Technical Report

FAQs on Forest Economics

Cambodia, 2014

REDD+ CAMBODIA

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This report was prepared by Ralph Blaney of UNEP-World Conservation Monitoring Centre (WCMC), and does not necessarily represent the views of the National REDD+ taskforce, the Forestry Administration, or the General Department for Administration of Nature Conservation and Protection.

❖ Why do we need to measure the value of forest ecosystem services?

Forest ecosystem services play a vital role in hosting a range of species, providing clean water supply, and supporting the livelihoods of poor rural communities. However, such critical functions of the existing ecosystem are often overlooked in land-use decisions. In consequence, they are under growing pressure for conversion to other land uses.

Hence, **there is a need for the values of ecosystem services to be fully taken into consideration for land-use planning**. It is important to analyse and compare the different impacts of the alternative land-use options, by measuring the costs and benefits of different uses. For instance, an assessment can identify whether the carbon income and other benefits of the standing forest are greater than the profits from logging and growing crops on the land).

Some benefits are already measured in monetary terms, such as income from eco-tourists at particular sites and values of Non Timber Forest Products (NTFPs) e.g. honey and mushroom sold at local markets. Other benefits, such as those derived from prevention of soil erosion, will need a further assessment as their monetary value is not easily measured.

❖ What is the relationship between forest ecosystem valuation and REDD+?

REDD+ aims to reduce carbon emissions through conserving or enhancing forest carbon stocks. If we only consider the REDD+ payments, the level of benefits may not exceed the costs of conservation or protection. Especially when the costs include the opportunity costs, i.e. income derived from clearing the forest for timber and growing agricultural crops. However, this calculation does not give a full picture, since it fails to take into account other benefits from forest ecosystems. These benefits include: fuelwood, NTFPs, clean water supply, and cost savings by preventing soil erosion silting-up dams downstream, etc.

To make a fully-informed decision there is a need to account for a full range of benefits. **By fully taking into account the value of ecosystem services, benefits accrued from REDD+ are likely to be significant**, and may exceed the costs.

❖ How often should we update the valuation data?

Some environmental valuation data can be easily updated, for instance for goods and services that have clear market values and if such data is regularly collected at specific sites.

However, in the case for a non-market good or service, something that is not bought or sold directly at a market (e.g. the benefits derived from preventing soil erosion), it might be too expensive to regularly repeat the studies due to complexities in assessing the costs. In these cases an alternative approach is to use previous studies and to estimate the present values by increasing the values from past years in proportion to the inflation rate in the economy.

Yet, **a new study will be required in order to update valuations if the underlying conditions have significantly changed**. As an example, a pollination value for increased crop yields near forests was high for a specific type of crop in the past but since over the years domestic bee keeping has increased crop yields became less dependent on wild pollinators, with the result of declining values of pollination as an ecosystem service from forests in the present as compared to the past.

❖ What are the benefits with or without REDD+ implementation?

Without REDD+: What are potential benefits of not engaging in REDD+ and instead returning to previous land-use trends in Cambodia? There may be more land available for other land uses such as agriculture, rubber, and biofuels production. Significant quantities of charcoal may be available at low prices. And timber exports may boom with the economic revenue of around US$100 million a year. However, **most of these benefits are short-term as such activities are usually unsustainable**. And such benefits are likely to be captured by overseas companies and a small number of well-connected people in the country. As a consequence, forest cover may decrease to less than 50% of total Cambodian land area in 15 years, and forests may completely disappear during the next century. There would also be negative impacts on the economy as a result of increased soil erosion and severe floods, reduced tourism income, and loss of livelihoods for those communities currently dependent on forests for their livelihoods.

With REDD+: By implementing REDD+ Cambodia would benefit from the continuation of forest ecosystem services, as well as income from results-based payments (some of which can be directed at developing alternative livelihoods). Wise REDD+ planning will ensure that the value of the results-based payments and other incentives are in excess of the income from the alternative agricultural land uses at those locations where REDD+ actions are implemented. An economic analysis is required to determine the extent to which this is likely to be true. It should be noted that the benefits of REDD+ would be directed at the poor to a greater extent than benefits derived from deforestation.

❖ What is the concrete evidence which reveals the success of REDD+? (given low carbon prices)

Currently carbon credits from pilot REDD+ projects are being sold in the voluntary market. There is a large variation in voluntary carbon prices, with aspects of individual schemes being an important determinant of price (although a ton of carbon is seen as being the same everywhere the means of off-setting has different consequences, which influences price). The average off-set price in 2012[1] was US$4.80 per tCO_2e, but for forest carbon off-sets it was higher, at US$6.20 per tCO_2e, and **within forest carbon there was large variation, with prices reaching US$35.00 per tCO_2e** (as some buyers are willing to pay a premium for projects that deliver additional benefits). There is also a premium if a project can sell directly to the buyer rather than through an intermediary, with the average forest carbon off-set sold directly being 25% higher. Whilst the carbon markets are volatile at present, no-one can predict future prices. The price may reflect the quality of the project (including additional benefits) and confidence in national governance of REDD+ (i.e. the long-term security of the forest). In the context of stronger emissions reduction targets for developed countries, carbon prices (including for REDD+) would be expected to be above the current voluntary market price.

A small number of REDD+ pilot projects have demonstrated the success of payments for reducing deforestation. For example, the Kenya-based Kasigau Corridor project was issued Voluntary Carbon Units for REDD+ under the Voluntary Carbon Standard (the most widely used carbon accounting standard in the voluntary market). The protection area covers 0.2 million ha, which will offset 1 $MtCO_2$ emissions per year for the next 30 years. A key element of its success is the focus on job creation, with the project supporting jobs in children's education, conservation education, making eco-friendly products, wildlife rangers, eco-tourism, project management, helping farmers grow jojoba and chilli, and growing trees for a green charcoal project. Whilst success may not be guaranteed (as with most businesses), those projects which are well planned and have an entrepreneurial spirit experience continued growth, demonstrating real-world success of conserving forests and simultaneously improving livelihoods.

❖ How would the benefits from REDD+ be shared?

Cambodia will decide exactly how REDD+ should be implemented, and as such how the benefits will be shared among the different stakeholders. A fair and equitable system for sharing benefits is currently being designed for inclusion in the National REDD+ Strategy. This work is being led by the Benefit Sharing Technical team, supported by the REDD+ Taskforce Secretariat. Options and proposals will be subject to broad consultations through regional consultation events and the actions of the Consultation Group.

❖ Who will provide results-based payments for REDD+?

Buyers of voluntary forest carbon off-sets are private sector companies wishing to become carbon-neutral as part of their Corporate Social Responsibility aims or in preparation for compulsory carbon reductions, or brokers (the brokers will then sell-on the credits to private sector companies or individuals). Some of the carbon credits have been purchased by the World Bank (BioCarbon Fund) as well as individual governments.

[1] Peters-Stanley, M. & Yin, D. (2013) Maneuvering the Mosaic: State of the Voluntary Carbon Markets 2013. A Report by Forest Trends' Ecosystem Marketplace & Bloomberg New Energy Finance.

For REDD+, **it is anticipated that it will largely be Annex I countries providing results-based payments (at a national level rather than for individual projects).** In recent years, the options for results-based payments under REDD+ have become broader and more diverse, with various administrations establishing, or proposing to establish regulatory markets (for example, California and Japan), while various Annex I countries have also established bilateral agreements with non-Annex I countries (for example, Norway-Guyana),

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❖ What are the costs and benefits when implementing REDD+ in Cambodia?

Costs: The costs of implementing REDD+ in Cambodia will include **opportunity costs** (e.g. from not harvesting the timber and using the land for agriculture), **transaction costs** (e.g. for scheme planning, measurement, reporting and verification) and **implementation costs** (e.g. developing alternative livelihoods, monitoring, rehabilitating and policing forests).

Benefits: The tangible economic benefits of REDD+ include income from **results-based payments** as well as the **continued use of the forest resource in a sustainable way** (i.e. through eco-tourism and sustainable harvesting of timber and non-timber forest products, but there will also be savings from the reduction of problems from flooding and soil erosion).

Since costs and benefits vary spatially, a **detailed study on the value of deforestation to sell timber versus the potential value of income from results-based REDD+ payments** would involve collating data specific to Cambodia and modelling these values across provinces. **A proposal for such a study will be presented to national planning stakeholders**.

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