

## Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Vanuatu

Addressing the drivers of deforestation and forest degradation



### Key points

- Vanuatu's economy, environment and society suffers from the degradation of forests and other land.
- Urgent action is required to address the drivers of deforestation and forest degradation and thereby ensure the country's development follows a sustainable pathway.

### Issue: rapid action needed to secure Vanuatu's forest resources

**Forests have always been important for the lives and livelihood of the ni-Vanuatu people.** Forests protect critical watersheds, regulate the local climate, reduce soil erosion and water runoff. Most importantly, the protection and enhancement of forested landscapes represents a significant component of a national climate change resilience effort for a Small Island Developing State like Vanuatu that is increasingly vulnerable to extreme weather events such as tropical cyclones.

**Tree planting has always been an integral part of the traditional subsistence economy,** and the first Melanesian colonizers brought with them the most valuable trees traditionally used for food, medicine, and ritual objects. Numerous studies have shown that the deforestation occurring in Vanuatu and elsewhere in the Pacific has reduced living standards and opportunities for economic and social development.<sup>1</sup> Rural farming communities would benefit substantially from improving the ecological infrastructure of forests, as forests enhance food and income security.

**However, Vanuatu's forest ecosystems are increasingly subject to deforestation and forest degradation.** Human-induced disturbances in the ecological infrastructure due to conversion to agriculture or unsustainable timber extraction reduce the health of forest ecosystems. This is exacerbated by extreme weather events such as cyclones that cause widespread forest destruction. Most importantly, Vanuatu's forests suffer from invasive species overgrowth which stunts natural regeneration.

**Vanuatu must take rapid action in order to ensure its development pathway integrates tree planting and forest management.** The international climate change mitigation mechanism known as Reducing Emissions from Deforestation and forest Degradation (REDD+)<sup>2</sup> can provide the investment required to build a resilient green economy provides diversified local incomes and food sources while managing climate risks such as watershed protection.

**This policy brief summarizes the main findings of an analytical study commissioned by the Department of Forest to better understand the status of forests in Vanuatu, specifically what is causing forest loss and degradation.** The objective of this study is to conduct a diagnostics of the current and likely future situation to provide information that will serve as the foundation upon which to build the REDD+ strategy.

### Audience

This policy brief has been prepared for decision-makers, organizations and individuals with an interest in addressing the current problem of deforestation and forest degradation in Vanuatu

<sup>1</sup> Regenvanu et al. "Changing Forestry Regimes in Vanuatu: Is Sustainable Management Possible?" In The Contemporary Pacific, Volume 9, Number 1, Spring 1997, 73-96 ©1997 by University of Hawai'i Press; and Virannamanga et al. (2015). The Whitewood (*Endospermum medullosum*) value-chain in Vanuatu and impediments to development of a plantation-based industry. *Small-scale Forestry*, 14(2), 139-153.

<sup>2</sup> REDD+ stands for countries' efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks. For more information, see : [www.forestcarbonpartnership.org/what-redd](http://www.forestcarbonpartnership.org/what-redd)

## WHAT IS CAUSING DEFORESTATION AND DEGRADATION?

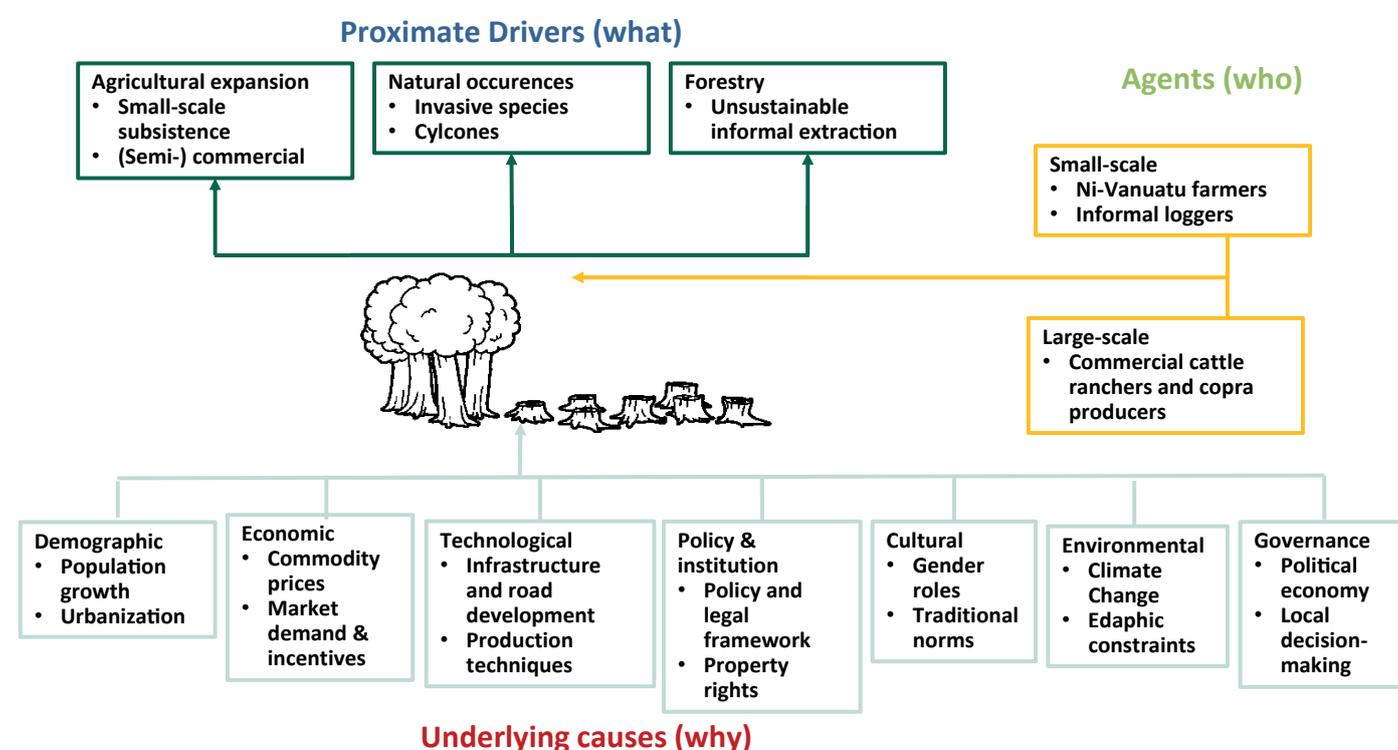
In the context of REDD+, forest in Vanuatu is defined as:

*“Land spanning (i) more than 0.5 hectares, (ii) with trees higher than 5 meters, and (iii) a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ.”<sup>3</sup>*

Deforestation is the conversion of forest cover to another type of land cover. Forest degradation is a reduction in the forests' ability to produce goods and services. Both deforestation and forest degradation can be human-induced, such as cutting trees

to plant agriculture plots, or the result of natural occurrences, such as cyclones or invasive species.

Vanuatu consists of 83 islands differing in size, vegetation, socio-economic development, and isolation in terms of access to markets and government services. This diversity has resulted in significant differences in the amount and causes of deforestation and degradation between the islands. Despite this diversity, the analysis found that deforestation in Vanuatu can generally be divided into the categories shown in the Figure below.



**Figure: Drivers, agents and underlying causes of deforestation in Vanuatu**

Source: Department of Forest. Analytical Studies on REDD+ in Vanuatu, 2017, adapted from Geist and Lambin (2001, 2002).

Proximate or direct drivers of deforestation and forest degradation are human activities and actions (land uses) that directly impact forest cover and result in the loss of carbon stocks. As shown in the Figure above, in Vanuatu these drivers can be grouped into the following general categories: i) agricultural expansion, such as commercial agriculture, shifting cultivation or cattle ranching; ii) natural occurrences such as cyclones and introduction of invasive species; and ii) forestry, e.g. through unsustainable logging.

Agents are the specific land users or groups of actors carrying out the driver activity. It is important to understand who are the deforestation/degradation agents because these are the groups or individuals that would need to be engaged to implement REDD+. These include Ni-Vanuatu smallholders, which could be custom landowners or those renting land from custom landowners, investors, or private sector actors engaged in land use activities. A relevant stakeholder here is the Government of Vanuatu which has a mandate to deliver, support and enable

<sup>3</sup> Government of Vanuatu (GOV). 2013 Readiness Preparation Proposal (R-PP) for Forest Carbon Partnership Facility (FCPF). Available for download: [www.forestcarbonpartnership.org/vanuatu](http://www.forestcarbonpartnership.org/vanuatu)

rural economic development and poverty alleviation through the provision of supporting infrastructure, regulations, policies, market access and technical support.

**Underpinning these proximate causes are underlying causes**, which are a complex of economic issues, policies, and institutional matters; technological factors; cultural or sociopolitical concerns; governance; and demographic factors. These underlying causes may not always be immediately visible, as they often stems from market forecasts, perceptions, informal norms and customs that differ significantly between ni-Vanuatu communities. However, it is important to understand these underlying causes, especially the motivation of different deforestation agents, to ensure that REDD+ strategies are effective and get to the root cause of deforestation.

### Which drivers to address through REDD+?

**When conducting assessments of drivers in the context of REDD+, it is important to take a forward-looking approach** whereby the main drivers analysed in detail are considered those that provide the most potential for a viable REDD+ strategy option. Vanuatu's REDD+ strategy must be designed to not only generate carbon benefits in the form of emission reductions or removals (carbon sequestration through tree growth), but also for the ability to generate significant "co-benefits" in the form of income and food security, community resilience and ability to adapt to climate change. With this in mind, using REDD+ to improve the production systems of smallholder farmers holds the most potential to ensure REDD+ generates significant rural development benefits and community resilience.

**Agriculture in the forms of subsistence, semi-commercial and commercial agriculture, has been identified as a main driver of deforestation and forest degradation.** Subsistence agriculture is composed of smallholder farmers growing crops mainly for their household consumption. More than eighty percent of Ni-Vanuatu are smallholder agriculturalists who work plots of land as a family unit.<sup>4</sup> Field work conducted with the Department of Forestry for this study found that fallow periods in many gardening systems are getting shorter. This leads to soil degradation and a need to expand gardening into forested areas. Further, traditional food crops are increasingly substituted or combined with cash crops, increasing the need for farmland.

**Vanuatu's traditional agriculture systems are increasingly being replaced by cash crop production, which often requires high-input mono-culture cultivated systems.**<sup>5</sup> The main crops for semi-commercial agriculture are kava, livestock, coconut, coffee (Tanna), cocoa (Malekula), and other food crops that are

produced on a commercial scale. If not conducted in a sustainable manner that integrates tree planting, these semi-commercial systems may result in soil degradation leading to deforestation pressure on forest areas. Research suggests monoculture production may negatively impact certain essential ecosystem services that forests can provide such as water allocation and purification, carbon sequestration, suppression of pests, and eradication of diseases and toxic compounds.<sup>6</sup> It is important to note that REDD+ is not incompatible with the Government's priority to develop the country's productive sectors. Rather, REDD+ aims to improve the sustainability of these crops by integrating tree planting and increasing the productivity so the need for expansion of agriculture land into forest is mitigated.

The expansion of commercial agriculture, mainly comprised of beef cattle and copra production, must be combined with a land use planning process that ensures critical forest ecosystems are not converted to agriculture. With its lush terrestrial ecosystems, Vanuatu has one of the most conducive environments in the world for raising beef cattle. Commercial cattle ranching is extensive, with livestock grazing on large areas (usually fenced pastures) and limited or no fodder production. Many small holder ranchers allow cattle to roam freely in forest areas, leading to forest degradation. In terms of copra, many existing plantations are now unproductive as the coconut palms have been planted many decades ago. Therefore, REDD+ can address this driver by diversifying land use systems where appropriate. Coconut may be replanted in some old plantations but mixed with other useful local species. Rehabilitation of leased and degraded customary land could incorporate coconut and cattle in its design, e.g. by using cattle to clear areas infested with meremmia.

In terms of forestry, the main drivers that need to be addressed through REDD+ are informally operating small-scale loggers using mobile sawmills and unsustainable biomass extraction for fuel. Although commercial forestry was a major driver of forest degradation in the past decades, the trend in annual log volumes harvested from the natural forests decreased significantly since 2000. The majority of Vanuatu's current demand for timber is met by importing pine from New Zealand and Fiji. Small-scale loggers for timber and fuelwood extraction continues with limited law enforcement. More importantly, there is limited active tree planting, as perceive natural regeneration as sufficient. However, the disturbance of natural forest caused by wood extraction often leads to invasion of merremia, which stunts or slows down the natural forest regeneration process, leaving forest degraded.

<sup>4</sup>Live & Learn Environmental Education. 2010. Navigating False Seasons, A Research of Aspirations and Perceptions and Capacity for Climate Change Adaptation Toward Food Security in the Pacific.

<sup>5</sup>Addinsall et al. (2016): Agroecological tourism: bridging conservation, food security and tourism goals to enhance smallholders' livelihoods on South Pentecost, Vanuatu, *Journal of Sustainable Tourism*.

<sup>6</sup>Rapley, J. (2006). Keynote address from neo-liberalism to the new medievalism. In S. Firth (Ed.), *Globalisation and governance in the Pacific islands* (pp. 7–21). Canberra: ANU Press.

**Vanuatu's forest ecosystems are extremely vulnerable to deforestation or degradation caused by natural occurrences such as invasive species and natural disasters.** *Merremia peltata* (Big Lif) is a major issue throughout the islands. This invasive vine does not become problematic for forest health by itself but rather after disturbance in the forest either by natural disaster or human activities. Big Lif suppresses healthy forest regrowth and is a major barrier to sustainable forest and land management in Vanuatu. The vine is viewed positively by some small holder agriculturalists as it provides soil protection during a fallow period and is highly palatable by livestock. It quickly becomes unmanageable, however, suppressing new growth and growing over forest canopy. Big Lif management is costly and difficult, requiring various management techniques and high labour inputs to manage overgrowth. The role of natural disturbance in exacerbating the problem creates uncertainty and impermanence in potential solutions to Big Lif management. Tropical cyclones such as the extremely destructive Cyclone Pam in March 2015, have severe impacts on Vanuatu's forest ecosystems. The overall loss and damage by Cyclone Pam is estimated to be VT 48.5 billion (USD 449.4 million). This is equivalent to 64.1% of the gross domestic product (GDP) in Vanuatu.<sup>7</sup> The productive sectors of agriculture and forestry were severely affected.

## Recommendations and next steps

Managing forests more sustainably at a national scale presents many opportunities to enhance human wellbeing in Vanuatu. However, the short-term monetary interests of rural land users searching for economic development, income, and food security are increasingly causing land users to opt for less sustainable forest and land management. In this context, REDD+ can provide the financial incentive and governance infrastructure required to catalyse the transition to more sustainable forest and land management. It is important that REDD+ strategies are designed as business models that can deliver improved income security and income diversification as compared to the business as usual scenario. Channelling REDD+ investments to forest-friendly land use systems and value chains can ensure the sustainability of REDD+ activities in the long term.

This study has shown that agroforestry systems provide the most promising approach to implementing REDD+. Vanuatu's diverse agroforestry systems have been integral to the traditional culture of the ni-Vanuatu people. A number of improved agroforestry systems have been identified for generating significant benefits to land users as well as the global community.

## Underlying causes of deforestation and forest degradation

**The analysis has shown that deforestation and forest degradation in Vanuatu can be attributed to a large variety of agents that have very different factors underpinning their motivation to engage in unsustainable land uses.** In general terms, deforestation is driven by the economic development needs and aspirations of rural landowners who use their forests as a means to finance their economic development. Custom landowners can use their forests as a source of revenue from the sale of timber, or from conversion of forest to non-forest land uses. This is coupled with an increasing population that requires more and more land and natural resources for smallholders to generate incomes to support their families. Vanuatu's development policy framework generally aims to strengthen the productive sector, improve farm incomes and livelihoods, and support sustainable economic growth. The increase of smallholder production and productivity is seen as essential for achieving such growth. Therefore, the overarching policy goals are aligned with reducing deforestation and forest degradation through REDD+. The issue, however, is that policy implementation is generally not optimal given the lack of public and private finance for sustainable green growth.

These benefits include climate mitigation, increased community resilience, improved financial returns for local land users, and income and food security.

At the same time, REDD+ in Vanuatu presents a number of opportunities that do not necessarily relate to sustainable business models. For example, the increasingly widespread issue of the invasive *Merremia* vine can be controlled through public investments that engage rural communities to participate in a *Merremia* eradication program. This could be developed as a Payments for Environmental Services (PES) scheme with a similar design to the Government programs that pay communities for maintaining the areas around the national roads. Further, a number of proposed conservation areas are placed increasingly high on the political agenda for their significant contribution to critical watershed management. Building on this political momentum, REDD+ can provide the finance to ensure the local stakeholder consultations are duly undertaken in a way that ensures ni-Vanuatu communities have a strong say in how REDD+ can support them to meet their development needs.

<sup>7</sup> Government of Vanuatu (2015). Vanuatu climate Change and Disaster Risk Reduction Policy 2016 – 2030. Secretariat of the Pacific Community (SPC), Suva, Fiji.