REDD+ in the Amazon: the Juma Sustainable Development Reserve

Efforts to curtail deforestation and forest degradation not only address issues of biodiversity loss, but also have clear climate change mitigation benefits. Protecting the Amazon Rainforest from deforestation ensures that sequestered carbon remains locked up in terrestrial biomass; this has clear mitigation benefits. In recent years, attempts have been made to place a financial value on forests in order to reward activities which protect these terrestrial carbon stocks. This case study examines the Juma Sustainable Development Reserve (JSDR) REDD+ project and evaluates the extent to which it contributes to adaptation, mitigation and poverty reduction objectives. It is argued that maintaining forest fire breaks and improving access to basic services contributes to adaptation by improving the resilience of forests and forest dwellers and that community development and cash transfers can improve the quality of life of forest dwellers.

REDD+ programmes will be more successful if...

- indigenous groups are included in the planning phase. The REDD+ policy narrative has evolved largely within political spaces which lack indigenous representation. Forest-dwelling people are entitled to participate in meaningful negotiation prior to the implementation of initiatives.
- they give the needs of the affected communities equal weighting to the overall goal of reducing deforestation and associated carbon emissions. REDD+ initiatives must be characterised by a focus upon social justice and poverty reduction – not just reduced deforestation and forest degradation.
- assurances are given that beneficiary communities will not be forgotten if future climate change undermines the revenue-generating potential of REDD+. Forest-dwelling groups require continued support if the REDD+ market collapses in the face of forest degradation.
- there is independent analysis into the social impacts of REDD+ pilot projects. There is a lack of completely independent assessments of the JSDR. Independent fieldwork is needed to evaluate the extent to which communities are affected by REDD+ projects.

Learning lessons from the JSDR, Brazil

1 The JSDR project does not rely solely on cash transfers to families; payment takes several forms

Rather than simply transferring payments to individual households, payment takes a variety of forms, including a community development initiative. This means that large-scale investments which benefit communities, such as the building of schools or the provision of machinery for processing of forest produce, are able to be undertaken.

2 The direction of community development derives from a bottom-up process

The JSDR project is informed through a consultative workshop process, where participants are able to set out their requirements and needs. This ensures that projects result in outcomes that address poverty in a considered way and allows space for indigenous knowledge to be integrated into strategies to affect tangible change.

3 *Bolsa Floresta Familia* should take household differences into account

The scheme awards all families the same amount of compensation regardless of their size or livelihood strategy. Large families, for example, are insufficiently compensated for complying with the programme. In addition, households and communities employ different livelihood strategies, some of which are unaffected by the conditionalities of the REDD+ programme whereas others are curtailed by conditions of the scheme. A benefit structure which fails to take this into account can result in disproportionate impacts and can increase economic inequality.

4 The JSDR can be said to contribute to low carbon, climate resilient development to some extent

By preventing communities from expanding agricultural plots and monitoring other threats to deforestation, the JSDR project aims to reduce deforestation which prevents the release of carbon emissions. The scheme is also contributing to adaptation by building forest resilience through the maintenance of fire breaks; furthermore, some aspects of community development are likely to increase community resilience and, by improving access to basic services, the BF programme is improving the wellbeing of the forest community . However, whether or not the project has resulted in reduced poverty rates is unclear.

A closer look at the REDD+ mechanisms in JSDR

The Amazon region of Brazil is home to over half of the world's largest rainforest. In order to safeguard this rich and expansive natural asset, the government of the state of Amazonas implemented a large-scale programme which utilises payment for environmental services (PES). *Bolsa Floresta* (BF) was established in 2007 with its primary aim being to curtail deforestation. In addition to this, it also attempts to improve the livelihoods of the indigenous populations which live within the boundaries of the programme. BF is supported by private sector actors, such as Coca Cola Brazil, Bradeso, and Mariott International and is overseen by an independent NGO, Amazonas Sustainable Foundation (FAS) (Viana *et al*. 2008).

It has been claimed that communities did not take part in the design of BF from the outset (Pereira 2010). Some communities were said to be unaware of the project until after it had been implemented, and educational workshops explaining the nature of BF only offered communities the opportunity to accept or decline the terms, rather than negotiate them (*ibid*.).

The BF programme rewards indigenous populations that commit to 'zero deforestation' in primary forests with payment. Beneficiaries have to agree not to expand existing crop and pasture land, ensure all children attend school and maintain fire breaks.

The livelihoods of forest-dwelling communities revolve around the extraction of forest resources (e.g. Brazil nuts, copaíba oil and timber), the production of *manioc* flour and fishing. Of these income-generating activities, only timber and the production of *manioc* flour can lead to the clearance of primary forest.

The BF initiative is comprised of four funding streams which aim to support livelihood diversification and local development:

1. ***Bolsa Floresta Familia*** is directed at individual families. Beneficiary families are given a payment of US$ 25 through a debit card, which is issued to mothers.
2. ***Bolsa Floresta Associação*** is paid to family associations. This grant averages US$ 500 per month and also includes in-kind assets (e.g. a boat or internet connection).
3. ***Bolsa Floresta Social*** is a general social programme. This grant is provided for social activities; each Conservation Unit (CU) covered by the programme receives approximately US$ 70,000 per annum in the form of small investments which complement municipal or state government initiatives.
4. ***Bolsa Floresta Renda*** is aimed at supporting sustainable income generation. Around US$ 70,000 per annum is granted to each CU to assist income-generating activities relating to sustainable land and resource use (Viana *et al*. 2009).

The *Bolsa Floresta* programme

- 10 million hectares
- over 7,200 families
- over 550 communities
- comprised of 15 CUs

The JSDR Conservation Unit

- 588,612 hectares in the Novo Aripuanã Municipality
- 48 communities
- 1,872 inhabitants
- from 436 families
- 404 are beneficiaries of *Bolsa Floresta*

Investment into community development projects is informed through a participatory process which occurs through workshops comprised of community members.

The JSDR is the first REDD+ project established in The Amazon Rainforest to be independently validated. This process was implemented in accordance with criteria set out by the Climate, Community and Biodiversity Alliance (CCBA). Certification of the project was undertaken by TÜV SÜD, who in 2008 presented the project with a 'gold' award – owing to environmental and social benefits.

The JSDR project was informed by a participatory process which invited members of local government and civil society organisations to express their views; interviews with potential beneficiaries were also undertaken in all communities (Viana *et al*. 2008). The extent to which affected communities contributed to the design of the project is unknown. However, over 90 per cent of families that were invited to educational workshops regarding the design of the programme signed the commitment (Viana 2010 cited in Locatelli *et al*. 2011).

Prior to the establishment of the JSDR, 1.1 per cent of

the 588,612 hectare area had been deforested. This was said to be the result of the agricultural practices of communities and illegal land grabbers and cattle ranchers along the sides of the road connecting Novo Aripuanã to Apuí (Viana *et al*. 2008).

Carbon credits generated from the JSDR are to be sold on the voluntary carbon market. This will provide revenue for the Amazonas state government to undertake deforestation monitoring activities, uphold conservation law and support communities partaking in the initiative.

Deforestation in the Amazon Rainforest. REDD+ aims to curtail this practice by placing an economic value upon conservation

The JSDR and low carbon climate resilient development

Maintaining and preserving terrestrial carbon stocks helps prevent the release of emissions which derive from deforestation and forest degradation. By internalising this economic externality, it is hoped that carbon intensive forest practices can be avoided. According to Viana *et al*. (2008), based upon a baseline scenario which runs until 2050, the existence of the JSDR could prevent the deforestation of over 300,000 hectares of land. It is argued that this results in the avoidance of (approximately) 189,767,027 tonnes of CO_2 emissions. However, these numbers need to be treated with caution (see below). In addition to reducing deforestation, the project has another low carbon element. Through *Bolsa Floresta Associação*, the JSDR has been provided with a solar energy kit which provides community members with a low carbon source of electricity.

The JSDR Project also seeks to alleviate poverty and improve the livelihoods of the communities involved. The initiative can be understood to positively impact upon poverty in the following ways:

- **There is a clear focus upon education.** Children of beneficiary families are required to attend school. This obligation aims to boost the human capital of forest-dwelling children, providing them with improved future employment opportunities; over the last year, seven schools have been built within the JSDR. Furthermore, a 'Conservation and Sustainability Centre' informs communities about scientific issues and supplies professional training relating to fields such as biology, forest management and environmental science (Viana *et al*. 2008).
- **Community development provides better access to basic services.** *Bolsa Floresta Social* has led to investment in projects which aim to improve the quality of life of beneficiary communities. Efforts have been made to improve sanitation and access to clean water has been improved thanks to the provision of community water filters (FAS 2010).
- **Transport links have been improved.** BF has provided communities with investments aimed at improving mobility. These assets include the provision of floating docks and motorised canoes.
- **Communication facilities have been provided.** The project has also led to the installation of radio communication points and a community association computer, with internet access. These investments enhance community members' access to social networks.
- **Investment in income-generating activities supports sustainable enterprise.** Community training relating to sustainable business practice is also supplied to those in the JSDR in order to assist with forest product extraction. This includes research and development into technologies aimed at improving the quality of community produce and the provision of equipment to assist production such as: Brazil nut dehydrators, a group storehouse and an agroforestry system. Additional efforts are made to improve access to markets, for example, providing a larger boat for transporting produce. The high profile of the JSDR REDD+ project has also led to commercial interest in forest produce; the Marriot International hotel chain – one of several private sector funders – recently established a partnership to secure Brazil nuts for its hotels (FAS 2011).

The project's focus on improving access to basic services, such as clean water and sanitation, can be said to contribute to building the resilience of forest communities to climate shocks. In addition it is estimated that dry-season water stress in the East Amazon is likely to increase in the future due to projected changes in precipitation (Malhi *et al*. 2009), heightening the risk of forest fire which can result in serious damage to forest eco-systems. Communities involved in the JSDR project are required to maintain fire roads in order to curtail fire risk; the undertaking of this conditionality constitutes a form of forest adaptation (Locatelli *et al*. 2011).

Issues with the JSDR REDD+ project

It has been argued that the communities which reside within the boundaries of BF Conservation Units do not represent a significant threat to large-scale deforestation (Pereia 2010). This threat is much greater in other areas of the Amazon Rainforest where predatory logging and the expansion of agriculture are already a problem. However, it has been announced by the federal government that the road running through the JSDR is soon to be paved and historically such development has correlated with greater deforestation.

Moreover, uncertainties undermine the projected emission reductions. The model which these figures are based upon does not take into account possible future impacts of climate change upon forest resilience, and therefore permanence. This is an important point as recent events have demonstrated the fragility of forest eco-systems in response to reduced precipitation. In 2005 and 2010, in line with the El Niño Southern Oscillation, the Amazon became a net source of carbon emissions due to drought conditions (Lewis *et al*. 2011). In addition to this, assumptions are made regarding the permanence of the REDD+ project itself and the extent to which Juma communities commit to zero deforestation.

BF has also been criticised for failing to acknowledge the economic and social differences present within forest communities and households (Newton *et al*. 2012; Pereia 2010). Livelihood strategies undertaken by households differ and this leads to disproportionate impacts. Households dependent on *manioc* agriculture are restricted from expanding agricultural plots, whilst those relying on fishing or forest produce are unaffected. In addition to this, communities or households that have already deforested areas for agricultural purposes can continue to make use of this productive asset, whilst those that have not are forced to rely on other income strategies (Newton *et al*. 2012). A common finding from studies on projects which attempt to realise conservation and development objectives is that the development benefits are often secondary to the conservation ones. Reviewing such trade-offs should therefore be a consideration in the evaluation of the JSDR project.

Furthermore, although the social benefits outlined above are likely to improve the lives of forest dwellers, the overall impact on poverty rates within the JSDR is presently unknown. In order to lift households out of poverty, the JSDR project has to improve the livelihoods of beneficiaries in real terms; the extent to which this has occurred (if at all) is unclear. In fact, households/communities which rely solely on agriculture for income are restricted from increasing production and, therefore, may find themselves in a poverty trap.

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This material has been funded by UKAid from the Department for International Development; however, the views expressed do not officially reflect the Department's policies.

Further reading

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Authorship

This *Case Study* was written by Guy Crawford, a Research Assistant at IDS. It complements the Low Carbon Energy Learning Cycle of the Learning Hub. The opinions expressed are those of the author and do not necessarily reflect the views of IDS.