Papua New Guinean Agriculture: Significant Opportunity and Much Peril

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Key Points

- At least 80 per cent of the Papua New Guinean population lives in rural areas and relies on subsistence agriculture. Rural Papua New Guineans are generally isolated from formal agricultural markets and are mostly self-sufficient.

- Malnutrition is the main food security problem in PNG and is a major health challenge for a large portion of the population. That is mainly due to high rates of stunting in young children and adult obesity.

- Prime Minister James Marape has a vision of turning PNG into the “food basket of Asia”. While PNG has developed palm oil, coffee, cocoa and copra export industries, expanding into the production of other export commodities is likely to be difficult.

Summary

Papua New Guinea is a predominantly rural society that relies on subsistence agriculture. Its Prime Minister, James Marape, has stated that he wants to diversify the economy, away from its dependence on oil and gas. He sees the further development of the agricultural sector as the best way to do that. While agriculture is a significant part of the PNG economy, its agricultural exports are almost entirely limited to coffee, palm oil and copra. Although it is possible that PNG will be able to expand the supply of those commodities, the development of other food products, such as rice or other cereals, will likely be difficult.
Analysis

Palm oil, coffee, cocoa and copra are the main agricultural exports. About 80 per cent of the 8.2 million people who live in PNG reside in rural areas and rely on staple crops of sweet potato, yam, taro, sago and banana. Sweet potato accounts for about 70 per cent of the food produced in villages and the other staples about 22 per cent. Hundreds of other fruit and vegetable species account for the remainder, which supplement the staple crops. Imported rice, meat and wheat-based food supplement domestically produced crops. The cost of those imports continues to increase, however, and now cost about two billion Kina ($850 million) each year, with rice imports alone costing 600 million Kina ($255 million).

<table>
<thead>
<tr>
<th>Main Agricultural Exports (Million US$)</th>
<th>Main Agricultural Imports (Million US$)</th>
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<tbody>
<tr>
<td>Palm oil</td>
<td>Rice</td>
</tr>
<tr>
<td>507</td>
<td>218</td>
</tr>
<tr>
<td>Coffee</td>
<td>Meat of sheep or goats</td>
</tr>
<tr>
<td>254</td>
<td>69</td>
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<tr>
<td>Cocoa beans</td>
<td>Wheat and meslin</td>
</tr>
<tr>
<td>84</td>
<td>49</td>
</tr>
<tr>
<td>Coconut (copra), or palm kernel oil</td>
<td>Other food preparations</td>
</tr>
<tr>
<td>81</td>
<td>40</td>
</tr>
<tr>
<td>Copra</td>
<td>Waters containing added sugars</td>
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<tr>
<td>15</td>
<td>35</td>
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Many villagers derive their income from the production of coffee, fresh foods, betel nut and cocoa. Palm oil is the largest source of agricultural export income for PNG, but is generally produced by large-scale commercial farms and not villagers.

The majority of the Papua New Guinean population has little regular access to imported food. Limited trade linkages can be a source of strength, as it isolates the domestic market from sometimes turbulent international food markets. The Papua New Guinean High Commissioner to Australia noted during the 2008 food price crisis that:

> A strong subsistence sector and the wantok system [an informal welfare system based on familial or tribal links] provide surrogate social welfare support for many people. The resilience of the rural majority was seen recently when steep increases in food prices caused considerable distress in many parts of the world. However, most rural people in PNG were spared the worst impact of these crises because of their strong subsistence base and cash income from agricultural export crops.

It can also be a weakness, however, as was seen during the 2015/16 El Niño. Strong El Niño events significantly reduce rainfall in normally wet areas and prolong dry seasons in areas that are seasonally dry. During abnormal conditions people adopt coping strategies, such as foraging for wild food crops, but there is often an increase in rural poverty, food insecurity, malnutrition and ill health.

Food security problems in PNG are mainly caused by quality and nutritional variety constraints. As a large portion of the population relies on a relatively small variety of food, there is high potential for malnourishment.

Almost half of the population under the age of five is physically stunted (too short for their age). Stunting is often caused by malnourishment during pregnancy or in the early stages of an infant’s life. Perhaps paradoxically, the proportion of the population under five that is overweight has also increased significantly since 2005. It is likely that both forms of malnutrition are caused mainly by a lack of dietary diversity, a lack of access to healthcare and low nutritional education.

![Graph showing the trend of under 5 stunting and overweight (%)](image-url)
Similarly, overweight and obese adults have also become more common in PNG. About half of the adult population is overweight with about 20 per cent being significantly so. It is difficult to ascertain what the main causal factors are, due to the complexity of the issue and limited research on obesity in PNG, but early findings suggest that less physical activity, the wider adoption of unhealthy diets, a lack of dietary education and increased access to unhealthy food are probable factors.

PNG Prime Minister James Marape declared that his administration would work towards economic independence over the next decade to become the ‘richest black Christian nation’
in the world’ and that agriculture would play a key part in that. He stated that ‘we must seize our own destiny, for no one else will do it for us.’ He acknowledged that most of the Papua New Guinean population live as subsistence farmers, they live simple lives, but living simple lives doesn’t mean they don’t have potential. They have assets, they have land ... PNG is blessed with fertile soil; PNG is blessed with everyone owning a piece of real estate. I’m envisioning an economy that is more rural and agriculture based. We must grow our primary production sector; supporting our people to rise above poverty level.

While the number of Papua New Guineans living in poverty has declined in the past two decades, the proportion of the population that lives in poverty is high, even when compared to other developing countries. The further development of agriculture could help to further reduce poverty levels in the country, particularly if that development focuses on valuable export commodities.

It is estimated that 30 per cent of PNG’s land has moderate to very high agricultural potential, but only about five per cent of it is being used for commercial agriculture. Prime Minister Marape is aware of the opportunities available to his country and has stated that:

Agriculture is and will be the focus of my government. When I talk about agriculture I look at greater Asia. There’s three billion people that need to drink a cup of coffee a day. There’s three billion people that need to eat a plate of rice a day ... Someone needs to grow the rice and someone needs...
to grow the coffee and someone needs to plant the food to supply the Asian people ... In 2025 and beyond, I don’t want PNG to be known as an oil and gas country. I want PNG to be known as a country that is the food basket of Asia ... Come and invest in agriculture. That is where the greatest strength of PNG is: our fish and agriculture.

Limited market access and low productivity afflict the agricultural sector, making its further development difficult. Improved transportation networks, access to rural education and extension services and a greater diversity of cash crops would help to improve productivity in PNG agriculture. It is unlikely that there will be significant progress on those issues within the next five years.

Every agricultural white paper released since independence in 1975 has recommended the development of a domestic rice industry. Several attempts have been made to develop such an industry in the decades after independence, but none has successfully reduced the country’s reliance on imported rice.

Contrary to assertions that Australia discouraged the development of a rice industry (to protect its rice exports to PNG), more field trials have been conducted on rice than any other crop. Trukai (a company based in Lae that is two-thirds owned by the Australian company SunRice, which processes and supplies most of the rice sold in PNG), continues to support the development of a local rice industry.

The PNG Government has sought foreign investment to establish a domestic rice industry. A private Indonesian company (which had no prior experience in growing rice) was approached for investment in 2016, in return for almost complete control of the PNG rice market. More recently the Philippines Government agreed to provide technical assistance and training to PNG farmers willing to grow rice. During the initial phase of the plan, PNG will lease 100,000 hectares of land to Filipino companies, which will hire 50-60,000 Filipino workers to grow the 400,000 tonnes of rice consumed annually in PNG. The Philippines will get first preference over any surplus. Optimistic estimates suggest that the first phase will increase rice production to four or five million tonnes (about five or six hundred times current production) within two years. If that initial phase is successful, there are plans to increase the rice growing area to one million hectares, or two per cent of PNG’s land. While PNG has ample amounts of fertile land that is probably suitable for rice production, it lacks the irrigation infrastructure that is required to water the rice fields. Numerous landowning groups have opposed large-scale commercial rice farming on their land in the past and it is not clear how that hurdle will be overcome.

China has also offered to invest US$600 million in the PNG-China Integrated Agriculture Industrial Park, in the Western and Eastern Highlands provinces. The park has been under discussion since at least 2017 and could include demonstration plantings of mushrooms and rice. The PNG Cabinet could approve the project in August or September and, if it is approved, work on the park could begin in October. While the project could improve PNG’s access to foreign export markets, it is unlikely that it will improve domestic food security.
With the largest fisheries zone in the South Pacific (2.4 million square kilometres) the fishing industry is also a valuable part of the economy. PNG supplies about one-fifth of the world’s tuna and its fisheries are a source of foreign investment. Fish consumption on a per capita basis is low, however, when compared to other Pacific and Asian countries.

The further development of an on-shore tuna processing industry is attractive to the PNG Government, as it would create employment opportunities and add value to its tuna exports. In 2006 it accepted a US$74 million ($107 million) concessional loan from the China Export Import Bank to build the Pacific Marine Industrial Zone in Madang, a province on the north coast of PNG. It is part of a US$235 million ($340 million) project to establish up to ten tuna canneries in PNG. A decade after signing the loan agreement, US$13 million ($18 million) had been spent on the project. There was very little to show for it, however, other than a 2.5 kilometre road that cost more than US$1.6 million ($2.3 million), a main gate that cost in excess of US$1 million ($1.5 million) and nine kilometres of fencing that had been erected at a cost of more than US$500 ($700) per metre. While the development of a tuna processing industry would clearly benefit PNG, it is less clear what China gets out of the deal other than greater access to PNG tuna stocks.

Historically PNG only gained value from its tuna resources by charging licensing fees to foreign fishing fleets. It now offers long-term fishing licences to firms that invest in domestic processing plants. A larger number of Chinese fishing vessels operating in PNG waters pose potential strategic risks. Chinese fishing vessels are increasingly acting as naval militias, not only through the cabbage strategy that they employ in the South China Sea to control and deny access to other maritime forces, but through more aggressive measures. For example, in June a Chinese fishing vessel either deliberately or accidentally collided with a Filipino fishing vessel, causing it to sink. Instead of rescuing the 22 survivors, the Chinese vessel left the area. Chinese research ships have also conducted oceanographic surveys close to Papua New Guinean waters. While those surveys are conducted lawfully, they could also be gathering useful data for future military operations.

While the PNG agricultural sector has considerable potential, and there is some foreign interest in rice production, export facilities and tuna processing, the barriers to reaching that potential remain high. A lack of transport infrastructure, opposition from landowners and a lack of agricultural training and knowledge will make it difficult for PNG to become the food basket of Asia within the next ten years.

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