

Strategic Analysis Paper

14 November 2019

Food and Water Security in Vanuatu

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Key Points

- A significant portion of Vanuatu's population is heavily engaged in subsistence agriculture.
- Agriculture has allowed Vanuatu to maintain relatively good access to food, although nutrition-related problems persist.
- Much of Vanuatu's food production is threatened by its exposure to natural disasters. Climate change is likely to intensify these threats.
- Water management is poor. Many water sources are contaminated and sanitation is largely unregulated.

Summary

The agricultural sector in Vanuatu has deep significance for the country, with 80 per cent of the population relying on agriculture for food and income security (for farmers engaged in commercial and semi-commercial agriculture). The majority of agricultural production is subsistence based, which has helped many Vanuatans avoid serious malnutrition, especially in rural areas, where the consumption of locally-grown food is higher than that of unhealthy foreign imports. The dependence on agriculture has grown increasingly risky because of added factors such as climate change. Vanuatu is already highly prone to natural disasters, especially earthquakes and cyclones, which disrupt food production. Climate change is likely to intensify many of the climate-related hazards that Vanuatu faces and temperatures may reach the maximum heat threshold of many native crops.

While rural food supplies are generally secure outside of periods of disaster, in urban centres Vanuatu faces many of the same food and nutrition challenges as other Pacific island countries. Port Vila, the country's capital, has the highest rates of overweight and obesity,

which contrasts strongly with the incidence of stunted growth (low height for age) among children in rural areas. This is partly due to a lack of land to grow crops or raise livestock, which limits healthy food options, and also due to the higher costs of living, which further limits access to healthy options.

Vanuatu's water resources are often contaminated and groundwater in cities is increasingly coming under pressure. There is little provision for the treatment and disposal of sewage and wastewater, which allows waste to leach into other water systems.

Analysis

Vanuatu is a country comprised of [roughly 80 islands](#), 65 of which are inhabited. The capital city, Port Vila, is located on one of the larger islands, Efate. With 106 languages spoken, Vanuatu's population of [270,000](#) is one of the most linguistically diverse in the world. Forest covers [around 75 per cent](#) of Vanuatu's land and includes dense rainforest and plantation forests. Much of the natural forest is on steep inaccessible land. The population is largely rural and most people in rural areas rely on subsistence farming. Urbanisation is increasing, however, and population growth is high at 2.3% a year.

The country is categorised by the United Nations as a Least Developed Country (LDC) - according to the United Nations Development Programme's Human Development Index, Vanuatu ranks 134th out of 188 countries and territories. Despite this, Vanuatu is scheduled to graduate from LDC status in 2020, after graduation was postponed for three years in 2017. Vanuatu's [economy is largely driven](#) by its services sector, especially tourism, as well as its agriculture, fishing and industrial sectors. Although Vanuatu is one of the fastest-growing economies in the Pacific, it is highly vulnerable to natural disasters and to external economic shocks, making that growth somewhat precarious.

Agriculture

Around 80 per cent of the population of Vanuatu [relies on agriculture](#) for livelihoods and food security. The sector also generates around 20 per cent of Vanuatu's GDP. Vanuatu's agricultural sector is divided into three sub-sectors: subsistence farming, semi-commercial farming and commercial farming. The subsistence sector accounts for [75 per cent](#) of agricultural production and is predominantly centred on root crops such as taro, yam, cassava and sweet potato. Bananas, breadfruit and leafy vegetables are [also grown](#). Many households also raise small livestock such as chickens, especially in rural areas. Subsistence farming is more common in rural areas and it is estimated that up to [30 per cent](#) of the urban population has no access to land for subsistence agriculture. As a result, rural dwellers are seven times more likely than their urban counterparts to consume local foods every day.

Semi-commercial farming, in contrast, is mostly concentrated around urban areas, where high population growth and a developing tourism industry have created a growing market for food crops. Favoured crops include cabbages, tomatoes, capsicum and aubergines. Herbs and spices are also becoming increasingly popular crops in this sector.

Commercial farming is dominated by cocoa, coffee, coconut and kava. Vanilla and pepper are also gaining popularity as cash crops. The coconut sector is particularly significant. It is the [second largest contributor](#) to foreign exchange earnings, around 45 per cent to GDP, which is more than half of that provided by tourism, Vanuatu's largest economic sector. A fall in copra (dried coconut) prices [has caused a decline](#) in the coconut sector, however. Vanuatu also boasts a small livestock industry. Beef is Vanuatu's [main commercial](#) livestock sector, though a lack of farmland and a lack of government incentives have constrained the beef sector.

Fisheries

Nearly all households in coastal communities [engage in fishing](#) to some degree, which amounts to nearly [72 per cent](#) of all rural households. Artisanal and subsistence fishing helps provide rural populations in Vanuatu with [better food security](#). The sub-sector also provides economic opportunities to rural communities, although this is hard to accurately measure as catches are rarely sold in the formal market. Estimates suggest that [60-80 per cent](#) of these catches are consumed and the rest is sold in informal markets. Coastal finfish and tuna are the two main sources of fish and seafood, accounting for roughly [77 per cent](#) of consumption.

Vanuatu's commercial fishing sector is among the [least-developed](#) in the Pacific region and its contribution to GDP is correspondingly low (although this contribution has steadily grown). Growth in the commercial fishing sector is largely constrained by a lack of infrastructure, such as ports and processing plants. A lack of infrastructure [increases costs](#) for fishers to access markets.

Extreme Weather, Natural Disasters and Climate Change

Vanuatu is ranked as the [most vulnerable](#) country in the world to natural disasters, partly due to [its location](#) in the South Pacific tropical cyclone basin and the Pacific Ring of Fire (an area of the Pacific characterised by [frequent earthquakes](#)). Between 1980 and 2012, Vanuatu experienced [53 disaster events](#), 46 per cent of which were earthquakes and 35 per cent cyclones. The remainder comprised floods, volcanic activity and storms. Vanuatu's vulnerability to disaster is made worse, as a large portion of the population lives in rural areas, making disaster response and recovery [more difficult](#). When disasters occur, Vanuatu generally suffers from high levels of economic loss, averaging around [seven per cent](#) of GDP.

The capacity of natural disasters to cause widespread destruction was made clear in 2015, when Cyclone Pam swept through the country. As a [result of the disaster](#), the majority of fruit trees were destroyed or entirely stripped of fruit, all leafy vegetables were destroyed, root crops were mostly destroyed or badly damaged, many farm tools and fishing supplies were destroyed, livestock feed was lost and wild bird and flying fox populations (a source of bush meat in rural communities) declined by up to 90 per cent.

Many of the climactic risks that Vanuatu is vulnerable to are [likely to intensify](#) due to climate change. Climate change has also [disrupted seasonality](#), such as ripening crops earlier in the season, which has undermined traditional knowledge. Similarly, increasing temperatures,

rainfall variability, droughts and cyclones have put pressure on crop production. Projections also suggest that temperature increases may reach the [maximum heat tolerance threshold](#), especially for traditional crops such as taro, cassava and yam. Extreme temperatures are likely to cause wilting, heat stress and crop failure. Satellite observations have found that sea levels have risen by an average of [six millimetres](#) each year over the last two decades. As a result, seawater has increasingly [encroached on](#) coastal and low-lying farmland, and salinity has risen in freshwater lenses.

Nutrition

Like many other countries in the south-west Pacific, Vanuatu suffers from the triple burden of malnutrition: obesity (the ten most obese countries in the world are found in [this region](#)), micronutrient deficiencies and under nutrition. In a region where obesity rates regularly [surpass 60 per cent](#) of the population, Vanuatu records a relatively low rate of obesity - [only 32.9%](#) - though combined rates of overweight and obesity are 64.1%. While these rates are lower than in other Pacific countries, obesity rates have [grown rapidly](#) in Vanuatu over the last several decades. Increasing rates of overweight and obesity have contributed to elevated rates of non-communicable disease (such as cardiovascular disease and diabetes), which is now estimated to be responsible for [74 per cent](#) of all deaths in Vanuatu.

Along with overweight and obesity, high levels of [underweight and stunting](#) have been found among the population - at 15.9% and 20.1% respectively. Urban areas experience the [most food deprivation](#), despite availability, due to higher costs of living and greater reliance on cash incomes and the formal market. In Port Vila and Luganville, food, clothing and travel expenses are higher than in rural areas, while rural households are more able to consume locally produced food. Food prices have also risen more quickly than prices generally, putting further pressure on urban households. As of 2015, to be able to afford enough non-starchy fruits and vegetables for a healthy diet, an average household in Port Vila would have to spend [over a quarter](#) of its food budget. The figure increases to over 40 per cent for the poorest households (who may already spend up to three quarters of their income on food). Only 21 per cent of households spent this amount, while 23 per cent spent less than ten per cent of the cost of buying sufficient fruits and vegetables. Urban households are also [more likely to purchase](#) imported, processed foods. As a result, Port Vila has the [highest rates](#) of both stunting and overweight and obesity.

Difficulties in accessing nutritious food have led to a variety of micronutrient deficiencies. According to the most recently available data, [33.6% of children](#) aged 6-59 months are anaemic (iron deficient), as are 20.9% of women aged 15-49. Iodine deficiencies are also common.

Water, Sanitation and Hygiene

Most of Vanuatu's islands have [little permanent fresh water](#) and existing freshwater ecosystems are scattered. Streams, rivers and groundwater [are found](#) on the volcanic islands, while lower-lying islands are dependent on groundwater, harvested rainwater or freshwater lenses. Vanuatu's smallest islands have no surface or groundwater at all. To date, no country-wide assessment of Vanuatu's water supplies has been undertaken.

Outside of urban centres, water supply systems are either poor or non-existent and water quality is sub-standard and [prone to contamination](#), mostly from human and animal waste. Surface water is particularly prone to bacteriological and other contamination but in some cases groundwater, which is typically cleaner, can also be contaminated under certain circumstances. Traditionally, groundwater has been accessed by hand dug wells which, being prone to contamination, often contain water that is unsuitable for drinking. Drilled boreholes would help avoid this problem, but they require specialised machinery that requires road access. In urban areas, where there is generally less contamination, rapid population growth is putting pressure on groundwater resources. In both Port Vila and Luganville, groundwater [levels are decreasing](#) as demand for water rises.

There is no specific legislation or policy for sanitation in Vanuatu and the Department of Public Health and the Department of Geology, Mines and Water Resources both implement scattered [sanitation projects](#). There are currently no regulations for wastewater management or monitoring and most of Port Vila and Luganville [lack sewage and wastewater](#) treatment systems. As a result, waste is usually disposed of via stormwater, directly into water sources or into septic systems that leach contaminants into coastal and freshwater systems.

Vanuatu has avoided many of the food security difficulties other countries in the region face, in part thanks to high consumption of traditional crops. Despite this there is still progress to be made, especially in reducing rates of overweight and obesity, underweight and stunting, micronutrient deficiencies and water management.

Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.