Challenges for pro-poor benefit sharing schemes in the implementation of REDD+ in Mexico

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Acronyms

ENAREDD+: Draft of Mexico's National Strategy on REDD+, the final version is not yet available.
REDD+: Reduced 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.
CTC: Consulting Technical Committee of REDD+ in Mexico.
FCPF: Forest Carbon Partnership Facility.
NGO: Non governmental organisation.
TFD: The Forest Dialogue.
UNFCCC: United Nation Convention on Climate Change.
CONAFOR: Mexico's National Forestry Commission (Comisión Nacional Forestal)
MREDD+: Alliance Mexico REDD+.
MRV: Monitoring, Reporting and Verification.
COP: Conference of the Parties.
NORAD: Norwegian Agency for Development Cooperation.
EAA: Early Action Area.
BMU: German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.
GHG: Greenhouse gas emission.
AFOLU/LULUCF: Agriculture, Forestry and Other Land Uses/Land Use, Land Use Change and Forestry.
IRE: Mexican Initiative to Reduce Emissions.
ER-PIN: Emissions Reduction Project Initial Note.
CCMSS: Mexican NGO, Consejo Civil Mexicano para la Silvicultura Sustentable.
D&D: Deforestation and forest degradation.
NTFP: Non-timber forest products.
REL/RL: Reference emission level/reference level.
CDM: Clean Development Mechanism.
IRR: Internal rate of return.
PES: Payments for environmental services.
CO_2e: Carbon dioxide equivalent.
FIP: Forest Investment Plan.
PRONAFOR: National Forestry Programme (Programa Nacional Forestal).
PAGeREDD+: Action Plan for Mainstreaming Gender in REDD + Mexico (in Spanish: Plan de Acción para la Transversalización de la Perspectiva de Género para REDD+ en México (PAGeREDD+).

1 Introduction

The objectives of this paper are (a) to explain the current state of the discourse, design and implementation of the benefit sharing schemes for REDD+ in Mexico and (b) to present an overview of particular issues associated with benefit sharing under *national* or *jurisdictional* (i.e. state-level) REDD+, including the question of equity and pro-poor benefit sharing, with a view to identifying the challenges involved in this. The purpose is to produce reference material for the participants in The Forests Dialogue (TFD)'s field dialogue on REDD+ Benefit Sharing, which will take place in Mexico 2-5th June 2014 (http://tfd.yale.edu/dialogue/field-dialogue-redd-benefit-sharing-mexico). It aims to provide common ground for the participants in understanding current discussions on benefit sharing and challenges in Mexico for developing/supporting benefit sharing schemes that are effective in environmental terms, efficient in economic terms, legitimate in political terms and pro-poor and equitable in gender and social terms. Considering the outcomes of the dialogue a revised version of the paper describing the Mexican context on benefit sharing in REDD+ will be prepared.

Expected benefits derived from REDD+ implementation include the mitigation of climate change through the reduction of emissions from deforestation and forest degradation and from carbon enhancements. Non-carbon benefits include aspects as the maintenance of environmental services such as hydrological services, protection against landslides and biodiversity; the enhanced or sustainable production of timber and NTFP; social benefits as strengthening of social capital and better forest governance, capacity building and conservation of cultural sites. However in the context of performance based financing, REDD+ benefits refer to the compensation that would be received in exchange for reducing emissions or increasing carbon removals. The main questions associated to the design of benefit sharing schemes in REDD+ are, how to identify the beneficiaries, on what basis benefits should be shared and on what forms and through what distribution and decision-making mechanisms (Hou, 2013).

The paper is structured as follows. We start by explaining briefly the process by which REDD+ policy in Mexico has been developed, and then focus on the debate that has been carried out in Mexico on benefit sharing; the discussion includes the main points identified in previous TFD Dialogues on Benefit Sharing in national or jurisdictional programmes. These pose very different challenges from those at project level REDD+, and while there is considerable experience and literature already at the project level, there is much less understanding about how benefit sharing could work at national/state level. To help to resolve the issues of benefit sharing in a jurisdiction or national system, we first identify a number of gaps or challenges that the analysis of the documents on Mexico exposed (these are backed up by an extensive technical Annex 1, which explains terms and concepts). We then suggest a set of criteria that could be used to evaluate different benefit sharing systems (including environmental effectiveness, economic efficiency, political legitimacy, and the social goals of equity including gender equality and pro-poor opportunities). Next we outline a number of different possible systems, and make a systematic analysis of their strong and weak points using the criteria mentioned. We end by suggesting some questions that need to be discussed about the choices that have to be made for the case of Mexico. These include *Propositions* that could enrich the discussion that will take place during the Dialogue in Mexico.

2 REDD+ in Mexico and what has been stated regarding benefit sharing

Mexico has been an active Party in support of the UNFCCC agreement on REDD+ and embarked early on the implementation of a national REDD+ programme. Since publishing its Vision on REDD+ (CONAFOR, 2010), Mexico has been engaged in revising the final draft of the National Strategy on REDD+, initially distributed for discussion in 2012 (ENAREDD+: CONAFOR, 2012). This document has been largely drawn up in a participatory process in which a large number of civil society actors such as NGOs, academics, other local stakeholders as well as some state governments

have contributed, through the Comité Técnico Consultivo (CTC REDD+), which met starting in 2010 and still continues. Although neither the Vision nor the ENAREDD+ draft have a specific chapter on benefit sharing schemes, both provide a general idea about how benefit sharing might be designed. Additionally there are REDD+ early actions being implemented in a number of regions, including the Yucatan Peninsula, and activities within the framework of the Carbon Fund of the FCPF.

2.1 Vision on REDD+

The Vision states initially that the goal of REDD+ is to eliminate emissions from land use change by 2030 and to enhance the quality of carbon reservoirs while incentivizing ecological restoration and biodiversity conservation, contributing to food security and enhancing life standards (CONAFOR, 2010). Emissions from degradation should be reduced through sustainable use of resources, natural regeneration, controlled use of fire and incentives for such sustainable practices. The main action lines defined in the Vision are: the creation of institutional arrangements; baselines and a MRV system; capacity building and mechanisms for communication and participation. The Vision points out the importance of learning from successful experiences, respecting landowners' rights and recognizing that the control of emissions in the forestry sector might include interventions beyond forested areas (e.g. in the agricultural sector, to reduce pressure over forests). The role of the government would be of a promoter and regulator to ensure the respect of property rights and to foresee the needs for institutional arrangements related to REDD+ given the on-going process in which the framework is being built at the international and national levels. The Vision states that in REDD+, forest-owners (communities, individuals or firms) should receive *fair* and *direct* benefits, which *should not threaten rights to land or the potential to use land sustainably*. The strategies should then consider the drivers of emissions and should correct the distortions in the valuation and management of carbon services. Incentives should be aligned to stimulate the sustainable management of forests and natural regeneration, particularly at the community level (CONAFOR, 2010). The Vision recognizes *MRV as a central element* in REDD+ for the provision of information for policy design, in the evaluation of results-based actions, *to claim and distribute benefits/incentives*, and to generate the information to be reported as part of different commitments made by the country (e.g. national communications, updates, REDD+ related reports). The development of a voluntary carbon market is one of the schemes envisioned to create incentives in REDD+ (CONAFOR, 2010). The Vision aims to promote an *equitable distribution of benefits based on social agreements*, the guiding principles for this include gender equity, grassroots participation and certainty and respect for property rights of landholders, among others. It also indicates that the purpose of finance to be obtained for results based activities should be integrated within a *fair* system for benefit sharing. In the third phase of REDD+ implementation Mexico should have a *fair and equitable* system for benefit sharing.

2.2 ENAREDD+

In recent years the commodity boom increased competition for land and its opportunity costs, thus approaches such as PES are not enough to provide sufficient incentives for sustainable management given the costs involved (Hou, 2013). An alternative is to adopt a landscape approach to include the mitigation of climate change in different land uses, not only in forestland, and to promote a rural sustainable development model with low carbon emissions; this is the approach adopted by Mexico as expressed in the draft of the National REDD+ Strategy (ENAREDD+, by the initial in Spanish) (CONAFOR, 2012). The spirit behind the ENAREDD+ aims to promote rural sustainable development based on a territorial approach (CONAFOR, 2012). The ENAREDD+ follows the General Law on Climate Change, updated in 2012, which contains an aspirational mitigation target to achieve a zero percent of emissions in original ecosystems. The objectives also include the reduction of emissions from forest degradation, the increase of forest areas with sustainable management and under natural regeneration, and the enhancement and conservation of carbon

stocks. The strategy recalls that in Mexico the legal framework establishes that as vegetation and soils in forests capture carbon, the property rights relating to that carbon lie with the legal owners of land (e.g. *ejidos*, communities, indigenous groups, individuals, firms). The General Law on Sustainable Forest Development also explicitly mentions *´posesionarios legales´*, who are community members with land but without full rights (LGDFS, 2012). The strategy includes objectives and activities for the following elements: Public Policies, Financing Schemes, Institutional Arrangements and Capacity Building, Reference Levels, MRV, Safeguards, and Communication, Gender Equality, Social Participation and Transparency. In the ENAREDD+ benefit sharing schemes are described in the Financing Schemes chapter. One aim of the benefit sharing system is to promote a model of development that allows permanently stopping the processes of deforestation and forest degradation. The strategy states that for REDD+, Mexico should design a *transparent, equitable and fair* benefit sharing scheme to *transfer resources at the local level* (CONAFOR, 2012). The implementation of REDD+ will identify those activities that generate *more social benefits and support rural sustainable development*.

The ENAREDD+ specifies the principal activities required to align incentives produced by public policies and design economic instruments to mobilize resources for REDD+. The institutional arrangements that will be created as part of REDD+ will include strategies and measures to provide long-term certainty for the actions implemented. Strategies include the use of *community land use plans*, the promotion of actions to reduce the effect of disturbances and actions to promote restoration and enhancement of ecosystems. Different economic instruments will be designed and promoted to facilitate the implementation of activities in REDD+. Some of these will include the use of domestic funds to subsidize community sustainable forest management, the financing of sustainable activities based on *best practices*, measures for increasing the *access to credit* for productive activities and the creation of a *voluntary market* for carbon sequestration. It will be important to address the issues of permanence, buffers and leakage, and to create synergies with the private and social sectors. It will also be necessary to finance actions to *create capacities* that might enable local communities to engage in implementation.

2.3 Safeguards

The strategy includes principles and guidelines for the implementation of social and environmental safeguards as included in the COP decisions adopted at Cancun and Durban. Furthermore, the national legislation and the ENAREDD+ itself include additional safeguards. Safeguards should ensure the *equitable* distribution of benefits, respecting gender considerations and guaranteeing the *certainty over property rights and economic competitiveness*. The participation of *indigenous* groups is a challenge; the ENAREDD+ recognizes 62 indigenous groups with their own languages. The strategies for participation and communication should engage and empower different social actors for REDD+ participation and implementation of safeguards (i.e. gender, cultural, economic, political, ethnic). CONAFOR is taking the first steps to develop a system to implement the safeguards in collaboration with other agencies of the government and stakeholders. There are also two pilot projects in development (one in the inter-municipal associations of Jalisco, and the second in the Yucatan Peninsula) based on the REDD+ Social and Environmental Standards (REDD+SES, 2012a). The experience from this pilot will be used to draw conclusions and lessons learned, and will inform the implementation at the national level.

2.4 Initial Activities and Initiatives

The implementation of REDD+ in Mexico will follow a nested approach that includes the national, sub-national (i.e. state level), regional (i.e. inter municipal associations) and local levels (i.e. ejido and municipalities) (CONAFOR, 2012). The definition of baselines and MRV activities will be aggregated in multi-scale systems. As part of a step-wise implementation, Mexico has started the preparation of activities in early action areas at sub-national level (EAAs) where different efforts

and initiatives are in development. The EAA have been integrated at inter-municipal level in Jalisco, State of Mexico, Oaxaca and Chiapas, and inter-state level in the Yucatan Peninsula (Yucatan, Campeche and Quintana Roo). The outcomes of these experiences will be used to prepare the action plans for national implementation in the third phase of REDD+.

There are many different initiatives that are being implemented as part of REDD+ in Mexico. Initial efforts include the project *"Strengthening the process of preparing for REDD+ in Mexico and the promotion of South-South Cooperation"* financed by NORAD (Mexico-Norway project) and the *"Implementation of REDD+ early actions in priority watersheds in Mexico through the construction of governance mechanisms at the local level"* (LAIF project), financed by the French Development Agency and the Spanish Agency for International Cooperation and Development through the Latin American Investment Facility (LAIF) (CONAFOR, 2013). USAID is financing capacity building for REDD+ and the implementation of REDD+ pilot projects in an initiative led by The Nature Conservancy, in the project Mexico REDD+ Alliance (MREDD+) (Alliance, 2013); other partners of MREDD+ include Rainforest Alliance, the Woods Hole Research Centre, and Espacios Naturales para el Desarrollo Sustentable. In addition to field implementation MREDD+, in collaboration with IUCN, is also supporting other processes such as the integration of gender considerations of REDD+ in the PAGeREDD+ and the analysis of the programmatic and legal framework on gender considerations for REDD+. The Inter-American Development Bank is supporting Mexico through two projects in the Forest Investment Plan to improve the profitability and sustainability of community forest enterprises in rural areas as part of the initiatives for REDD+ preparedness (FIP, 2013). In parallel there are other initiatives financed by BMU and led by IUCN to assist in the evaluation of options for benefit sharing schemes; TFD is part of this project. IUCN is also starting a regional process in Yucatan Peninsula to strengthen capacities for the transversal inclusion of gender considerations in the State Level Strategies of REDD+.

There are other initiatives looking specifically at different features of benefit sharing schemes. An opinion survey on options for benefit sharing within the Mexican national REDD+ programme was commissioned by TNC for the MREDD+ project and conducted by the NGO CCMSS. When finished, this work will produce policy recommendations for benefit sharing in Mexico. Additionally an independent study on opinions on benefit sharing is being carried out by Salla Rantala, with funds from the Finnish National Academy.

2.5 Benefit Sharing in the ER-PIN

Mexico, as a REDD+ country, is applying for financing from the FCPF Carbon Fund and submitted an Emissions Reductions Project Initial Note (ER-PIN) describing the national Initiative to Reduce Emissions (IRE) (ER-PIN, 2014); the IRE will be implemented in Chiapas, Jalisco and the Yucatan Peninsula (CONAFOR's early action states). It estimates that implementation of the IRE could reduce emissions by 1.75 $MtCO_2e$/year (about 8.75 $MtCO_2e$ for the period 2016-2020). The ER-PIN proposes that 27% of the emissions reduced could be assigned to the Carbon Fund at a price of \$25 USD/tCO_2e. Thus the total benefits to be shared, obtained from the Carbon Fund, would be around \$US 60 million for the period 2016-2020 (\$12 Million per year). It is still necessary to determine what other incentives will be associated to the remaining 73% of expected emissions reductions (e.g. local of voluntary carbon markets, PES or other policies).

The ER-PIN defines certain elements for benefit sharing of REDD+ that are also consistent with the draft of the ENAREDD+. The ER-PIN states Mexico will finance capacity building at local level to manage forests and will continue its public programs in the forest sector. Public policies finance the incremental cost of sustainable management in comparison with common practices, but do not cover opportunity costs; the country will continue its public programmes financed with domestic resources and hence any payments received for results from reduced emissions would be additional

to these programs and will not be used to finance them. The objective is also to balance benefits of interventions at individual and community levels; in this context financing schemes stemming from the IRE will benefit different stakeholders, including women, young people and habitants that may not have rights to the land but whose efforts are contributing to reduce emissions.

Rights. The ENAREDD+ and the ER-PIN, based on the Mexican legislation, state that the property over carbon stocks, that is, carbon removed by vegetation, lies with the legal landholders; as these benefits are inherently linked to trees and vegetation present in the land. The landowners also have rights to the benefits from emission reductions (ER-PIN page 63). One important challenge is how to collaborate with stakeholders when land or other statutory or customary rights are unclear (Hou, 2013; Buss et al, 2013). An option to address these issues is to create contracts for REDD+ activities under the existing law while unclear rights are solved (Buss et al, 2013). However in order to address the drivers of deforestation and forest degradation it is necessary to engage stakeholders outside the forest sector. Thus, benefits might need to be shared to more actors than only those holding rights to land.

Non-Carbon Benefits. The ENAREDD+ acknowledges that REDD+ has the potential to produce non-carbon benefits such as: hydrological services, biodiversity, poverty alleviation, employment, social capital, transparency and participation.

Principles. As stated in the ER-PIN the objective is to advance in the design of an equitable, transparent and effective benefit sharing scheme to address the drivers of deforestation and forest degradation.

Scope. The ER-PIN indicates that the IRE will generate results based payments only for reduced emissions (i.e. from reduced deforestation and degradation, see section 16.1 of the ER-PIN). Thus it is our understanding that benefits sharing schemes in this context do not include or reward carbon enhancements. Moreover the implication is that the rewards for reduced emissions will be on the basis of input payments rather than output payments (see Box 1). It is not quite clear what will happen to any such carbon gains achieved by forest enhancement at the local level. Possibly (given that the ER-PIN recognises that such increases in stock can be attributed to individual communities) what is implied is that communities could sell in principle credits relating to forest enhancement, for example in the voluntary carbon sector. However this still needs to be clarified.

Box 1. Characteristics of output and input-based benefit sharing schemes.

	Output-based reward systems	**Input-based reward systems**
Basis for allocation of rewards	Rewards are proportional to the production rate (carbon saved, increased volume of water in river, number of trees planted and surviving)	Rewards reflect the effort made; the activities undertaken in forest management and time invested.
Assessment of level of rewards requires	A quantitative baseline against which improvements can be compared, and quantitative measures of the outputs	Proof that activities have been undertaken properly
Additionality	Only performance that would not otherwise have occurred, is subject to rewards. Hence owners who have never deforested would not be able to claim rewards	All approved activity intended to improve forest management may be rewarded, hence owners who have always protected the forests may receive rewards as well as those who start such activities as a result of the programme

General Procedure. The implementation of the IRE as described in the ER-PIN indicates that in the project areas, local implementing agencies will propose implementation/investment plans to be approved by state-level committees which would be made up of a broad spectrum of advisors. Funds will go from the Carbon Fund to the national fund, and to a local (state or interstate) regional

fund to cover the costs involved. The approved investment plans will receive initially up-front financing by the federal government from current subsidy and non-subsidy programmes; these initial funds will not be recovered through carbon results-based finance and are part of the commitment of the Mexican government to undertake activities in the forestry sector. After one to three years following initial implementation, carbon benefits will be estimated (i.e. reported and verified), credits ´sold´ to the FCPF's Carbon Fund and the money raised will be used to finance the activities included in the plan in subsequent years. Institutional arrangements will be made at the regional and local levels between government, implementing agencies and relevant stakeholders to decide how to share the benefits at regional level considering the collective effort required. Benefit sharing schemes to be agreed, will help to implement activities by local stakeholders (communities and ejidos) as those identified with high priority. It is important that action plans and local benefit sharing schemes, stemming from the ER-PIN and the IRE, consider the guidance notes on gender sensitive REDD+ to identify "gender-based risks or unequal benefits" during preparation activities and the implementation of safeguards (e.g. gender inequality in land tenure would need to be addressed in order to ensure equitable REDD+ outcomes) (UN-REDD+, 2013), although this is not specifically stated in the Mexican texts; the main requirements related to safeguards come from the methodological framework of the Carbon Fund.

2.6 The debate within the CTC

It is necessary to inform different stakeholders how issues such as performance based MRV could shape REDD+ and what the implications are for shaping future benefit sharing schemes; this is also an opportunity to engage with stakeholders outside the forestry sector and identify the required incentives (Buss et al, 2013). By engaging different stakeholders it will be possible to facilitate cross-level and cross-sector linkages to design benefit sharing schemes and address drivers of deforestation and forest degradation (Buss et al, 2013). In Mexico debate within the CTC on benefit sharing has been vigorous and demonstrated divergent opinions. A sub-group was therefore set up in 2012 to deal with this topic and present findings to the main CTC meetings, because of the complexities of the topic. The majority in this sub-group seemed to be of the opinion that ALL the financial benefits of REDD+ (i.e. from sales of carbon credits internationally) should be the property of the communities/ejidos/propietarios who participate in REDD+. However, it seemed that the CTC overlooked the fact that it may be very difficult to identify who has not deforested but would have done it without REDD+ (the additionality problem, see Box 2). Moreover, the argument that there could be others (other than forest owners) who take REDD+ action and who might thus 'deserve' REDD+ benefits was rejected for fear that those who did not 'deserve' rewards (here one can read 'government agencies') would lay claim to them. The view of the subgroup was that the government should bear the responsibility of providing the investments needed and that the benefits should flow to the forest owners. The idea of different systems of benefit sharing for the enhancement credits and the emission reduction credits was considered, but no clear decision was taken on this; it was perceived as being ´rather complicated for people to understand´.

3 Identification of problems and gaps

3.1 Clarifying important concepts and principles

In order to support discussion of the issues associated with benefit sharing schemes, it is important to have clarity on some basic concepts related to the definition of benefits in REDD+ and specific elements associated with, e.g. what activities can be included, eligibility for receiving carbon payments, origin and control of performance based finance.

3.1.1 What are ´benefits´ in the context of national REDD+ programmes?

Following the implementation of national REDD+ programmes in Phase 3, countries may be able to access finance based on carbon results (through 'sale' of carbon credits, or what is generally considered 'carbon finance'); for Mexico, REDD+ benefits within the international context refers to

finance for carbon performance. However, in the early phases of implementation, financing may be used that is not based on carbon results, and these investments may be considered benefits themselves, as these will also create new capacities. In addition there are non-carbon benefits. Below we identify and characterise these three potential streams of benefits, because their distribution may imply different rules or norms. Annex 1 provides a description of these potential benefits in REDD+.

3.1.2 The elements of a national/state level benefit sharing scheme

3.1.2.1 What activities would be considered ´REDD+ activities´ for allocating benefits?

Within country programmes there will be a need to link reductions in emissions and increases in removals to specific activities and geographical areas, in part for the purposes of benefit sharing and in part to provide feedback on what activities are most successful, so that internal policies can be adjusted and better targeted. Participants would most likely have to register themselves within the national REDD+ programme and indicate what activities they are carrying out over what geographical areas. Here, three different types of activities are identified:

Type A. Activities developed within the forests. These refer to activities taking place in forestland, i.e. the forest management and conservation activities that will be considered eligible for REDD+, including silvicultural procedures, improved harvesting techniques, fire control, conservation measures, etc.

Type B. Activities developed outside forests. These are activities which are essentially outside the forest sector but which may indirectly affect specific forest areas and the density of biomass within them. For example, lengthening of the cycles of shifting agriculture may increase average density of biomass in forests used for this type of production; stall feeding of cattle instead of forest grazing should improve regeneration rates; improved stoves and charcoal kilns may reduce the extraction of woodfuels. These activities might be implemented to address specific drivers of deforestation and forest degradation.

Type C. General Policies (transversal, cross-sectorial). In addition, there are activities which may affect forest cover and density over large and ill defined areas. For instance, agricultural research institutes which do research and then promote lengthening of shifting cultivation cycles, stall feeding, and improved stoves, might claim that their activities too are having an effect on forests. Beyond this there could also be sectorial and macro-economic policies and planning laws which impact on deforestation rates in a broad way (for example, the ministry of agriculture might change its policies on subsidizing clearance for agriculture). These activities might also be implemented to address specific drivers of deforestation and forest degradation.

In the international discourse on REDD+ there is increasing emphasis on a ´landscape´ approach to REDD+. Our understanding is that a landscape approach would include activities inside and outside forests, since success in reducing deforestation and forest degradation locally will be achieved only by addressing the underlying as well as the immediate drivers.

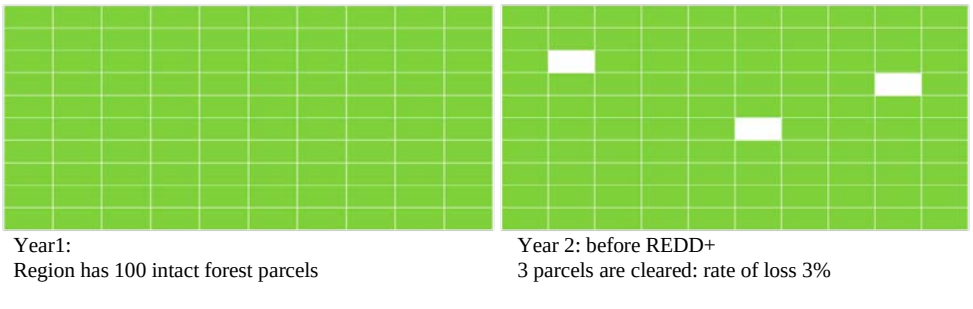
3.1.2.2 The problems of providing benefits for good carbon performance

Sharing benefits among different stakeholders. Since carbon performance is to be quantified within forested areas in relation to a baseline, it can be argued that owners of the related benefits should be those individuals, groups or organisations holding rights over forest-land. They might not be the only stakeholders who should receive compensation as part of REDD+. In REDD+, carbon performance will be measured across the entire forest area at national level. However, an integral programme would include actions outside forest area and some costs would then have to be covered

by stakeholders other than forest-landowners. This is necessary to address properly the drivers of emissions, e.g. in the agricultural sector. Then total costs of implementation of REDD+ will include implementation, transaction and opportunity costs of actions undertaken in forest-land, (Activities A above) for which carbon credits can be quantified, but also those costs related to the implementation of activities B and C. These costs would be borne by stakeholders other than forest owners. While implementers of REDD+ activities within forestland might be able to estimate their costs and the compensation they might ask for, the total cost of REDD+ will be higher than that. Thus the payment that a country might get for the carbon credits produced in forestlands would not equal the rewards for the stakeholders with rights over land.

Identifying activities and beneficiaries with additional emissions reductions. Moreover, it is difficult to identify who is responsible for the reduction of emissions (see Box 2) although it is easier to identify those responsible for increases in sequestration (forest enhancement). There is in fact a fundamental, but little understood, problem of identifying who should receive benefits for not deforesting (see Box 2). Where baselines are constructed at a regional level (or at any level higher than the individual property) it is not possible to identify which forest owners should be rewarded for avoided or reduced deforestation (although increases in stock/forest enhancement can be attributed if measured on site) (Balderas Torres and Skutsch, 2012).

Box 2. Example showing the difficulty of identifying who should receive benefits relating to the reduction of deforestation within a large geographical area.



Year1:
Region has 100 intact forest parcels

Year 2: before REDD+
3 parcels are cleared: rate of loss 3%

Year 3: without REDD+
Continuing at 3% loss, 6 parcels would be cleared by the following year

Year 3: with REDD+
However, with REDD+, the rate of loss is reduced to 2%. One parcel is ´saved´, but it is impossible to determine *which* one

3.1.2.3 Source of the finance for payments based on carbon performance

In phase 3 it is expected that finance for carbon payments will come from international performance based mechanisms (i.e. fund or market). Thus, financing will be defined by the number of carbon credits a country can deliver, measured against national baselines, and the price paid per tonne of CO_2e. The use of a national baseline implies that the total credits that a country would be eligible to receive in a given period would reflect its overall achievements in emissions reductions and removals during that period, such that gains in some parts of the country could be wiped out by

losses in other parts. This is related to the issue of leakage or shifting of emissions to other locations when one location comes under REDD+, i.e. for environmental integrity of the system. In a more general sense this also raises issues of equity when it is understood as performance/merit based on individual action since performance and compensation to stakeholders in one area will be contingent to performance of others elsewhere. It is not clear yet whether resources for results-based finance in the phase 3 of REDD+ will occur through a UNFCCC compliant market with off-sets, a global fund, or an expanded voluntary carbon market. As with any incentive based programme, it is expected that participation in REDD+ should bring net benefits to the participating countries since otherwise they would be worse-off than without it.

A key question is to define whether implementation of REDD+ would rely only on international financing or at what extent this will be added to domestic resources to fight deforestation and promote the sustainable management of forests. In the case of Mexico it is clear that on-going programmes will keep running and channelling resources for forest management. But for most countries it is not clear whether these domestic funds would be performance related in the same sense as the international funding. It is also not clear either whether these funds would meld with existing subsidy programmes for forestry or be different from these. Internal voluntary markets might also be created, although it is not clear how the internal accounting of carbon credits would relate to external accounting and national baselines. A critical challenge here is to ensure environmental integrity and avoid double counting. Another challenge is that financing for REDD+ might be relatively low, hence local resources would be required. However, if activities are already taking place with existing resources it is feared that resources from REDD+ will not produce additional results.

3.1.2.4 Who would control the flow of benefits based on carbon performance?

Although it is not clear how these resources will be transferred to REDD+ countries, it is likely that international funding will flow initially to the national government. Depending on how sub-national implementation of REDD+ and nested baselines and MRV are put in place, performance at specific regions could be assessed and part of the benefits could be attributed to specific regions (i.e. vertical benefit sharing scheme). Even though REDD+ activities may be highly dispersed within a country and operated by many independent agencies, organizations, communities etc., there must be a central accounting system. Within regional or local initiatives, benefit sharing schemes would have to distribute benefits *horizontally* among corresponding stakeholders. This in turn implies that the independent entities will register their credits in a central database. However, it is not clear whether individual projects will be able to exchange their own carbon credits directly with international markets or buyers, since the total credits the country can claim are calculated ex-post at national level based on overall achievements, and any losses at national level would have to be factored into the gains at the individual project level. As mentioned above, there are risks that good performance in one region can be offset by non-compliance elsewhere.

On the other hand, since most of forest management activities are decentralized (at least in the case of Mexico), there could be considerable public resistance to a model in which all the credits are claimed centrally by a government agency, even with assurances that the resulting fund will later be disbursed to registered participants. This dilemma has not yet been resolved for Mexico, or for any other REDD+ country for that matter. There have been suggestions from agencies working in the voluntary carbon market (usually under the term ‘nested REDD+’) that each individual project would have to put aside a buffer (say 20%) of their credits, to cover any losses that are incurred nationally, but this has not been widely accepted. Moreover it is not clear to many individual project owners why they should have to ‘pay’ for losses elsewhere in the system; this seems ‘unjust’ and non equitable to them.

3.1.2.5 On what basis should the performance based benefits be divided between those eligible?

As mentioned above there are needs to devise horizontal and vertical benefit sharing schemes. The assumption is often implicitly made that within national programmes the financial benefits that accrue from international sources should simply be shared between eligible stakeholders according to the performance of each participant, calculated in terms of the tons of carbon each participant saves, a model which generally is referred as an 'output-based benefit sharing scheme' (Box 1). However there are alternative metrics for distribution of REDD+ benefits in which benefits are tied to performance in terms of inputs and effort, rather than in terms of (carbon) outputs. These can be identified as 'input-based benefit sharing schemes' (Box 1).

As we have mentioned above and in Box 2, it is impossible to identify the beneficiaries for the case of reduced deforestation unless each property has its own baseline. Moreover, output-based systems would not reward owners who have practiced conservation earlier and continue in such activities (Box 3), since they cannot show any carbon gains. Input based systems on the other hand require much less data on performance at the local level, but spread the benefits more thinly over a much greater number of participants. The choice between these two fundamentally different approaches to REDD+ benefit sharing is crucial, as they have divergent environmental, economic, political and social implications.

Box 3. The difficulty of rewarding conservation.

Under UNFCCC REDD+ policy, conservation is included as one of the five activities or elements of REDD+. This was introduced into the international agreement as a result of lobbying by a number of countries, led by India. The reason for this was that India and a number of other countries have taken steps several decades ago to reduce deforestation rates, bringing them down to nearly zero in the last period. This means that they cannot reduce deforestation any further and would not be able to participate in REDD+. The injustice of this was clear to all the negotiating Parties, and India´s claim that conservation should also be encouraged and rewarded was accepted.

However, no mechanism for rewarding conservation has been developed at the international level. The essence of REDD+ is additionality – forests are saved that would otherwise be lost, meaning that less CO_2e is emitted, or forests are increased, meaning that more CO_2e is sequestered. This carbon will have a market or exchange value on a per ton basis. If a country conserves its stock, there is no change in carbon stocks or rate of flow, and so there is no basis on which to assess its value. Although some instruments have been proposed (¨Stock and flow¨ for example, in which a proportion of the credits from reduced D&D and enhancement of stock would be set aside to pay for conservation), no one has yet come up with a way of deciding on what basis this money should be distributed among countries who conserve their forest stock. The problem is equally difficult to resolve within countries. The simplest solution is to divide the credits ´earned´ by those participants who have reduced emissions or increased sequestration rates, among all those who are managing forests well, including those who are just conserving. This would mean that far more people would get a share of the rewards: but given that there is a fixed amount of reward available, each would get much less.

There is an issue regarding the internal distribution of benefits at local level. If the forest has a single owner, it may be relatively clear that this person should be eligible to receive compensation. However, if the forest is communally owned, while the initial recipient of the benefits would be visible (i.e. the community), questions about internal distribution of benefits may arise. In Mexico for example, even though 60% of the forest is legally owned by defined communities up to 30% of the families living in these communities do not have formal rights to land or to the common property, and there are different categories of exclusion involved that might difficult the creation of pro-poor benefit sharing schemes.

3.1.2.6 Other characteristics of benefit sharing schemes

There are a number of other elements of distribution systems that need to be considered, such as timing of the distribution (ex-post or ex-ante or a mixture of these), the form in which rewards should be delivered (in cash or in kind), and whether or not there should be restrictions on how the benefits are used (e.g. for purposes of further forest management, for community facilities, etc.). The Table below presents a summary of the main problems and gaps relating to benefit sharing in

Mexico's national REDD+ strategy, based on the analysis of documents/programmes above; this is supported by a more detailed explanation of concepts and terms in Annex 1.

Table 1. Gaps and challenges for Mexico's benefit sharing system.

Gaps and challenges	**Nature of problem**
For CONAFOR ´benefit sharing´ refers to how to divide the financial benefits from the sale/exchange of carbon credits derived from performance based activities in Phase 3, between potential claimants. Should other kinds of benefits such as (1) capacity building investments and investments made by e.g. government to stimulate/support implementation of activities; and (2) non carbon benefits gained (co-benefits) as a result of practical action in REDD+ activities Also be subject to discussion as regards how they are to be distributed?	In our view the question of who receives or should receive capacity building to enable them to participate in REDD+ is not exactly a ´distribution´ problem. It is an important policy question which needs to be considered, but separately from the question of how to distribute the financial benefits performance related credits in Phase 3. The non-carbon benefits (co-benefits) will flow automatically from participation, so there is no need to develop a separate ´distribution´ system for these.
Are REDD+ activities only in the forest? (given that REDD+ documents recognize the need for a holistic approach, should we also include Type B and Type C activities).	If e.g. agricultural drivers need to be tackled, this could involve activities outside the forest and actors who are not forest owners, would these therefore be eligible for benefits? The landscape approached stated in the ER-PIN implies that activities promoting sustainable rural development will include interventions also outside forestland.
Rights holders form only 50-70% of the population of rural communities.	Non-rights holders often depend on forest for subsistence and may be excluded from forests and from REDD+ benefits if only legal rights holders are eligible for benefits. In order to prevent and inequitable outcome, the ENAREDD+ establishes the need to create benefit sharing schemes including also stakeholders with no rights to land and then to carbon benefits.
Most women are not rights holders and would benefit only as part of a right holding family. Only about 19.8% of ejidatarios/comuneros with legal land rights are women (PROIGUALDAD, 2013); this is only one manifestation of a deeper inequality problem between statutory versus customary rights in the access and control over resources between men and women.	The lack of land rights also prevents women's access to credit and programmes to improve their livelihoods and excludes them from formal decision-making processes; this can turn out to be a serious limitation in REDD+. It is necessary REDD+ acknowledges women's rights as users and landholders to design an equitable benefit sharing scheme (PAGeREDD+) in order to adapt customary norms to include gender considerations (Nhantumbo, 2013).
Forest area is not evenly distributed, so that some communities have much more opportunity to participate than others.	Forest area per family can vary from 0.2 ha to at least 50 ha. Particularly if rewards are paid for conservation (setting aside forest) it will not only be much easier for communities with large areas to participate, but their returns will probably be much higher
The ER-PIN establishes that approved local investment plans will start implementation and might receive ex-post results based finance from the carbon fund following a sub-national verification process. However the ER-PIN does not provide specific details about the steps to nest baselines and MRV systems from the scale of the investment plan to that of State (for which baselines have been preliminary prepared in the ER-PIN). Given its intrinsic nature estimates in investment plans will rely on ex-ante expected costs and outcomes, this might facilitate the use of input-based benefit sharing schemes. It is not clear if investment plans will be approved based on financial and/or carbon feasibility criteria.	The MRV system for the activities described in the ER-PIN will be based on the national system which is focused on M&R but has no established specific guidance for the verification of emissions reductions (i.e. Figure 15 in ER-PIN does not refer to the V in MRV); this will be critical to channel results based finance at the local level. It will be also necessary to increase the geographical scale of MRV system and REL/RL to be able to monitor implementation and performance at the local level in a nested system. It is not clear which considerations will be adopted to prevent that underperformance in one project (investment plan) offsets good performance of another project both within and across states implementing the IRE. Without clear rules for benefit sharing, the additionality problem will emerge, given the difficulty of measuring performance for the case of reduced D&D. What activities will be supported and will people accept the investment in REDD+ activities as their ´benefit´? Is this fair? Should these not be considered as upfront implementation costs to be absorbed by government, not only in the first year but also

Gaps and challenges	Nature of problem
	in subsequent years? (We note that some of the investments would be used for paying labour for REDD+ activities at local level). An alternative (non-monetary) distribution mechanism would be investment in community facilities (would also likely benefit a wider range of the population).
The ER-PIN deals only with reductions in D&D and not with credits that might be earned from forest enhancement. It is not clear whether communities are free to measure, certify and sell these themselves, independently of the national REDD+ programme.	Clarity is needed on this point.
Carbon credits will be calculated at national level; in some regions may be offset by losses in other regions, meaning that the carbon credits could be cancelled out.	It may not be possible to reward regions and communities, or to provide second year funds from the sales of credits, if losses cancel out gains at the national level; this raises equity issues.
There is very little understanding about how much carbon is likely to be saved by different kinds of REDD+ activities.	There have been almost no studies which look into the effectiveness of different REDD+ activities in saving carbon, it will be some years before such information can be generated.
What REDD+ activities would likely benefit the poor most?	(See Box 4) It is clear that it is not the poor who deforest or even degrade the forest most; they do not have the capital for this, at the individual level they are labourers, working on other people's land, and are often without rights in the community. Activities which could help them might have very little impact on carbon emissions/stocks so investments targeted to the poor would be inefficient economically and ineffective environmentally. At the community level, there is no evidence that poorer communities are as a whole deforesting/degrading more than richer communities, with ditto conclusions.

Box 4. The difficulties of designing a pro-poor benefit sharing scheme.

It is obvious that there could be major difficulties in designing a ´pro-poor, needs based´ system for the distribution of benefits, firstly because reducing and reversing the specific kinds of deforestation and degradation activities in which poor people tend to be engaged may not yield as much carbon savings as activities in which richer communities and individuals are engaged. This is because (1) the resources (forests) are more frequently in the hands of the better off members of the communities (avecindados and posesionarios form the lower socio-economic classes in Mexican ejidos/communities: they are day-labourers or renters) and hence (2) in general it is not the poor but the better off who are involved in activities which result in most deforestation and degradation (clearance for permanent agriculture and urban development, unsustainable logging activities, placing of large cattle herds in the forest for grazing etc.) and who therefore have the most opportunities to reverse this. On the other hand, the opportunity costs of activities that result in D&D that are carried out by poor people may be lower than those of richer people (e.g. the opportunity cost of grazing of a few head of cattle in the forest is very small in comparison to that of converting a hectare of *selva baja* to an avocado plantation). In other words, 'poor people´s' REDD+ options might perhaps be easier, and cheaper, to implement. Secondly, as regards the strategy involving distribution of the financial benefits of the carbon savings in a socially progressive way rather than tying this entirely to performance; from a pure economic efficiency and environmental point of view this is a highly questionable approach. It would not function as an incentive since the poor are by and large not the cause of the problem, and it would mean that less financial resources would be available to incentivize those who are responsible for D&D. This kind of public policy is clearly not optimal from a pure carbon saving perspective, but it has precedents. Mexico´s PES programme put social criteria high on the agenda in the selection of communities to receive support, and paid communities a flat rate per hectare essentially regardless of the real risk of deforestation or the real opportunity costs. As a result, it has been heavily criticized for being ineffective (Alix-Garcia et al, 2005, 2012; Muñoz Piña et al, 2008), or at least highly inefficient, in reaching its environmental goals, as most of the funds went to communities which would not have deforested in any case. On the other hand, it is a strategy that is likely to be considered by the general public and civil society organizations as `equitable´, at least at the inter-community level (the focus on social criteria for PES was to a large extent the result of a public consultation process in which rural interest groups were heavily involved). It is less clear whether progressive distribution policies of this kind would be so acceptable at the intra-community level, where there are often internal conflicts between social groups. Moreover, given that ejidos and communities in Mexico have the right to manage their own resources and to a large extent write the rules for this, it is not clear whether rules for internal distribution of REDD+ benefits could be imposed from outside.

4 Criteria for evaluating benefit sharing schemes

Principles for the design of benefit sharing schemes include effectiveness, efficiency and equity in a transparent way, however there are often trade-offs among them (Hou, 2013). This section describes the characteristics of different benefit sharing options based on different evaluation criteria. Each principle described below can be measured by different criteria, variables or metrics. These are of course open to discussion, and we propose them here only as a preliminary set, which could be developed and adapted following experience in other countries for example. We suggest five main evaluation criteria: environmental effectiveness, economic efficiency, political legitimacy, social and gender equity, and potential to reach the poor. There will of course be trade-offs between these different criteria. We cannot expect quintuple win-wins, and hard decisions may have to be made at some point. We do not attempt to make such trade-offs here, merely to present in a clear way what the trade-offs might involve and what kind of information would be needed to make such decisions. We would like to invite the participants in the Dialogue to discuss the definition of these principles and metrics and make an exercise to evaluate different configurations of benefit sharing schemes.

4.1 Criteria

4.1.1 Environmental effectiveness

Although REDD+ is widely seen as needing a broad approach including social and economic considerations as well as environmental, we should not lose sight of its primary goal, which is to mitigate climate change. Environmental effectiveness of a benefit sharing scheme would be achieved when it results in high performance in carbon terms.

Metrics for Effectiveness. How much carbon can be delivered? It is still very unclear how much carbon can be saved from different kinds of REDD+ activities (how much from e.g. improved timber extraction practices, how much from lengthening shifting cultivation cycles, how much from PES to prevent deforestation, etc.). Hence it is difficult to assess in advance how effective a particular system of benefit sharing (i.e. one that encourages particular activities) will be. We believe that the only way to overcome this at the moment is to experiment with different REDD+ activities and monitor them very closely for carbon effectiveness. Apart from this, 'effectiveness' will also depend on what aspects of REDD+ are included (i.e. reduced deforestation, reduced degradation/disturbances, forest enhancement/increased sequestration, conservation etc.). It will further depend on what carbon pools are included and the extent to which non-CO_2 gases are included.

4.1.2 Economic efficiency

Economic efficiency refers to the cost per ton of carbon saved. An efficient system would reduce transaction costs and pay those who are really at risk of deforestation a major share of carbon finance; it implies careful targeting. There is a reluctance to finance 'profits' through money from REDD+ carbon benefits, some views consider that transaction, implementation and even some opportunity costs could be compensated, but not profits (Hou, 2013). Another perception is that carbon payments in REDD+ will come along with a reduced used of forest products (i.e. timber and NTFP) (Buss et al, 2013b); this can increase the perceived opportunity costs or the unwillingness to participate. A more direct linkage to beneficiaries would create more efficient mechanisms since it can lower transaction costs and transfer more benefits to actors on the ground, however the participation of the national government and a national approach is required to address leakage concerns (Hou, 2013). Benefit sharing schemes that require more administration will have higher overhead costs (in terms of measurement of carbon, verification of data, provision for dealing with grievances, etc.) and will be more expensive to run than those which need less of such services.

Metrics for Economic Efficiency: low transaction costs; majority of funds go directly to stakeholders on the ground (more direct link); activities are selected/rewarded according to the

amount of carbon per $ spent; payments are paid (mostly) to stakeholders who make real contributions to reduced emissions/enhancements (may be difficult to identify them in the case of reduced deforestation, see Box 2).

4.1.3 Political legitimacy

Political legitimacy means that the benefit sharing scheme is perceived as being fair. A big danger in REDD+ is that those with a history of deforestation in the past may be able to earn large benefits by reversing their practice, while those who have conserved their forest in the past have no such opportunity. This will be seen as unfair (not legitimate). The choice of eligible participants also raises legitimacy questions: in Mexico it is unlikely that large government agencies will be seen as legitimate recipients of REDD+ benefits since as stated in the ENAREDD+ the government is not a recipient for REDD+ benefits. At the same time, questions are being raised about the legitimacy of paying people not to deforest, given that deforestation is formally illegal. Moreover, the question about whether only those people in the communities who have formal rights to forests should benefit from REDD+ (as is stated in the law), or whether all inhabitants should be eligible, could still be debated (only 50 to 70% of the households in the average ejido in Mexico include one or more rights holders). In addition, women rarely have land/forest rights of their own.

Metrics for Political Legitimacy. A clear definition of who is eligible for REDD+ benefits is made and accepted at all levels, including within communities, and the reward system respects this. No perverse incentives are included in the benefit sharing scheme. The method of selection of activities understood as REDD+ activities is participatory and transparent. Government is not seen as paying people not to deforest.

4.1.4 Equity and gender equality

It is well known that equity can mean different things, the notion of what is 'fair' is very subjective. There are at least three clearly different interpretations (Box 5). The idea of equity can in addition be applied to the process by which programmes are designed and managed ('procedural equity'- i.e. the extent to which different groups of people get to participate in the decision making about the programme) as well as to the outcome of the programme ('distributional equity'- who benefits from the programme when it is carried out).

Gender equality implies equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female (UNREDD, 2013). According to the Concise Oxford Dictionary (7th ed., 1982) equity means fairness and it is also a recourse to principles of justice to correct or supplement law. It is in this sense that specific measures must be designed to eliminate inequalities between women and men, discrimination and to ensure equal opportunities; gender equity leads to equality (UNESCO, 2003).

It is clear that although equity is generally much to be desired, in reality it is hard to achieve, not least because the underlying resources (forests) are not equally distributed. Forest area per capita in ejidos in Mexico can vary from 0.1 ha to more than 10 ha, which means that the physical potential to participate in REDD+ is not itself equitable, and there is nothing that a REDD+ benefit sharing scheme can do about this; however a pro-poor approach to benefit sharing in REDD+ might aim to reduce the poverty gaps or at least should try not to increase them. Basically the question of equity comes down to the choice of principle: should people be rewarded because they are saving carbon, or should they be rewarded for participation (effort), and in the second case (given that not all social groups are equally able to participate, refer Box 4) should the benefits be managed in 'socially progressive' ways so that they are distributed also to groups who are perceived as being particularly

deserving, but participate less (we discuss this below in detail for the case of the poorer members of communities).The question of regional equity also arises in the sense that if one region performs well while another does badly, the carbon finance available to the first will be diminished by the losses in the second. Whether this is significant will depend in part on what proportion of the overall benefits in REDD+ are financed from the exchange value of the carbon credits, how much from regular government budgets and what is the specific procedure of nested baselines and MRV systems.

Box 5. Different interpretations of equity.

It is important to note that the term ´equitable distribution of benefits´ does not necessarily mean ´pro-poor´ - there are at least 3 different conceptions of equity that might be applicable in REDD+ (Gregorio et al, 2013):

1. Equity in the sense of: benefits go to those who merit or earn the benefits (i.e. those who reduce emissions or increase removals of CO_2e from the atmosphere). This is essentially a performance or output-based model: the benefits are proportional to the actual savings in carbon; hence the majority of the benefits go to those communities (and possibly to those individuals within communities) who are able to deliver positive carbon benefits.
2. Equity in the sense of: benefits go to those who have rights to them. This tends to tie benefits to those who have rights over the resources that would be used in REDD+ to reduce emissions. In Mexico, the rights to 59% of the forest are in the hands of ejidos and communities and around 30% in private properties (some small, some large). However, within communities, the avecindados and posesionarios (i.e. those inhabitants who are not ejidatarios/comuneros) might well have no claim to benefits since officially they have no rights to the communal forests, no vote in land use decisions and in the case of avecindados, no land themselves. They form a considerable proportion of the population (up to 50% in some ejidos, but typically 30%). Most ejidatarios are male; in the traditional way, it is assumed (rightly or wrongly) that women members of the family will receive the benefits indirectly
3. Equity in the sense of responding to social needs, which is usually seen in the context of REDD+ as the `pro-poor` approach (see: Gregorio et al, 2013). In REDD+ there are two main options for this:
   (a) Ensuring that (at least some of the) REDD+ activities promoted by the programme are deliberately directed at reducing and reversing the specific kinds of deforestation/degradation processes in which poorer communities or individuals are involved, and perhaps giving priority to these activities.
   (b) Promoting REDD+ activities which will deal with deforestation and degradation across a geographical area regardless of who is actually involved in the D&D, but ensuring that there are rules regarding the distribution of the resulting financial benefits such that poorer communities and poorer people within the communities also receive a share (thus decoupling, at least to some extent, the payment from the performance)

Metrics for Equity. Clear and transparent choice as regards the underlying principles (as outlined in the paragraph above); identification of groups considered specially deserving (women, the young, the elderly, minorities etc.); robust ways of dealing with variations in regional performance; actions eliminating social, cultural and political barriers hampering gender equality (UNDP, 2009). Effect of activities on life-spans, health, access to knowledge and income differentiated by gender; gender related issues such as time devoted to collect water, fuelwood or to produce food; statistics on violence; rights and access to natural resources and environmental services, participation in decision-making processes (UNDP, 2009).

4.1.5 Pro-poor potential

In the design of REDD+ mechanisms, there is a particular concern that benefit sharing schemes should be 'pro-poor'. Public concern regarding pro-poor REDD+ originally developed around the fear that without formal rights over resources, the poor would be kicked out of the forests (i.e. denied the uses and non-monetary benefits that they had often informally enjoyed) as soon as carbon sequestration had an exchangeable monetary value. This thinking later developed into calls for pro-poor REDD+ benefit sharing schemes. It is clear now that in most countries, including Mexico, the policy will not be considered acceptable unless it is able to deliver benefits to the poor.

There may however be major difficulties in designing a pro-poor system for the distribution of benefits (Box 4). Although in Mexico forests are to a large extent owned by communities, in general it is not the poor but the better-off within the community who are involved in activities

which result in most of the deforestation and degradation (clearance for permanent agriculture and urban development, unsustainable logging activities, placing of large cattle herds in the forest for grazing etc.) and who therefore have the most opportunities to reverse this. The poor are usually those who have become landless and have no rights to the common property forests, although they are often permitted to gather fuel wood, etc. What is not entirely clear is whether communities which as a whole are poorer, have a greater tendency to deforest than those which have higher average incomes, and therefore whether it would be possible to target REDD+ activities in a progressive way to such communities.

Metrics for Pro-Poor schemes. Local non-carbon outcomes which benefit all, including the poor (Env. services, water, NTFP, timber, local climate), activities which provide income for poorer members, e.g. allow employment of non rights-holders (e.g. wages, brigades, employment); changes in poverty gaps; benefits in the form of enhanced social services which are available to all including the poor (e.g. education, health); affirmative action (deliberate selection of poorer member of the community for capacity building exercises); clarification of rights; benefit sharing schemes that maximize the net present value of compensations in poorer areas (i.e. up-front payments given high discount rates in marginal areas).

4.2 Three models for the distribution of type 2 benefits

We suggest that taking into account the elements mentioned above, there are in essence three fundamentally different models for benefit sharing possible, although within each there is some room for variation.

4.2.1 Model 1 ('Each for himself', Individual Performance)

In this model, benefits are directly related to measured and monitored performance in achieving carbon savings (both reduced emissions and increased sequestration) within each forest property and accrue directly to the owners of the forest (in Mexico it will in many cases be a communally owned forest). The owners may not have to define the activities that result in these savings: it might be sufficient simply to demonstrate that savings have been achieved. A baseline would be required for each and every forested property to measure this. No benefits are paid to people carrying out activities outside forested areas (See Annex 1), as these cannot be measured independently. All carbon savings would be reported to the national database and a credit buffer would be incorporated to cover any losses incurred elsewhere in the country. The benefits would be ex-post, since they rely entirely on performance measurements, and for the case of communally owned forest the owners of the forest would have the right to distribute these, as they like internally.

4.2.2 Model 2 ('All Aboard')

In this model, forest owners/communities register their participation and agree to carry out a set of activities, which are designed to improve forest management or reduce deforestation/degradation.
In return for this, they receive a fixed amount of benefit per hectare (which may be paid in part upfront, but usually only after checks show that the activities have indeed been carried out). No local baseline is needed. The amount paid may vary with the kinds of activities agreed, the type of forest, the local opportunity costs, and/or the risk of deforestation/degradation in that area, but is known and fixed in advance. The activities could include type B activities and thus the participants could include people who are not owners of the forest. The payment could be in cash or in services (e.g. community facilities), and there could be some restrictions on how the payment is distributed internally (e.g. safeguards to ensure members without forest rights get some share). Carbon performance is measured at a regional or national level and credits are issued at this level; the financial value of these credits is used to create a fund to cover the benefit payments. This fund may be topped up by other sources.

4.2.3 Model 3 ('Two can Tango).

This model is a judicious combination of models 1 and 2, and is based on the idea of 'Splitting the Difference' (Balderas Torres and Skutsch, 2012). Reductions in deforestation and forest degradation are measured and monitored at regional/national level, and the national baseline covers only deforestation and degradation, not forest enhancement (i.e. it is reference emission level not a reference level). As in Model 2 a fund is created from the sales of these credits to pay agreed sums for agreed activities at the local level, which are expected to lead to reductions of emissions. This could include activities outside the forested areas (Type B in Section 3.1.2). However, growth of stock within the forest may be measured within the forest property (for example through community monitoring) and any increases may be converted to credits and sold directly by the owners of the forest either internationally or to local brokers should an internal market develop. Thus forest owners and communities could receive benefits from two different systems of crediting. Table 2 presents a summary of strong and weak points of the three models in terms of these five sets of criteria.

Table 2. Evaluation of three Models for benefit sharing schemes.

Model	**1 ¨Winners take all¨**	**2. ¨All aboard¨**	**3. ¨Two can tango¨**
Environmental effectiveness	Willingness to participate will depend on market price of carbon vis-à-vis opportunity costs. However the returns per ha of forest are higher in this model than in the others since only additionality is rewarded. Responds only to type A activities (in forests).	Unless the benefit fund is topped up from other sources, payments per ha will be much lower than in model 1 and may not be able to compete with opportunity costs, meaning low environmental effectiveness. However allows for the inclusion of type B activities (outside forests)	Environmental effectiveness depends on the balance between carbon savings due to reduced emissions and carbon savings due to forest enhancement.
Economic efficiency	All payments go to carbon savings which are additional Minimum involvement of state authorities but local MRV costs (overheads) would be high.	Low economic efficiency as many would be paid who would not have deforested. However overhead costs would be lower per ton of carbon.	Moderate economic efficiency: some payments would not be for additionality but others would; MRV costs would be moderate too.
Political legitimacy	Those who have not deforested in the past will be excluded, while those who ´broke the law´ earlier will be paid to stop doing so. Likely to be seen has highly unjust and unacceptable politically.	Much more acceptable politically than model 1 as everyone who participates will get some payment. But communities which successfully reduce deforestation may feel cheated of part of their ´rightful benefits´.	A balanced approach that gives something to each camp.
Equity	Responds to concept of ´merit based´ rights.	Responds to the concept of social and gender equality, all who participate get benefits, and can be engineered to include marginalized groups,	Combines merit based social and gender equity concepts.
Potential for pro-poor orientation	No way to steer towards pro-poor distribution as system is market based.	Can be to some extent geared to target poor communities and (some) activities involving poorer people, as it involves subsidies rather than payments tied to carbon outcomes.	Provides different channel of finance, one of which can be used for pro-poor subsidies.

5 Additional points for possible discussion

Apart from the issues we raised in Table 2, there appear to be a number of other aspects of benefit sharing that need more discussion. We propose the following:

Proposition for Discussion (1): Managing expectations. In order to manage expectations on REDD+ it will be important to clarify first, that it cannot be guaranteed that implementation of REDD+ will lead necessarily to payments for results based actions, and second that eventual payments made to forest landholders can never be equivalent to the full value of the related carbon credits as received per ton of CO_2e by the country concerned (i.e. considering the variety of transaction costs that need to be covered and stakeholders that will be involved, including those not holding rights to land).

Proposition for Discussion (2): Principles for designing step-wise benefit sharing schemes. An option to integrate the principles of effectiveness, efficiency and equity in the optimization of benefit sharing is to give more weight to different principles at different temporal stages in the implementation of REDD+ (Buss et al, 2013). However it is necessary to be cautious about disregarding equity in the early phases (Buss et al, 2013). Instead of designing for the first stages benefits sharing schemes focused on efficiency while sacrificing some equity issues as suggested by some participants in past TFD dialogues, we consider that if the systems for benefits sharing are equitable from the beginning it will be more likely they remain so in later stages, especially when newly acquired rights and benefits are integrated into the factors considered for decision-making by different stakeholders with different negotiating power (i.e. Rawlsian approach). In this context, departing from an equitable system, it will be easier to adjust the characteristics of the different incentives and programs in later phases to gain efficiency and effectiveness in learning by making processes reliant on a transparent and participatory MRV system.

Proposition for Discussion (3): Promoting compliance of early actions when no results-based mechanisms are in place. One option is to verify that initial REDD+ interventions have accomplished the objectives and goals they established initially (e.g. number of persons trained, institutions created, pilot projects established, etc.). Thus financing granted would still be based on performance and compliance with the objectives of specific interventions and in this sense it would be conditional even though mechanisms to reward carbon performance are not in place.

Proposition for Discussion (4): Trade-offs between carbon and non-carbon benefits and potential to incentivize these. REDD+ started with a major focus on the reduction of carbon emissions as means to mitigate climate change, but it has been gradually including measures to enhance non-carbon benefits. In Doha in 2012, the COP decided that the work programme to define results-based finance should incentivize non-carbon benefits, and the SBSTA was instructed to work on the associated methodological issues (UNFCCC, 2013); however there have not been any decisions adopted on this topic under the UNFCCC. This might raise new challenges for the design and implementation of REDD+ activities and benefit sharing schemes. There are methods to assess carbon performance, however it is challenging to link performance when non-carbon benefits are included (Buss et al, 2013). In this context one option for implementation of REDD+ including carbon and non-carbon benefits is to follow a no-regret approach, and to develop performance-based mechanisms for non-carbon benefits with close linkages to carbon (Hou, 2013). When selecting the activities to be implemented, countries or stakeholders at local level can make trade-offs between carbon and multiple benefits. If activities to be implemented produce more local non carbon benefits at the cost of carbon benefits, this would mean that a specific country or community would receive a lower carbon based payment, in comparison with the most carbon effective option available (e.g. when increasing timber production in opposition to forest conservation or when practices promote the use of local multi-purpose tree species which might not maximise carbon sequestration). It should be acknowledged nonetheless that there could be cases when carbon and non-carbon benefits are complementary. However it must be kept in mind that if a mitigation target is adopted to reduce a certain level of carbon emissions, thus activities should be sufficient to satisfy such target. Then, if the objective is to incentivize local non-carbon benefits, it is important

to define the role of financing of REDD+ for these purposes since resources based on carbon performance are likely to be reduced. It is necessary to consider the challenges of preparing specific baselines and integrate non-carbon benefits (e.g. hydrological services, biodiversity, NTFP) into MRV systems. One option that could be explored is to increase financing in REDD+ by having differentiated carbon prices for projects promoting different benefits. There are existing public programmes such as PES, Natural Protected Areas and social programmes for rural development that have their own methodologies to measure the impact of the interventions. These structures can provide a foundation for the systems to monitor and incentivize non-carbon benefits. However this will be very challenging considering that REDD+ financing will not be used to finance existing programmes.

Proposition for Discussion (5): The principle of additionality. Additionality can be discussed in terms of activities to be implemented (and carbon gains) and also in the context of financial resources needed. In the first case it can be argued that the baselines (REL/RL) will identify the on-going activities and expected trajectories on emissions and carbon removals, hence any activities developed producing carbon benefits beyond these would be additional. In terms of financial additionality, an example from existing carbon markets can be used (e.g. CDM). First, it can be acknowledged that all activities reducing emissions or removing carbon are producing climate benefits, and strictly in an incentive based program could be eligible to receive compensation to promote the permanence of such benefit (positive externality not valued in markets). However, given the scarcity of financial resources it is necessary to introduce the concept of additionality to avoid 'wasting' resources (e.g. Engel et al, 2008). In carbon markets, rarely carbon finance is the sole source of funding for projects. Carbon finance can provide resources to make sustainable practices economically competitive (e.g. an activity might have 4% internal rate of return without carbon finance and might not be competitive; the IRR with carbon incentives can be increased for instance to 7% then making it attractive). This approach is also used in PES to design schemes where the payment helps to make sustainable management more competitive (e.g. Pagiola and Platais, 2007). Adopting this approach would facilitate the merging of domestic resources devoted to REDD+ and forest management and those from international results-based mechanisms. In agreement with the ENAREDD+ in Mexico, this concept of additionality can be used to state that carbon finance would be used to pay for the *incremental* cost of transforming BAU practices into a model with lower carbon emissions.

Proposition for Discussion (6): Compensating previous good forest stewardship. One option to compensate previous good behaviour is to allow REDD+ participants to receive compensation for the increases in carbon stocks in their forests (carbon enhancements) (e.g. Balderas Torres and Skutsch, 2012). However still the payments might be lower than those that could be granted to areas with high historical trend of emissions from deforestation and forest degradation. Moreover in the areas were carbon stocks are in equilibrium they would not receive any benefits from carbon enhancement. In this case it would be possible to design policies with the specific objective of preventing the generation of such perverse incentives. For instance, it is possible to determine in a region the potential for carbon enhancements/sequestration, the current level of carbon stocks and the risk of deforestation/forest degradation and expected emissions (i.e. baseline expressed as a percentage of standing carbon stocks). These factors can be used to create a dual incentive-based scheme compensating participants for both, reduced emissions and carbon enhancements. It is necessary to select the baseline properly since this will mean that payments for well-conserved areas would equate payments in degraded/deforested areas with higher potential for carbon sequestration thus eliminating perverse incentives (e.g. Balderas Torres et al 2013). Another alternative is to promote productive activities that do not reduce forest carbon stocks.

Proposition for Discussion (7): Equitable participation of women in REDD+. The texts adopted by the UNFCCC at the COP stress the need to acknowledge gender considerations in REDD+; however in practice there are major challenges to ensure an equitable participation of women in the decision-making process that will lead to the implementation of REDD+ and the later distribution of benefits. It might be necessary to modify the legal framework and find ways to engage local participation of women by identifying, adapting and strengthening specific informal rules. There are major challenges to transit towards a more equitable distribution of land rights given the structure of the ejido inheritance system and the lower financial capacity of women to purchase land rights. However, a local strategy for local rural sustainable development needs to be based on a healthy, well-alimented and increasingly better educated and capable population. The role of women in all of these tasks is paramount; hence specific programmes for health, food-production, nutrition, education, and off-land productive projects can be promoted as part of REDD+ to empower women and improve their livelihoods. Part of REDD+ benefits can be directed to finance these activities while adapting the formal and informal frameworks and rules.

Proposition for Discussion (8): Sharing and controlling the flow of carbon based benefits at different geographical scales. Since the government is not identified as a recipient for REDD+ benefits, this implies all benefits should reach local actors with right to carbon benefits. However environmental integrity of performance against sub-national and national baselines need to be guaranteed, transaction and monitoring costs need to be covered, and benefits need to be shared also to stakeholder without formal rights to carbon. Thus it is necessary to regulate/control the flow of carbon based benefits across geographical scales and among different stakeholders. There would be different problems if carbon benefits are targeted only to national government or if this is done only at the local scale. One option to overcome this issue would be to identify two financing streams, one at national level that will be directed across to governmental structures (i.e. vertical distribution of benefits, national-state-municipality; and across different institutions), and another that could be streamed independently at local levels to specific projects (to distribute benefits horizontally) (e.g. carbon markets, access to financial services). However, if both streams are based on carbon performance, then still issues of environmental integrity might arise.

Proposition for Discussion (9): Potential roles of input and output based approaches for benefit sharing schemes for different phases of REDD+. Since many countries will remain in the first two implementation phases or REDD+ for the time being, this imposes the challenge of how to measure performance before the third stage, when activities will be fully MRVd and performance will be assessed on a carbon basis (Buss et al, 2013). Moreover, initially resources might not be enough to distribute them accordingly to all stakeholders. Since different mechanisms to share different benefits could be implemented gradually in the different phases of REDD+, it is important to manage expectations and maintain engagement (Buss et al, 2013). Then, the question is how to assess performance in the early phases. The selection of input or output-based benefit sharing schemes could be alternated as part of the step-wise implementation of REDD+. Taking the simple example of a market, it is known that at any given carbon price (or level of financing per ton of CO_2e) set in REDD+ mechanisms, the activities with higher costs will not be competitive and most likely will not be implemented since they might result in net economic losses. It can also be said that performance-based financing in REDD+ would resemble a market with some countries paying for the carbon produced by REDD+ countries. However, since there is not a REDD+ market yet, there are no reference carbon prices for buyers to offer payments, and it is not known either how much carbon REDD+ countries will be able to produce or how much will be demanded in the 'market'. Hence negotiations cannot take place among buyers and producers of carbon in REDD+ national programmes on an output-based approach. Nevertheless, if the objective is to implement specific REDD+ activities, although the exact carbon benefits associated cannot be known in advance, the associated implementation costs can be known. Thus, considering that there is no

market yet for national REDD+ programs (phase 3 in REDD+), at a first stage, benefit sharing schemes could be based on input-based approaches. Strictly, this would be an implicit ex-ante agreement between buyer-producer without knowing the real carbon price, or total cost per ton of CO_2e. At a later stage, when carbon performance of activities implemented can be estimated and ex-post carbon results become available, real costs per ton of CO_2e can be obtained, and opportunities for creating more effective and efficient implementation options can be explored. Thus the initial input-based system can help to set a learning-by doing process. Later in phase 3, compensation could migrate to an output-based system.

6 ANNEX 1: Clarifying important concepts and principles

6.1 What are ´benefits´ in the context of national REDD+ programmes?

As is well know, following the implementation of national REDD+ programmes in Phase 3, countries may be able to access finance based on carbon results (through `sale` of carbon credits, or what is generally considered ´carbon finance). However, in the early phases of implementation financing may be used that is not based on carbon results, and these investments may considered as benefits. In addition there are non carbon benefits. Below we identify and characterise these three potential streams of benefits, since their distribution may imply different rules or norms.

6.1.1 Type 1. Capacities created and investments to facilitate participation

There are benefits related to capacity building, in the sense that participants in REDD+ may receive funds, training, technical assistance or start up funds to enable or encourage them participate in REDD+ (ex ante). Capacity building is not limited to the technical knowledge for forest management but capacities are also required to enable communities to participate, negotiate and make collective decisions for the design of benefit sharing schemes (Buss et al, 2013). The source of this finance is not performance related and its distribution to participants is not performance related either, although the funds could be targeted to particular areas or social groups. The Mexican government has indicated it is willing to provide such benefits in the first year of REDD+, in addition to funds available from a number of existing capacity building projects under REDD+ and from the FIP.

6.1.2 Type 2. Rewards for carbon performance or for successful participation in REDD+ activities that could be in cash or in kind (ex-post)

Type 2 benefits can be considered as incentives or rewards or subsidies, depending on the design of the benefit sharing scheme. In the broadest sense they are intended to give such activities a higher economic value than they currently have, such that they can compete on a more even footing with activities that currently encourage deforestation and degradation. It is often assumed that the source of finance for these rewards would be the exchange value of the carbon credits generated (´carbon finance´), although it would be possible for governments to supplement this from other (internal) sources; thus financing to local stakeholders could take place in the form of payments per ton of CO_2e or can be cash payments detached from carbon figures (i.e. subsidies). The distribution of benefits between stakeholders within the country would not necessarily have to be performance based even though the fund itself may be largely generated by measurement of performance at national level. The ER-PIN seems to indicate that funds generated by performance in the first year will be used to cover implementation costs in the second year, and would not be distributed in the form of rewards as such, but rather as stimulus to further action. In any case, it is certain that the intention is not to reward by carbon performance.

6.1.3 Type 3. Non-carbon benefits

Finally there are non carbon benefits that may flow from these activities, such as local environmental services, general development, diversification of income sources, improved water supply that may result from introduction of sustainable forest management, but also timber and NTFP products.

REDD+ Readiness´ funds to some extent are financing activities that are building local capacities. However there is a debate on how these funds are being used: to what extent they are being used to build the national infrastructure for REDD+ including national databases and RELs etc., versus how much is being used at the grassroots level to strengthen capacity of rural people to participate in REDD+.

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