



Pacific Institute of Public Policy

Key messages:

- » There is a risk of increased malnutrition and hunger in the Pacific. Rapid urbanisation has left the urban poor without access to land and income opportunities, while climate change is putting pressure on the regions rural food producers.
- » Agricultural productivity has declined in previous decades. In 2007, productivity in the Pacific was only 22% of the developing country average.
- » Fisheries and agricultural led economic growth can improve food security. Growing a diverse range of high value crops, and getting a fairer deal on tuna, will help the Pacific realise its economic advantages. Long-term growth will also require increased investment and careful land reform.
- » The use of traditional techniques to manage natural disasters has long proven successful in the Pacific. But there is room to improve these techniques with advanced research to build future resilience.

Discussion paper:

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FOOD FOR THOUGHT

Exploring food security in the Pacific

When Cyclone Yasi hit the southern islands of Vanuatu earlier this year, it destroyed many of the gardens that people rely on. But people in the Pacific have long developed methods of preserving food and surviving when affected by drought and cyclones.

'When cyclones knock over our banana and manioc, we use the leaves to cover them up until they are ripe' says Mary from Tanna. 'We also use black palm to scrape and pound the young bananas, which makes them soft and we can make *laplap*.¹ Also, the young manioc can be buried and stored underground for up to three months so we have something to eat until our gardens start to grow back again.' These remain important customs for survival, but Mary worries that some of this knowledge is being lost. 'After Cyclone Yasi, everyone expected the government to come and help them. It took a long time and when finally the government did respond by bringing rice, there were disputes over whether distribution was fair. It is important that our community remembers our customs so we can rely on ourselves for food, especially during disasters'.

It is not only natural disasters that are impacting on food security. The Pacific has become a region of contradictions when it comes to food: once abundant, there are now increasing pockets of malnutrition and hunger, especially among rural and peri-urban children, while at the same time the Pacific has some of the highest levels of obesity and diabetes in the world.

While the previous King of Tonga famously got into gym shorts and encouraged his subjects to exercise, some Micronesian states have introduced a rolling 'State of Emergency' to cope with an epidemic of non-communicable diseases.²

The region's food systems are changing. Traditional village life is being renounced in favour of an urban existence, where food is sourced from the supermarket instead of the garden. Imports are increasingly required to fill the dinner plate, as preferences are shifting and local production has not kept pace with the population increases seen around the region. Food crises are biting, resulting in pockets of food insecurity, particularly among the urban poor. The impact of climate change is predicted to bring stronger, more frequent cyclones and prolonged droughts.

This paper investigates the current status of food systems in the Pacific and looks at the changes required for achieving a food secure future.

The rural-urban food divide

The two pillars of food production in the Pacific are subsistence agriculture and inshore fisheries. Traditional food systems are secure and resilient when land is available and fisheries are abundant. This holds true in most Pacific island countries

¹ *Laplap* is Vanuatu's national dish.

² For more information, see: <http://goo.gl/KbhdU>

What is food security?

Food security is often viewed narrowly as an issue of production. But, with many analysts believing that current global production can feed the world's population—why does food insecurity continue to exist? In most cases, food insecurity is due not to insufficient production and availability, but a lack of physical, social or economic access to food. Other important requirements for food security are stability, and ensuring food contributes to health. Food stability refers to developing resilience to shocks impacting production and access, such as natural disasters, while health in the Pacific context refers to nutritional quality. A food-secure outcome has not been reached, for example, if someone is getting an adequate amount of food but is developing a nutritional disease.

and thus hunger remains at low levels.³ However, rural food security is at risk from urbanisation, land tenure issues, and increasing resource scarcity from the Pacific's high population growth (currently averaging 2.1% per year). Lucas Velin, a farmer from East New Britain, Papua New Guinea, describes the current challenges faced in the rural Pacific.

From my observations and experience, current food production is still insufficient to feed the village population and the district as a whole. The problem of food shortages is clearly seen in symptoms of malnutrition and other related diseases due to the consumption of processed and frozen food from shops.⁴

Imported food is increasingly being consumed in both rural and urban settings due to changing preferences and a lack of locally produced food in markets. This trend is most marked in the Pacific's urban and peri-urban settings. The urban poor lack direct access to land and fisheries, and with poor job prospects, this group is one of the Pacific's most food insecure. But hunger has remained uncommon even in these circumstances because relatives provide food to people who lack access to land and income. This form of welfare is described by an urban family from Fiji:

We cannot buy bread now for breakfast so my wife makes pancakes and roti. Previously we just eat as much as we like but now we get our food dished out to us. I usually check out my other neighbours and relatives for left-over food to fill up my stomach.⁵

Developing urban and peri-urban agriculture may help to increase access to food for the urban poor. Urban gardening programs are a cost effective way to improve food security. A good example is the AusAID-sponsored Foundation for Rural Enterprises and Development backyard gardening project in Fiji. From this, households have developed techniques to improve crop productivity, and have successfully increased access to both food and income-earning opportunities.⁶

Globalisation and food

Changing diets have become a strong indicator of both the positive and negative impacts globalisation is having on the region. The increased availability of imported food is increasing dietary options, but also has health implications. The trade in unhealthy food is a source of controversy throughout the region, such as the importation of fatty lamb flaps from New Zealand to Tonga. Some commentators have termed it 'dietary colonialism' and 'coca-colonisation.' Poor nutrition has caused rates of non-communicable diseases to soar. Diabetes afflicts more than 40% of adults aged 25 to 64 in Tokelau and the Marshall Islands. Without health improvements the World Health Organisation expects the number of diabetes cases to double by 2025. And because of climate change, the health of Pacific people will probably worsen before improving. Malaria is spreading to previously unaffected areas, and people suffering from micronutrient deficiencies, widespread in the region, will also have increased susceptibility to the disease. Health and food security is tightly linked, as agricultural productivity declines when farmers contract malaria and access to food is reduced when a family's breadwinner develops diabetes.

Land grabs are also a growing concern in the region. Most international land deals are occurring in Africa and Asia, but the Pacific islands are not immune. Since 2003, more than 10% of Papua New Guinea's landmass has been handed over to foreign and national corporate interests under 99 year Special Agricultural and Business Leases (SABLs).⁷ These transactions are supposedly for oil palm plantations, but as with land grabs elsewhere, securing food supply is probably also a driver. In Papua New Guinea, these deals have been conducted in a foggy manner with insufficient regulation and endemic corruption, and the rural landowners have not, in many cases, been consulted. Losing access to customary farming land damages rural food systems, as livelihoods are lost and access to alternate income opportunities are lacking in the rural Pacific. Yet, foreign land investment does not have to result in food insecurity. If regulation is sufficient and the review process thorough and transparent, land acquisition for farming can proceed without unjust land grabs and contribute to agricultural technology transfer and capacity building for farmers.⁸

³ In a 2011 report titled 'Food Security and Climate Change', the ADB estimates that from 2003–2005, 10% of the populations of Fiji, Kiribati, Samoa, Solomon Islands, and Vanuatu were receiving less than the minimum level of calorific requirements.

⁴ Velin, L (2000). 'Food Security Issues From a Farmer's Perspective'. In: Bourke, RM, Allen, MG and Salisbury, JG (eds). *Food Security for Papua New Guinea*.

⁵ Miskelly, R Cocco-Klein, S & Abbott, D (2011). *Situation Monitoring: Food Price Increases in the Pacific Islands*. UNICEF Pacific Working Paper.

⁶ For more information see: <http://goo.gl/RSs3X>

⁷ Papua New Guinea's land deals are covered in a blog post by the Development Policy Center: <http://goo.gl/4G4Qa>

⁸ The International Food Policy Research Institute highlights the threats and opportunities of land acquisition in a policy brief: <http://goo.gl/FZvJf>

Creating resilience

Pacific countries topped the World Risk Report 2011⁹ for all the wrong reasons. The Pacific is highly vulnerable to natural disasters, and the risk is multiplied as the region has insufficient resources to cope when disaster hits.

Historically, traditional risk management and food preservation strategies have been used to cope with natural disasters. For example, people preserve food by burying crops to maintain food supplies when a disaster disrupts production. The risk of certain natural disasters, such as cyclones, is projected to increase from climate change, and encouraging the use of these techniques is a cost-effective way to improve resilience. However, the use of traditional techniques is in decline, due perhaps to an increased supply of imports in rural markets or possibly because development agencies distribute food aid in times of disaster. Dr Vincent Lebot, an agronomist at the Department of Agriculture in Vanuatu, believes that trade dependence has eroded traditional techniques. Dr Lebot puts it sharply: ‘after 31 years of independence, Vanuatu is more dependent on imported food than ever, and this dependence is only increasing’.

But with imported food increasingly reaching the more isolated corners of the Pacific and food aid also having many benefits—is it possible for tradition to function in the modern landscape? First, sharing best practice traditional techniques among Pacific island countries can also improve regional food security. Second, the use of traditional techniques will probably increase if rural communities are more aware of the risks of import and aid dependence, and the benefits of using their own techniques. Third, the effectiveness of traditional techniques can be improved through research. This will be essential given the increased pressure on traditional techniques from more frequent extreme weather events predicted under climate change.

Investing in a food secure future

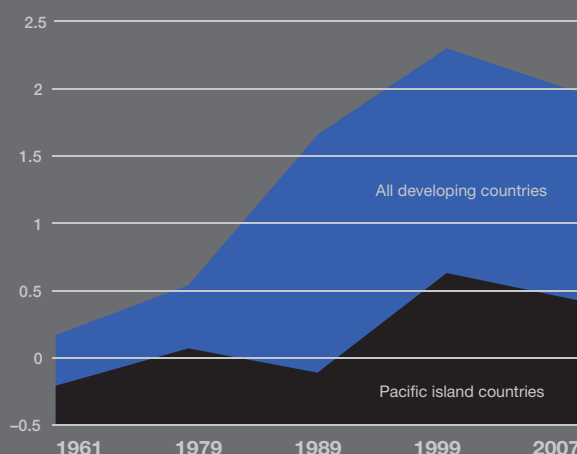
Over the last decade, declining rates of agricultural productivity across the world have caused concern. However, this is not a new phenomenon in the Pacific. The technologies and techniques developed in the ‘green revolution’ led to the productivity increases seen in developing countries since 1960. These have been underinvested in the Pacific. For example, Vanuatu’s agriculture remains mostly rain-fed and fertiliser use is low. When irrigation does occur on Vanuatu’s farms it is often backbreaking. Peter Rush Iesul, a Farming System Officer with the Department of Agriculture, noted, ‘farmers still irrigate their gardens with buckets and increased investment into green revolution technologies is required for productivity improvements to occur.’ Mr Iesul captured the gravity of the issue, stating: ‘Vanuatu has largely missed out on the green revolution.’

The Pacific faces many challenges, including increasing land scarcity, water shortages, and crop vulnerability from

⁹ World Risk Report 2011. The United Nations University, Institute for Environment and Human Security.

Agricultural productivity declining

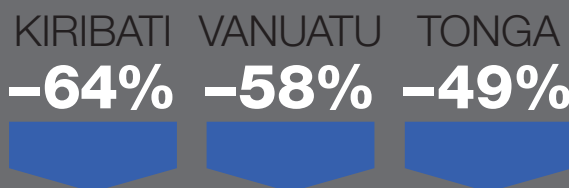
Productivity, 1961–2007



Data sourced from Fuglie, KO (2010). ‘Total Factor Productivity in the Global Agricultural Economy: Evidence from FAO Data’. In *The Shifting Patterns of Agricultural Production and Productivity Worldwide*. Productivity is measured by total factor productivity, which is the portion of output not explained by the amount of inputs used in production.

Food production is not keeping up with population growth

Percentage change in capita agricultural productivity 1961–2009 (selected countries)



Data sourced from FAOSTAT: <http://faostat.fao.org/>

climate change. Achieving productivity improvements in the face of these pressures requires strong institutions, adoption of green revolution technologies, and a particular focus on the development of new crop varieties.

Institutions promoting growth include property rights. Most resources are under customary tenure in the region, meaning that land and inshore fisheries are owned collectively and use is based on discretion. Customary land rights are effective in providing benefits at low cost, particularly in homogenous village settings. But population growth and expanding commercial agriculture are resulting in pressures. Improving security of tenure will be beneficial, especially for commercial agriculture, and if rights remain strong in village settings the costs of reform will remain low.

Water may not appear scarce in the Pacific, but as agriculture is mostly rain-fed, climate directly determines water availability. With expanded irrigation, crop yields will increase and longer or multiple growing seasons in a single year are possible. However, careful expansion is the way forward, as irrigation is the key cause of water scarcity globally and many countries are already prone to water shortages. Tuvalu had to import drinking water in 2011 due to severe drought, and Micronesian countries are currently having problems with ground water

contamination due to sea level rise. Water problems will only worsen in the region as climate change becomes more severe.

At Teouma, a village near Port Vila, Vanuatu, a project is being undertaken to develop crops resistant to climate change. Varieties of traditional crops, such as sweet potato, are chosen and planted to determine the most resistant varietal. Projects like this will become invaluable for finding crop varieties resistant to changing environmental conditions, a growing issue for agriculture based in coastal areas and low-lying atoll countries.

Sustaining growth

Why has investment in productivity improvements been so insufficient? Why does the Pacific have the most poorly performing agriculture out of all developing country regions? Improving agriculture is critical in the Pacific, as economic growth in countries with large rural populations is associated with agricultural productivity growth. Rural economic growth is currently constrained by a number of factors, such as economies of scale.

“While the Pacific remains relatively food secure, the present situation cannot be used as an excuse for inaction. Under business as usual, food insecurity will increase in all dimensions.”

The economies of small-island developing states are often too small for economies of scale to develop in agriculture and fisheries, and determining what to grow or fish is no easy task. Some have suggested that the Pacific should be the organic food garden of the world, while others have proclaimed rice should be the region's crop of choice. The problem is that many other countries, which also rely heavily on agriculture, are searching for their own comparative advantages.

One industry that has potential is mariculture, or the cultivation of marine life for food. Michael Sharp, a fisheries economist at Secretariat of the Pacific Community, suggests that ‘prawns look to have the most commercial opportunity, successful history and stable market.’ But he adds a note of caution: ‘mariculture feasibility is on a case-by-case basis and when it comes to food security, why not utilise low cost techniques to access offshore fish stocks rather than implement mariculture that is capital intensive and high risk?’ The world's largest tuna fishery is in the Pacific, and many, including Mr Sharp, think that the region's comparative advantage may lie in the sustainable harvest of this resource. Pacific island countries currently lack the capital required for harvesting tuna on a large scale, so instead rely on access fees from countries from outside the region. Palau's Vice-President, Kerai Mariur, in his opening address of the Pacific Tuna Forum 2011, highlighted the inequities in these agreements:

We have unfortunately not derived an equitable level of benefits from the harvesting of these resources. Pacific Island countries earned around US\$100 million as

resource rent or access fees from [international] fishing fleets that operated within their respective zones. That is almost 5% of the value of the catch.¹⁰

Increased participation by Pacific island countries in tuna fishing will add to the 25,000 people already employed in the industry. As most ports and processing factories are located in urban areas, increased employment opportunities will boost urban food security.

Broadly, there are three concrete steps that could improve economic performance, sustain growth, and generally improve food security. First, focusing on a range of high value agricultural and fishery products—especially tuna—will help the region realise its comparative advantage. Second, increasing processing capacity to develop value-added products would boost export revenues and help overcome trade quarantine issues. And last, food security will be improved if local food is supplied to domestic markets, which will also require investing in infrastructure and breaking the stranglehold of shipping and other infrastructural monopolies.

While the Pacific remains relatively food secure, the present situation cannot be used as an excuse for inaction. Under business as usual, food insecurity will increase in all dimensions. Current trends will only worsen: agricultural productivity will fall further below population growth, high import prices will continue hurting the urban poor, the non-communicable disease epidemic will deepen, and failure to address climate change adaptation may also see a Pacific with considerable hunger. Achieving a food secure future is within reach, but it will require a visionary response that develops resilience and builds on the strong traditions of the region.

Further reading

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Russell, L (2011). *Poverty, climate change and health in Pacific island countries*. Menzies Centre for Health Policy.

Secretariat of the Pacific Community. (2008). *Regional Policy Agenda: Food Security in the Pacific*. 38th Meeting of the Committee of Representatives of Governments and Administrations.

¹⁰ Quote sourced from: <http://goo.gl/ZRkt1>