the federal government.

4.0 LESSONS AND INSIGHTS FROM THE CCAP COUNTRY STUDIES

4.1 Capacity and Readiness

Designing and implementing a national strategy for REDD+ requires a wide range of local capacities and expertise. The level of local capacity for technical and socio-economic analysis varies considerably among and within developing countries. So far a great deal of emphasis has been placed by the international community on the need to improve technical capacities on the ground in terms of both forestry activities and MRV for carbon. While important, comparatively

less attention has been given to developing local capacities for socio-economic analysis, and currently much of the work done in this area in developing countries is outsourced, often from international consultants and organizations. The long-term sustainability of REDD+ activities relies on the ability of in-country policymakers to develop REDD+ policy analysis on their own. Readiness efforts should therefore identify and support training to build indispensable analytical capacity such as basic econometrics and cost/benefit analysis, as well as REDD+ specific needs. The CCAP Cambodia study pointed out the need to develop in-country skills in vegetation dynamics and applying ecologic and economic methods to climate change analysis. Also, in Musi Rawas district in Indonesia the CCAP study found there is currently no one able to use mapping technology essential for REDD+ MRV. This will most likely be the case in many other local areas in developing countries, leaving the few capable experts in each country with a heavy workload.

Another important insight from the study is that the implementation of REDD+ will also require a change in local institutions and work ethics. Financial safeguards need to be created so that the large in-flows of money can be tracked and monitored, to ensure that the necessary investments in political institution-building are made and that the beneficiaries on the ground receive the right compensation for their efforts. It is important to invest in creating a new mindset among government officials and community members through dialogue and collective learning, to foster environmental protection through social-cultural adjustments.

4.2 Reference Levels and MRV

Even though no final agreement has been reached on national reference emission levels for REDD+, the Parties to the UNFCCC have reached some level of consensus in this area. The Parties largely agree that historical averages will be used as the basis for estimating reference levels. Some countries argue that reference levels should be based solely on historical data; other Parties note that it is important to account for the mounting pressures on forests in countries with traditionally low historical deforestation rates, and thus advocate for integrating the projected impacts of future business-as-usual trends into this framework. Even with a reference level based on purely historical emission rates, the choice of the years used can make a huge difference. Wide ranges of annual deforestation rates and swings in emissions in different years can have an important impact on final REDD crediting depending on the choice of reference period. The CCAP Cambodia study evaluated this impact in the Koh Kong case study area (see Box 1).

Box 1: CCAP Reference Level/Baseline Study in Koh Kong Province, Cambodia

The CCAP Cambodia study estimated the historical carbon stocks and the implications of future deforestation and emissions trends for REDD+ policy in the coastal lowlands of Koh Kong province in Western Cambodia. Four potential scenarios were analyzed by developing potential REDD+ reference levels (used as the crediting baseline) for two different historical periods and two future potential average emission rates. The annual average deforestation rate (AADR) from 1997 to 2006 was 3.2 percent of 1997 cover, much higher than the national rate of 0.8 percent. The annual average emissions rate estimated by CCAP from 1997 to 2006 was 4.18 MtCO₂e, and from 2002 to 2006 was 1.01 MtCO₂e. Two assumed AADRs were then applied to calculate future business-as-usual emission rates from 2016 to 2020. The two future AADRs analyzed were based on the historical deforestation rates for the two time periods: (i) approx. 4 percent from 1997 to 2006 and (ii) approx. 0.8 percent from 2002 to 2006. The carbon available for credit annually from 2016 to 2020 – if the entire region was a REDD project – is presented in the table below.

Historical Reference Level Estimate	Amount of Carbon available for credit (MMT CO ₂ e)	
	(AADR – 4.0%)	(AADR – 0.8%)
1997-2006 (4.18 MMT CO ₂ e)	1.82	3.50
2002-2006 (1.01 MMT CO ₂ e)	0.00	0.33

Use of the higher 1997-2006 historical reference level generates a large amount of credits: 1.8 MtCO₂e with a fast deforestation rate of 4% and twice that amount if deforestation was reduced to only 0.8%. Use of the lower 2002-2006 reference level reduces the credits received dramatically: to zero with the 4% deforestation rate and only 0.33 MtCO₂e with the lower rate.

The Cambodia study argues in favor of an approach that allows some flexibility in the years employed for the historical crediting baseline. A methodology must be developed to strike a balance between, on the one hand, a rigid approach that could deter countries with large annual volatilities in historical emission rates from undertaking REDD, and on the other a method that contains loopholes or could allow much higher amounts of crediting through strategic inclusion/exclusion of one or more years (gaming). Country-specific circumstances can be taken into consideration by adjusting historical deforestation trends based on a set of standardized factors, or through a more specific methodology that allows for each country to develop its own reference level with international guidelines and review. As part of the process of setting national reference levels, investments need to be made in developing national forest inventories, which will require investments in building both technical and institutional capacities. Sub-national and national reference levels vary considerably as the Cambodia study shows, and harmonizing and integrating these estimates is likely to be challenging. In most countries it is still unclear how the relationships between project, regional and national reference levels will be managed, how sub-national initiatives will be credited, or how the responsibility for performance will be shared among the various levels of operation.

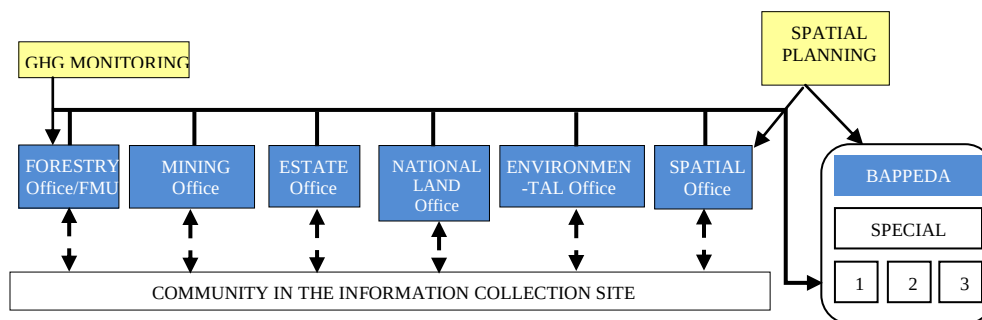
With respect to data, the CCAP Cambodia study highlighted the potential value of older historical forestry and biomass data: the use of forest and biomass studies from the 1960s and 70s enabled CCAP to estimate both the decline in forest carbon stocks below pre-war levels in

the case study area and the maximum level to which stocks could potentially be enhanced. So far most estimates of carbon stocks rely on 1990-forward data; the use of older data can however allow countries to complement and check reference level analyses based on ground surveys, and to estimate the maximum carbon enhancement and storage capacity. Also, in many tropical regions where there is not enough satellite imagery readily available for estimating forest areas and carbon stocks to define a baseline, older data can be used as a proxy. A global public database should be created by organizations such as the FCPF and UN-REDD to search for and store older data, and to complement and check uncertainties in newer ground and satellite estimates.

To measure the full impact of implementing low-carbon development strategies and REDD+ policies, local stakeholders and governments must be able to define the reference emission level and baselines for future trajectories and establish a strong MRV system. Such systems should build upon existing monitoring and evaluation systems already operational in many countries, such as the existing Development and Planning Agency (Bappeda) in Musi Rawas district, Indonesia. CCAP findings support the need for national governments to create a common standard for MRV to guide activities at the local level. To do so, developing countries will need international support from the UNFCCC and certification organizations to provide guidelines for modalities and procedures to be followed.

National governments will in many cases need to delegate part of the MRV responsibility to the local government. In Indonesia, the CCAP study recommends that this should involve creating a Special Unit in Musi Rawas responsible for managing natural resources data and information to ensure effective REDD+ MRV. This Special Unit should be part of the information management system of Bappeda, and be responsible for the organization of data collection, development of a management system and methods to display output data, and dissemination of information to all relevant stakeholders (see Figure 1).

Figure 1: Potential MRV system for the Musi Rawas district



There needs to be a balance between the centralized governance systems of national REDD+ strategies and existing local forest governance systems in place in many developing countries. Having both a top-down (i.e. a common national standard) and a bottom-up (i.e. building local capacity for MRV and adapting the standards to the local conditions) approach is essential to matching emissions reductions achieved locally with the corresponding funding received.

National governments should also establish institutional mechanisms for coordinating sub-national monitoring systems developed by local governments. The CCAP Indonesia study suggests that since the capacity of local government to use remote sensing and ground-based forest carbon inventories varies considerably, the national government should be responsible for providing information about land use/forest cover change to local governments regularly. In turn, local governments should be responsible for providing the results of field verification to the national government. This strategy can potentially improve coordination of MRV systems in other countries, helping the different levels of government continuously improve their spatial land-use planning.

4.3 REDD+ Demonstration Activities, Pilot Initiatives and Scale

In many countries, REDD+ demonstration activities, REDD+ readiness pilot initiatives, and conservation and sustainable forest management activities that do not have carbon as a main objective but result in emission reductions and/or carbon sequestration are already underway at the local level. These activities are developed by different actors, such as local and national governments, NGOs, private companies and international organizations. Some of the initiatives that have carbon as a main objective sell emissions reductions in voluntary markets. Others are directed towards specific voluntary certification and standards, such as for example the shade-grown coffee in Mexico's Chiapas state sold under an agreement with Starbucks. Since there are no international standards for REDD+ so far, these activities are developed using different standards and approaches with various levels of rigor, making it difficult to compare among them.

Countries committed to the development of a REDD+ national strategy should prioritize key areas in the country as starting points for implementing policies and strengthening institutions. The CCAP studies provide some evidence of the significant potential for scaling-up and expanding existing programs in developing countries that successfully address drivers of deforestation and promote other sustainable forest management activities. The CCAP Indonesia study indicates for example that the Integrated Coconut Utilization program in Musi Rawas district could be expanded from one village to five over the next few years. The CCAP Mexico study also provides evidence of the positive environmental, economic and social impacts of shade-grown coffee initiatives in the Naha and Metzabok areas of the Chiapas. Capacity-building efforts helped landowners map their territories to include more shade-grown crops and reforestation activities, while economic benefits from coffee inspired women to create their own small enterprises, incorporating a social ripple effect. These initiatives have already preserved forest cover in the targeted communities, and could be further developed as REDD+ demonstration activities in other nearby forests and their communities.

CCAP recommends that the efforts in such key areas begin by developing local reference levels and creating methods to map and integrate them with the national one, to ensure consistency and avoid double-counting. It is also crucial to provide international investments for building on-the-ground capacity to further elaborate and design potential REDD+ demonstration activities. Integrating local actions into national REDD+ accounting is likely to be complex. Local conditions vary widely and so does the level of stringency (if any) with which projects are

required to monitor and report progress. Countries need to invest in ensuring consistency between methods used by different initiatives within countries.

A good start would be the creation of a national registry/inventory of all REDD and forest conservation-related activities in place within a country. In Mexico, the government seeks to create a national registry with support from various international collaborators, to show the location, funding, and progress of REDD+ areas in a transparent and standard format. While its development is not mandatory for any country, having a national registry can be an important tool for national governments in designing and implementing REDD+ policy, by helping to suggest potential refinements to existing projects and to identify drivers, policies and other REDD-related research not yet being addressed and tested.

4.4 Enhancement of Carbon Stocks

The Cancun Agreement officially included conservation of carbon stocks, sustainable forest management and enhancement of forest carbon stocks (REDD+). The CCAP Cambodia study found a large potential for enhancement; in one target area of 44,000 ha, total carbon stocks could be increased by 9 percent (over 1 MtCO₂e) in just 10 years and 27 percent (3.5 MtCO₂e) over 30 years. If properly managed, forest rehabilitation and enhancement of forest carbon stocks can lower the costs of REDD and increase the health of forest stands thereby helping to ensure permanence, a key concern for international institutions and investors. The scope of enhancement activities and eligibility requirements under the REDD+ mechanism nevertheless have not yet been clearly defined by the Parties, however.

The Parties to the UNFCCC need to clearly define which activities classify as enhancement of forest carbon stocks, taking into account the total potential for carbon sequestration and the implications in terms of sustainable development goals. Currently there is a great potential for rehabilitating degraded forests, restoring soils and natural regeneration in developing countries. Many of these activities – especially assisted natural regeneration – can be developed at a low cost and contribute to reduce the pressure on natural forests.

It is crucial to build upon the lessons from afforestation and reforestation (A/R) projects under the CDM to avoid repeating some of the earlier shortfalls (e.g., high transaction costs). In addition, it is also necessary for the UNFCCC to develop guidelines to guard against adverse impacts, such as invasive tree species leading to ecosystems disruption and increased fire risk. REDD+ activities also need to avoid perverse incentives, such as allowing the masking of deforestation in other areas and conversion of natural forests to plantations. The CCAP Cambodia study recommends that to the extent that it is consistent with an ecosystems approach, enhancement programs should also be integrated into forest and protected areas management practices. Furthermore, perverse incentives can be addressed with requirements for robust and wide-scale MRV that match definitions developed within the framework of an ecosystems approach.

4.5 Funding and Support

The potential of REDD+ to reduce GHG emissions in an efficient, effective and equitable way can only be realized if developing countries receive substantial support for capacity building. So far, with the primary exception of investments made by the FCPF and UN-REDD a considerable part of the financial support for REDD+ is performance-based. The lack of up-front investments has been and continues to be one of the greatest barriers for the development of REDD+ in developing countries. It is essential to grant landholders up-front credit as a core component of the expansion of demonstration activities and as part of a policy solution for REDD+. In Mexico for example, reforestation projects by the federal and state forestry commissions show that it is necessary to ensure up-front access to credit to participating landholders, to give them confidence that the long-term payoff of changing their land-use patterns is worth the initial investment of time and money.

To date most of the investments made in sustainable forest activities in developing countries have come from governments. In the Indonesia study, CCAP recommends that blending and hybrid micro finance systems be created to support the implementation of REDD+ in the long-run. Blending financing will synergize all financial sources, including local government budgets, private banks and international funding. Hybrid micro financing systems would utilize more government funds than private funds, to enable local communities to access the former as capital fund assistance in the form of business credit. The government can attract private sector investments by increasing the transparency and accountability of the processes and procedures for early REDD+ activities. As the likely recipients of most investments in REDD+, national governments need to develop clear guidelines for creating partnerships with organizations and local actors in developing REDD+ activities on the ground. The CCAP Mexico study suggests that this structure could potentially mirror international development agencies that contract out services to organizations or development specialists.

The lack of sustainable sources of financing for initiatives in developing countries has been identified by the CCAP studies as a main challenge. Management of the Protected Areas systems in Cambodia for instance is challenged by the lack of capital to invest in better technology and enforcement. At the same time it is also important to manage expectations about potential revenues for REDD+. Countries need to understand all the demands and risks of participating in a REDD+ compliance mechanism, and the requirements associated with voluntary projects or sub-national actions.

4.6 Policy

REDD+ presents a unique opportunity for developing countries to pursue a sustainable growth path, taking into consideration both the need for developing and diversifying the economy and the importance of preserving the country's natural resources and reducing GHG emissions. To effectively participate in REDD+ developing countries will need to invest in political and institutional reforms. Countries committed to REDD+ will also need to develop a dynamic national strategy that prioritizes target areas of activities and specific policies that are likely to be the most effective in the early stages of the mechanism. Opportunity cost estimates are an important tool for identifying likely drivers and defining priority areas for investment. An

analysis of the opportunity costs of REDD+ will allow countries to identify forests that are at greatest risk, and will help to decide on the appropriate mix of near-term pilots versus long-term policy needs.

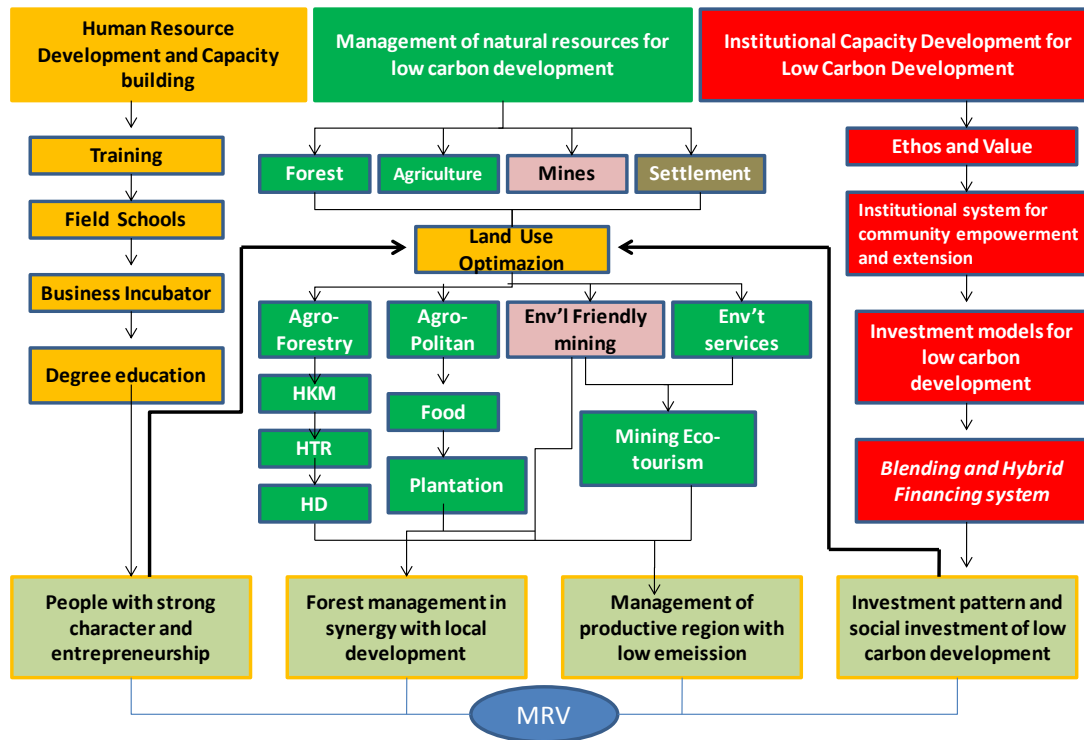
Opportunity costs of REDD+ vary widely within countries and over time depending on the crops suitable for cultivation in each area, the market price of commodities and other factors. In Cambodia, the CCAP study found that the opportunity costs of agricultural development may be relatively low (\$5 to \$15/tCO₂e), but are still higher than prices obtained for REDD+ credits in the voluntary market. Participation in a future compliance market is likely to alter this dynamic as the prices are expected to be higher. While the voluntary market will be useful in testing REDD strategies and achieving reductions in the short-term, it is thus not a silver bullet for REDD.

CCAP's Cambodia and Indonesia studies indicate that developing countries should design a dynamic and integrated land-use and forest zoning strategy, taking into consideration the costs and benefits of fostering initiatives in different areas of the country. To integrate land-use planning a high-level inter-sectoral national body is required so that REDD+ initiatives gain the trust of investors and remain viable and productive overtime. The development of the different sectors of the economy must be pursued through a coordinated approach, where there is synergy between the sectors rather than competition.

Infrastructure, agriculture, mining and energy supply are key sectors that directly and indirectly will have an effect on the success of REDD+ strategies, so they should be included in the design of an integrated national REDD+ plan. Agriculture and extractive activities for instance are fundamental in many cases for increasing countries' GDP and providing more employment opportunities to local communities. With appropriate policies these activities could potentially be done in areas other than forests and protected areas where there is high carbon content and biodiversity. This would in turn allow for greater development of other sustainable activities such as eco-tourism, as seen in Musi Rawas district in Indonesia.

The centralized coordination of different economic activities will help countries to reach their optimal potential in a cost-effective way through a low-carbon development strategy. The implementation of REDD+ needs to be incorporated into the local and national development plans already designed or in place in many countries. In Musi Rawas district the Medium Term Regional Development Plan FY 2011-2015 and the *Agropolitan* model of community-based integrated sustainable agricultural development are examples of sub-national development plans that should consider REDD+ as part of their strategy to achieve low-carbon development (see Figure 2). Laws need to be enacted at the national level as guidance and at the local level with more specific determinations.

Figure 2: Strategic Program for Institutional Development of REDD+ in the Musi Rawas District



In areas with multiple state and forest programs operating at the same time, it is essential to closely examine incentives stemming from these government programs and streamline them for maximum efficiency. It is also crucial to identify and work at the local level with agents of change, local leaders with strong character and entrepreneurship as found in Musi Rawas district and in Chiapas state, Mexico. These individuals will help to ensure the commitment of communities to REDD+, and that community needs and interests are safeguarded throughout the process.

Governments should also identify and build off of successful policies and programs already in place. A sound Protected Areas system for instance is a good building block for REDD+, but it must ensure that these areas remain protected. Countries with Protected Areas systems like Cambodia should prioritize the protection of natural forests in these systems, placing particular emphasis on eliminating leakage and enhancing carbon stocks. There are a number of existing initiatives in other countries that should be improved upon and expanded. In many cases, most of the challenges and problems that these initiatives face are connected to the lack of human and financial resources, not a lack of initiatives or institutions. REDD+ provides an opportunity to utilize existing structures and programs instead of reinventing the wheel.

4.7 Institutions

The implementation of REDD+ programs requires effective planning and coordinated responses across jurisdictions, institutions and sectors. One of the main lessons from the CCAP projects is the importance of local and site-level forest management and integrated cross-sectoral low-

carbon development planning. National REDD+ strategies need mechanisms for effective coordination/cooperation between the national and sub-national levels, and between different sub-national levels (e.g. district with local communities). Continuing communication and cooperation between the national and provincial/state/district governments can encourage progress at the local level; this balance between centralized and decentralized forest governance can also reduce costs and increase efficiency and accountability of forest management activities at the local level. The CCAP study of Protected Areas in Cambodia indicates that decentralized governance structures within a national framework with uniform standards can provide an opportunity for implementing REDD+ activities and enhancing permanence, through sustained local community engagement, rapid response to field issues, and transparent benefit sharing arrangements.

Governments should also further foster collaborations through partnerships with NGOs and private organizations that have already developed initiatives or are interested in doing so at the local level. It is important for the national government to determine the parameters and rules under which these partnerships will be created. As funding is likely to flow through the national government and the work load becomes greater than governmental institutions can handle, these public-private partnerships will play a key role in the implementation of REDD+ activities on the ground.

Such partnerships have already achieved success and demonstrated an impressive ability to fill complementary roles. In the CCAP Mexico study, the Naha and Metzabok reserve areas in the Lacandona region of Chiapas state demonstrated an innovative and effective model of government programs cooperating with local NGOs, communities and private coffee enterprises. Similarly, in Mexico's Sierra Madre Sepultura region Conservation International is bringing together different local and international actors to promote conservation and improve local livelihoods, by working with *ejidos* within the reserve in a large-scale coffee collaboration with Starbucks. Non-governmental partners with experience in the local community often have significant trust from leaders and individuals which allows them to readily engage. It is thus important that implementing organizations develop a base for cooperation and trust with local communities.

Another key institution is local coordinating bodies for REDD+. In the Musi Rawas district in Indonesia CCAP and CER Indonesia facilitated the establishment of a REDD Working Group to improve the coordination among local institutions involved in REDD+ activities, further develop their capacity and link national and local efforts. The CCAP Indonesia and Mexico studies indicate that coordination among national and sub-national steering committees and their respective REDD+ working agendas should be a top priority. These groups should also be open to the participation of organizations and individuals that are not connected to the government. Such institutions can also contribute to educating the public about REDD+ and attracting more investments from the private sector.

CCAP studies point out that having strong and active local rural organizations is key for the success of REDD+. Strengthening local community/grassroots organizations should also therefore be at the core of national implementation agendas. Institutional processes need to be created at the local level to include local stakeholders in main decisions related to REDD+.

Multi-stakeholder cooperation needs to be well-organized and formal processes created to enable the effective participation of local individuals and communities. Communities should be encouraged to form and facilitate organizations to ensure that their voice is heard. An example highlighted by the CCAP Mexico study is the Villaflores/Sepultura area, where economic associations are involved in palm and coffee plantations. Enabling market access to these communities for the sale of sustainable non-timber forest products is crucial for supporting local livelihoods and addressing drivers of deforestation.

4.8 Safeguards and Co-benefits

The Parties to the UNFCCC agreed in Cancun on general safeguards to guide the implementation of REDD+ activities in developing countries. Developing countries implementing REDD+ activities are encouraged to provide information to the Parties on how these safeguards are being addressed and respected, but the UNFCCC does not yet provide specific guidance on how these safeguards will be promoted on the ground. Permanence and leakage are two of the most important safeguards in the Cancun Agreement. CCAP's country studies draw attention to interesting win-win options for REDD+ that provide alternative livelihoods to communities living in or near forests and protected areas, reducing the risk of reversals and displacement of emissions. An important objective of the CCAP studies was to identify such opportunities at the local level. The Integrated Coconut Utilization program in Musi Rawas district in Indonesia and shade-grown coffee initiatives in Chiapas state promoted by the National Commission on Protected Areas (CONANP) and the reforestation NGO AMBIO are good examples of win-win initiatives that could be scaled-up for prompt REDD+ implementation at the local level. In Indonesia, the program for the Revitalization of Community Agriculture Plantation aims at encouraging communities to optimize the use of degraded land in non-forest areas for agricultural plantations (particularly for rubber). Improving agricultural productivity was also identified as a potential win-win strategy for Indonesia.

Ensuring that countries have a system in place to promote REDD+ safeguards is an important basis for realizing potential co-benefits from REDD+ activities such as improving local livelihoods, protecting local biodiversity, soil rehabilitation, watershed protection, and fostering greater social cohesion among community members. Another key co-benefit from REDD+ activities is bringing alternative sources of income to local communities such as non-timber forest products. In Cambodia for instance, harvesting and sales of tree fruit, resin and honey could contribute to enhancing local livelihoods and reducing the opportunity cost of REDD+. Empowering women can also be both a promoter and a key benefit of REDD+. In Musi Rawas district, women who before the project were helping their husbands in the fields without receiving financial compensation now make up four-fifths of the Integrated Coconut Utilization program workforce. The lack of methodologies to consistently measure and follow progress of co-benefits will likely be a challenge, however. The use of voluntary certification standards that are currently available could potentially attract additional investment, but they come with a cost and may increase the project preparation times.

The potential co-benefits from REDD+ also provide an opportunity for creating synergies with different UN Conventions (e.g., the Convention on Biological Diversity, Millennium Development Goals, Convention to Combat Desertification) and goals not directly related to

environmental protection such as poverty alleviation and rural development. Biodiversity is a key concern of many developing countries; in Cambodia the establishment of protected areas had biodiversity conservation as a core objective. Biodiversity can also provide an opportunity for achieving REDD+ through activities such as the promotion of ecotourism. The CCAP study in Indonesia shows that this potential has already paid important dividends, and should be further explored. These synergies could improve the financial viability of REDD+ activities by attracting more investments and ensure optimal results in terms of environmental and socio-economic outcomes.

5.0 CONCLUSIONS

The Cancun Agreement was an important step forward towards the establishment of an international scheme to combat deforestation and forest degradation, but many issues remain to be decided. The CCAP studies in Cambodia, Indonesia and Mexico highlight the importance of learning from actual experience in developing forest conservation policies and activities on-the-ground to promote the effective design of an international REDD+ mechanism. As the SBSTA works on modalities and guidance for the development of reference levels, safeguards and MRV, it is important to learn from these experiences in developing countries to ensure that international REDD+ rules and procedures are effective and in accord with real-world conditions.

For the long-term sustainability of REDD+ activities, it is important to develop not only technical capacities but also policymakers' ability to evaluate the socio-economic implications of their decisions. Effective REDD+ policy development must integrate analysis and policy at all levels to design complementary international and in-country domestic structures, with sub-national programs combined into a single national program. In the countries studied, policies and initiatives are already underway at the local level to reduce pressures on natural forests and improve local livelihoods. CCAP studies provide some evidence that these programs have a significant potential to reduce deforestation locally, and to be scaled up and replicated to prompt the systematic implementation of REDD+ at broader levels. There is also a significant potential for enhancement of forest carbon stocks in developing countries. The main barrier to these activities remains in many cases the lack of up-front investment and support. Countries need therefore to develop strategies to diversify investment sources and attract private sector investment.

Through a dynamic and integrated land-use and forest-zoning strategy taking into consideration the costs and benefits of fostering initiatives in different areas of the country, developing countries can greatly improve the potential effectiveness of REDD+ implementation. The CCAP studies also indicate that it is important to include REDD+ in development strategies (existing and longer term low-carbon ones), and policies to achieve this integration at the national and local levels need to be pursued and expanded.

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ANNEX 1: UNFCCC MEETINGS WITH OUTCOMES FOR REDD

COP 11 in Montreal, 2005: REDD was formally introduced to the UNFCCC agenda on behalf of the Coalition for Rainforest Nations by the governments of Papua New Guinea and Costa Rica.

COP 13 in Bali, 2007: The Parties to the UNFCCC adopted the Bali Action Plan calling for further consideration of policy approaches and positive incentives on issues relating to REDD.

COP 14 in Poznan, 2008: Continued progress in terms of developing methodological issues related to a wide range of policy approaches and positive incentives.

COP 15 in Copenhagen, 2009: A draft decision broadened the scope of REDD to include conservation of forest carbon stocks, sustainable forest management and enhancement of carbon stocks (REDD+). The Copenhagen Accord also defined REDD+ implementation principles, safeguards and requirements for participating in the mechanism.

COP 16 in Cancun, 2010: The Copenhagen REDD+ decision is adopted with some modifications. The Cancun Agreement allows for sub-national REDD+ actions as an interim measure, supports a phased approach to REDD+ implementation, and requests developing countries to develop: (i) a national REDD+ strategy or plan, (ii) national forest reference levels, and (iii) a robust national forest monitoring system.

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