

Indonesia Results-Based Payment

Non-Carbon Benefits

1. Introduction

The non-carbon benefits associated with the implementation of REDD+ activities in Indonesia varies across communities and are important for the long-term sustainability of REDD-plus activities. The Land and Forest Rehabilitation plan, has the potential to increase forest carbon stock and biodiversity, support local livelihood, and mitigate natural disasters like floods and landslides while the Social Forestry programmes has important implications for community engagements and involvement in protecting the REDD+ investments.

Studies have suggested that achieving low-carbon economic development in Indonesia may have important co-benefits. For example, social forestry initiative can provide livelihood to millions of community members living around forests (New Climate Economy 2014).

Indonesia is one of few tropical nations with evidence of decreasing deforestation. This is evidence by the NATIONAL FOREST REFERENCE EMISSIONS LEVEL FOR REDD+. However, in addition to the benefits of carbon that this project is focusing on, the achievement of this level of deforestation is also driven by the provision of non-carbon benefits to the community. According to Blyth et al (2012), the success of REDD+ actions will depend to a substantial degree on the selection of appropriate locations for their implementation. This is particularly true if success is defined not only in terms of maintaining or enhancing carbon stocks, but also in terms of achieving additional social and environmental benefits, such as conservation of biodiversity and ecosystem services or promoting local livelihoods.¹

The anchor of Indonesia's forest policy is the Forestry Law, Law No. 41 (1999). The preamble of the Forest Law makes clear that the forests of Indonesia are "assets controlled by the State" ("under the state's control for the people's maximum benefit" (Art. 4(1)) which are to be "managed and utilized" in an "optimal way" so as to support its capacity to be "sustainably maintained in a wise, transparent, professional and accountable manner" and "be capable of accommodating the dynamics of community aspirations and participation, customary and cultural, as well as social values in accordance with national legal norms". The Forestry Law makes clear that all existing laws related to forestry remain effective "if not contradictory to this Law" (Art. 82).

Per the **Forestry Law**, "[a]ll forest planning is to be done in a way that is "transparent, accountable, participatory manner and taking regional peculiarity and aspirations into account." (Art.11). **Decree Number 83/Menlhk/Setjen/Kum.1/10/2016 on Social Forestry (2016)**("Decree No. 83 on Social Forestry") elaborating the Social Forestry initiative, states at Article 3 that the management of Social

¹ Blyth, S., Ravilious, C., Purwanto, J., Epple, C., Kapos, V., Barus, H., Afkar, H., Setyawan, A., Bodin, B. (2012) Using spatial information to promote multiple benefits from REDD+ in Indonesia. A compendium of maps for Central Sulawesi Province. UNEP-WCMC, Cambridge, UK.

Forestry is to observe the principles of “justice, sustainability, legal certainty, participatory; and accountability”.

With the project investing in social forestry and establishing and renewing commitment to Forest Management Units (FMUs), (see RBP Project, Output 2), it will directly lead to improved forest management and provide landscape-platform that allows conservation, rehabilitation and economic and sociocultural activities that can be complementarily implemented in addressing ecological problems, as well as socioeconomic and tenurial conflicts under an integrated management. With social forestry, access to land leads to increase in income of households and contribute to poverty alleviation. Details of these benefits are described below.

2. Environmental benefits

a Hydro regulation

The nature and value of regulating services provided by forests are dependent on the characteristics of the region with respect to the type of forest, forest area, local geographic, climatic and socioeconomic profile etc. Typical values include three regulating services, that is, soil erosion, carbon sequestration and storage and water augment. United Nations Office for REDD Coordination in Indonesia (UNORCID); United Nations Environment Programme (2015) showed that forestry regulating services are vital for the socio-economic well-being of many of Indonesia’s provinces (Table 1). For example, in Central Sulawesi, the forest ecosystem valuation study shows that one hectare of forest prevents soil erosion equivalent to 6,538 kg/ha/year, which, also considering soil nutrient loss due to surface run-off, translates to an avoided cost of approximately USD 30 per hectare of forest in a year. This ‘avoided cost’ provides a significant argument in favor of increasing investments in forest protection, as failing to do so will diminish soil quality and considerably reduce agricultural yields.

Province	GDP (in Million USD per year) ¹²	Year considered for valuation	Ground water Recharge (mm per year)		Annual differential value of recharge (mm)	Total additional recharge (million m ³ per year)	Economic Value of additional water recharge (billion USD) (% as compared to GDP)
			Forested Area	Non-Forested area			
Central Sulawesi	\$1,344	2012	1,002	556	446	12,364	2.4 (178 %)
NTT	\$5,115	2012	1,421	328	1,093	1,930	0.435 (8.5%)
Jambi	\$6,594	2012	2,070	934	1,136	3028	0.874 (13%)
East Java	\$92,125	-	-	-	-	-	-
Central Kalimantan	\$4,069	2012	1,151	908	243.18	2349	1.25 (30%)

Table 1: Differential value of recharge and the total economic value of differential recharge.

Source: United Nations Office for REDD Coordination in Indonesia (UNORCID), 2015. Forest Ecosystem Valuation Study: Indonesia.

Biodiversity

Indonesia's forests indeed provide considerable economic, social, and environmental benefits for The people of Indonesia (Ministry of Forestry, 2009). Biodiversity plays a huge role in food security, human health and livelihoods, providing clean water, timber, medicinal plants and other important services. Biodiversity also enhances community resilience to climate change impacts and contributes to carbon sequestration and climate change mitigation.

Indonesia is a tropical archipelago with 13,466 verified islands out of 17,499 islands, with a land area of 2.01 million km² and a water area of about 5.8 million km² consisting of 3.25 million km² of Indonesian waters and 2.55 million km² of Exclusive Economic Zone and an 80,791 km long coastline (Dihidros-Indonesian Navy 2012, in the Marine and Fisheries Figures 2013). Indonesia is also flanked by the Pacific Ocean and the Indian Ocean which makes Indonesia rich in biodiversity and is also known as a megadiversity country. Indonesia's biodiversity includes the diversity of living things with their variety of resources, in terrestrial, marine and aquatic ecosystems as well as their ecological complexity (LIPI, 2014). Broecker (1991) stated that Indonesia's position between two oceans namely the Pacific Ocean and Indian Ocean at 6o N – 11o S and 95o E – 141o E is very important for the global thermohaline circulation. The species and genetic diversity are also believed to be very high if based on the ecosystem diversity ranging from Indonesia's area from the east to west, at sea and on land as well as on each island. Indonesia is also an archipelagic country with a complex topography that is believed to have the richest marine biodiversity in the world (Sasai et al., 2011).

Species diversity has been reported in the 4th National Biodiversity Report, especially the number of plant species that positions Indonesia in the world big five. Of this species, 55% are endemic plants. In the diversity of fauna, about 12% of the world mammals (515 species) occur in Indonesia. Recent status of Indonesia biodiversity (LIPI, 2014) showed that the number of documented species diversity consisted of 1,500 species of algae, sporophytic plant such as 80,000 species of fungi, 595 species lichen, 2,197 species fern, and spermatophytes plant 30,000 – 40,000 species. These numbers contribute to 15,5% of total world flora, meanwhile fauna consists of 8157 species of vertebrates; mammal, bird, reptile and amphibian and fish; and invertebrates, 1900 species of butterflies that contributes to 10 % of the world species.

With the abundance of biodiversity in Indonesia, there are multiple threats affecting its benefits. Indonesian Institute of Sciences in Kekinian Kehati (LIPI, 2014) stated that the main biodiversity threat includes habitat change, influx of invasive alien species, pollution, over exploitation and climate change. Changing process and habitat lost occur because of changing in land coverage. Data from 2000 to 2009 shows the decline of dry primary forest area from 42,255,832.09 ha to 32,185,720.41 ha. This alteration follows by escalated secondary dry forest area from 38,280,269.36 ha to 44.604.933.33 ha in 2009. On the other hand, the area of secondary swamp forest diminishes and plantation area buildup. Fragmented habitat also shows the enlargement of bushes from 2000 to 2009. Changing in land use

shrinks land coverage area that leads to biota lost as was reported by Widjaja & Pratama (2013) in Central Sulawesi.

Social benefits - Integrating Sustainable Development (Co-benefits)

To effectively address the underlying causes of the drivers of deforestation, this project will contribute to a broader sustainable development agenda. Output 2 of the project with the implementation of decentralized sustainable forest governance with operationalization of Forest management Units and implementation of Social Forestry Programmes will have benefits beyond reducing emissions from deforestation and forest degradation. It is estimated that over 200,000 households will benefit from the project's support to the Social Forestry Programme.

Across Indonesia, more than 74 percent of the poor depend on ecosystem services for their basic livelihoods. Depletion of these services would thus, have dramatic effects on the livelihoods of the poor, whilst widening the national inequality gap. For instance, in East Nusa Tenggara, bearing in mind that 80 percent of the population is involved in the agricultural sector, a continued degradation of forests will deplete key regulating services for agriculture, which could particularly affect the rural poor within this province and reduce their resilience to any unexpected climate change impacts.

b Poverty Alleviation

Indonesia is the world's fourth most populous nation, the world's 10th largest economy in terms of purchasing power parity, and a member of the G-20. An emerging middle-income country, Indonesia has made enormous gains in poverty reduction, cutting the poverty rate to more than half since 1999, to 9.8% in 2018 (World Bank, 2018).

According to the World Bank, out of a population of around 264 million, about 25.9 million Indonesians still live below the poverty line. Based on March 2018 data, approximately 20.19% of the entire population remains vulnerable of falling into poverty, as their income hovers marginally above the national poverty line.

Effective management of forest relies on communities and households to use the forest efficiently given the reliance on forests for livelihoods, nutrition and food security. Understanding the co-benefits provides incentives to communities to manage the forests better. Against this setting, social forestry or community-based forestry has become an important feature of forest management in the region.

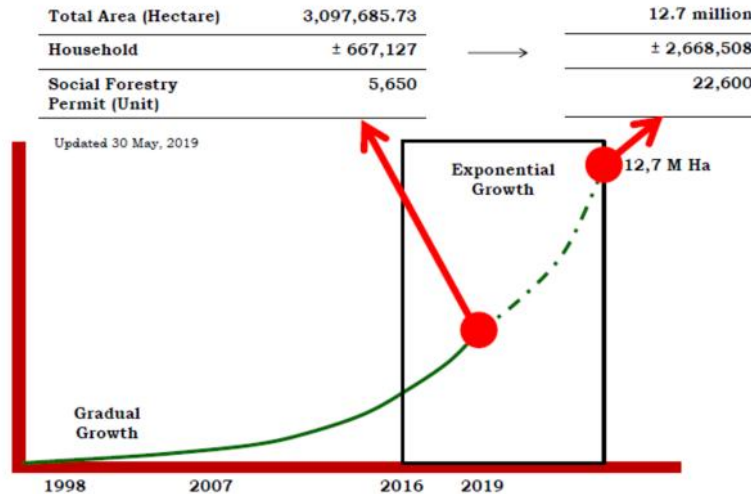
To alleviate poverty in Indonesia, Government of Indonesia committed to increase areas managed by communities from only 1% of the total forest in Indonesia as at 2016 to 12.7 million ha (30%). Between 2016 and 2018, 1.25 million hectares of land has been allocated to communities to involve in forest management and recognized in economic cycle of Indonesia.

Ministerial Decree of Forestry Number 83 of 2016 defines Social Forestry as a system of forest management enforced inside or around safe forest/forest rights/customary forest by local community/customary people as main actor to improve prosperity, environmental balance and social-

culture dynamics through Community Forest, Village Forest, Forest People Plantation, Customary Forest, Private Forestry, and Forestry Partnership.

The outcomes from investing in social forestry include increase in Gross Margin of Community/household, Employment, Economic Growth in Local Area and Gini Ratio with the goal of alleviating poverty, increasing employment, reducing social conflict and sustainable forest management.

Legal Access Distribution



c Gender empowerment

Due to insecure rights to land, forest and tree resources, discrimination and a bias towards providing services to males rather than females (Gurung and Quesada 2009, Bandiaky-Badji and Tiani 2010, Mwangi et al. 2011) REDD+ may undermine women's capacity to adapt to climate change (The World Bank et al. 2009, Demetriades and Esplen 2010).

In an effort to reduce this, Indonesia has adopted a variety of policy tools to mainstream gender issues into broader policy considerations. For example, Presidential Instructions No 9/2000 and No 3/2010 promote gender mainstreaming and inclusive development. Other legislative and policy measures include the National Machinery for the Advancement of Women (Presidential Decree of 1978), the National Action Plan for the Elimination of Violence against Women and law No 12/2003 under which each political party should consider appointing 30% of female candidates in general elections. Pursuant to the 1960 Basic Agrarian law No 5, women may own land and have access to loans. The National Development Plan (2005-2025), furthermore, identifies gender mainstreaming as a target. However, legislative efforts are often confronted with local practices and are in contradiction with the other two sources of law in Indonesia, customary law and religious law which may sometimes detrimentally affect women.

Indonesia submitted an ER-PIN in 2014 in which it mentions that outreach and consultation processes will specifically address gender issues. The development of Principles, Criteria and Indicators for REDD+ Safeguards in Indonesia (PRISAI) also aim to see the effective and full participation of all stakeholders while paying attention to gender equality. Gender equality is, furthermore, mentioned as a non-carbon benefit. The ER-PIN mentions one women's organisation that will support REDD+ processes, namely, the Ngata Toro Customary Women's Organisation (OPANT).

As part of Indonesia's UN REDD programme, a Provincial REDD+ Strategy (Strategy Daerah, STRADA)) was developed which aims to ensure that gender is mainstreamed throughout REDD processes, for instance, through FPIC, benefit-sharing mechanisms and gender-responsive indicators. STRADA led to the development of Provincial Government Regulation No 36/2012.

The benefits relating to gender empowerment will continue to increase with funding to implement the REDD+ strategy. More details on gender empowerment can be found in Annex XIIIc.

d Human rights

The benefits relating to human rights, including the right of participation in decision making, the collective rights on ancestral lands, the right to self-selection and the right to free, prior and informed consultation, are detailed in the Environmental, Social Assessment in Annex XIIIi.