
ECONOMIC VULNERABILITY AND RESILIENCE IN PAPUA NEW GUINEA

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Abstract. Papua New Guinea (PNG) is a small nation by international standards but dominates the Pacific Islands where it is by far the largest country in terms of population, area and natural resources. It has a small, open economy reliant on mining and petroleum resources for its immediate wealth but also possessing abundant agricultural potential and one of the largest forestry and fishery resources in the world. With all of this PNG has not been able to turn its windfall gains into solid and sustainable growth, and still relies on aid from Australia, the European Union and other donors, to balance its budget. There have been many attempts to reform the economy, the administration and the government. These have largely failed due to a lack of political commitment and lack of clear direction. If the country is to overcome the effects of its economic vulnerability, it has to find answers to its governance problems which are the cause of severe misallocation of resources. Whether it likes it or not PNG will have to come to terms with globalisation and will have to step up efficiency and macroeconomic management. PNG must seriously prepare itself to compete in a liberalised trading environment, and this can only be done with improved governance.

1. Background

Papua New Guinea (PNG) is located in the southwest region of the Pacific Basin and lies to the north of Australia. It shares a land border with Indonesia on the island of New Guinea PNG is renowned for its rugged topography, particularly in the interior, which ranks as one of the most difficult terrains to access in the world. The total land area of PNG is about 462,000 square kilometres—a mixture of tropical forests, savannah grass plains, big rivers and deltas, swamps and lagoons, and numerous islands to the eastern part of the country.

The larger islands in the country are New Britain, Bougainville, New Ireland, and Manus. The total population of PNG is approximately 5.6 million, who speak a total of 837 languages that have been

documented so far. The GDP per capita in PNG is about US\$2,000 which is one of the lowest among the Pacific island states.

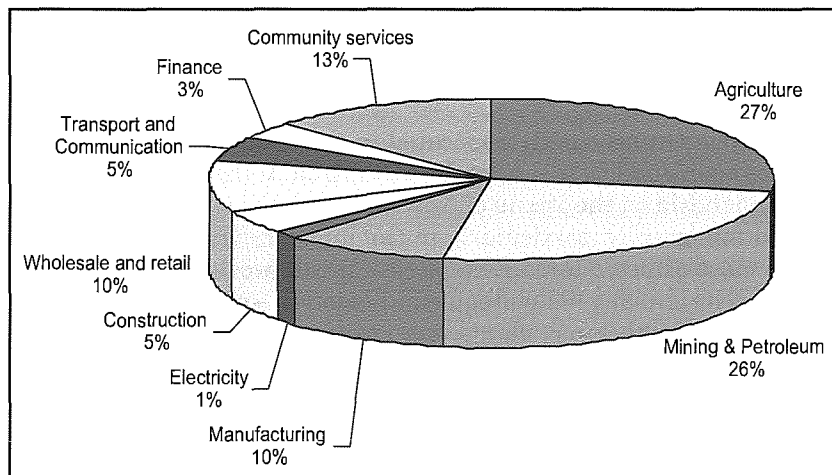
PNG is the largest state in the Pacific Islands group and smaller only than Australia in the region. Because its population is larger than the rest of the Pacific Islands states, it tends to be excluded from comparisons of the Pacific with the rest of the world. However, PNG is also vulnerable to economic and natural shocks as the rest of the Pacific small island states.

Papua New Guinea's growth pattern over the last ten years has been very unimpressive especially when compared with its population growth. Per capita income has fallen after a steep rise during the early 1990s when incomes from mineral and petroleum resource exploitation were at their peak. One of the important realities in this regard is that the mineral and petroleum income was not translated into sustainable development despite the fact that PNG has such strong potential in agriculture, forestry, fisheries and tourism.

Up until 2003, it appeared that the mining and petroleum wealth would almost be depleted due to closure of existing projects as a result of limited resources. The 2003 budget has encouraged further exploration.

The structure of the PNG economy in 2003 is shown in Figure 1. It can be seen that the economy relies heavily on agriculture, mining and petroleum, which together contribute more than 50 percent to the economy.

Figure 1
The Structure of the Economy of PNG



Source: Philemon (2003).

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Not only does PNG have a very small domestic market but it is also extremely fragmented. There is no road link between Port Moresby, the capital, and the main area of population in the Highlands. The highlands themselves are characterised by some small to medium-sized towns and thousands of small hamlets and villages, often not joined to the main centres by road and without telephones or electricity. There are also hundreds of small islands which are accessible only by sea.

The land transport infrastructure has all but collapsed and the major arterial road system is constantly being cut during heavy rain. Small airstrips and wharves are in similar conditions. Despite calls for infrastructural repair and rehabilitation since at least 1998¹ the government has not been able to allocate sufficient funds towards this end.

2. PNG's Resource Endowment

Mining and Petroleum

Table 1 presents data on mining and petroleum exports between 1995 and 2001. It can be seen that during this period, mineral and petroleum exports amounted to a very high proportion of total exports, reaching as high as 80 percent, contributing more than 25 percent of GDP.

The volume of exports is now declining as the mining and petroleum projects reach the end of their lives. All but one of the existing projects are scheduled to end by 2011 but there may be some scope for expansion of some tenements and fields. In the 1980s, PNG had a mining regime that was attractive to investors and there was considerable activity in both the mining and petroleum sectors with exploration expenditures reaching levels as high as US\$230 million in 1990 before tailing off to a mere US\$5 to US\$10 million in 2000. In 2002, the government realised that its taxation regime was unattractive to investors and overhauled it with almost instantaneous results. There were fifteen new applications for mining exploration leases in 2003 compared with only five in 2002 and thirteen have been reported by the end of February 2004 with more expected as the year goes on.

¹ The government held an economic summit in 1998 and one of the resolutions was that there was to be no new infrastructure built until existing structures had been repaired. The same call has been made at every annual economic development forum since then.

Table 1
Mining and Petroleum Exports
1995-2001 (Kina million)*

Year	Crude Oil	Gold	Copper	Total Mineral and Petroleum	Total Exports	Minerals & Petroleum as a % of total
1995	828	840	754	2435	3399	73
1996	1074	774	387	2244	3313	67
1997	852	718	259	1838	3059	60
1998	813	1228	396	2452	3687	67
1999	1382	1546	574	3524	4985	71
2000	1870	1950	595	4443	5741	77
2001	1889	2115	859	4895	6085	80

Source: Bank of Papua New Guinea; *Quarterly Economic Bulletin*; Various Issues.

* Until 1994 Papua New Guinea maintained a “hard currency” policy whereby its currency, the kina, was on a par with the US dollar and significantly higher than the Australian dollar. In 1994 it was allowed to “float” against a trade-weighted basket of currencies. Over the next ten years it declined to around one third of its previous value before stabilising and making slight but gradual recovery to today’s levels of about 1USD = 3 kina, which have been comparatively stable in 2003.

There are also five existing prospects that have been re-activated and are expected to proceed to production in the next two to three years (Government of PNG, 2004).

Agriculture

Compared to many small island developing states, PNG is well-endowed in terms of natural resources. Approximately 30 percent of PNG’s potential arable land mass, amounting to 138,000 square kilometres, is currently under cultivation (PNG Human Development Report, 1999). Its geographic diversity, from highlands at an altitude of around 3,000 metres or higher, to coastal lowlands means that it can grow almost any crop known to man. Despite this it is a small player in the world markets in the production of all its cash crops such as oil palm, coffee, cocoa, copra/coconut oil, tea, rubber, vanilla and some minor crops. The majority of PNG’s population have access to land and produce at least part of what they consume.

Fisheries

The fisheries potential of PNG is very large, with an exclusive economic zone of 2.4 million square kilometres, one of the largest in the Pacific region, and recognised as one of the most productive in the world for oceanic tunas and associated species. The wide coastal waters, reefs and lagoons, and the extensive riverine and inland waters are also

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moderately productive for a range of marine and freshwater resources. In most cases, the diverse range of resources is largely unexploited and offers great potential for artisanal, commercial and industrial development.

Several estimates of the sustainable fisheries production of PNG have been made. One of these is reproduced in Table 2. Some of these estimates appear high with the benefit of more recent information, notably in the case of the migratory tunas, where catches in adjacent areas have risen considerably, and more recent estimates of sustainable harvest of tuna might be as much as 100,000 tonnes lower. The current harvest levels for most of these resource groups represent only a fraction of the available potential.

This could have an export value of as much as one billion PNG Kina (US\$300 million), compared to the maximum that has been realised so far of around 300 million PNG Kina.

Table 2
Fish Resources of Papua New Guinea (2004)

Product/habitat type	Potential tonnes
Shore and reef sedentary species	2,000
Prawns, lobsters, crabs	3,000
Reef areas, bays	80,000
Estuarine	11,000
Coastal pelagics	58,000
Sharks, rays and sawfish	6,000
Tuna	355,000
Offshore pelagics	72,000
Offshore sharks and billfish	14,000
Offshore demersal finfish and crustacean	67,000
Total	668,000

Source: Lewis, A. (forthcoming).

Forestry

Papua New Guinea had 30,601 square kilometres of forest in 2000, much of which is on inaccessible terrain. Over the previous 10 years, there was a reduction of 1,129 square kilometres forest due to intensive logging. One of the largest tropical hard wood forests remaining in the world today is located in PNG. There is an ongoing dispute between the World Bank and the Government of PNG about

the industry and there have been no new leases issued legally since 1999. The dispute has been about logging companies who have been operating outside the laws of PNG and there has been lasting damage to much of PNG's forest resources due to unscrupulous logging over the last twenty years. PNG legislation has allowed logging companies to negotiate directly with village landowners, often to the detriment of the latter.

The forestry sector, made up of various components, including harvesting, sawn timber, plywood manufacture, veneer production, furniture making and forest plantation activities, is PNG's second largest industry and makes a major contribution to GDP. It currently employs about 7,500 people, representing approximately four percent of total formal employment. The total value of manufactured forest products in 2002 was some US\$33 million.

After 60 years of revenue generation and active forest management regimes, only 3.7 million hectares of the PNG land base is under active forest management and there are only 65,000 hectares of plantations.

Even so, if allowed to operate efficiently, this small forest base is capable of producing a sustainable income inflow, amounting to about US\$270 million annually at current prices; with some US\$85 million paid in export taxes/levies and with landowners receiving some US\$20 million in direct payments.

Tourism

It is impossible to accurately estimate the potential value of tourism to PNG but Fiji, which is a smaller country without the broad range of diversity that PNG enjoys, receives around 400,000 tourists per year spending roughly US\$1,000 per head. PNG's tourist numbers have been declining due to problems of law and order and cost of transport and accommodation.

Imports

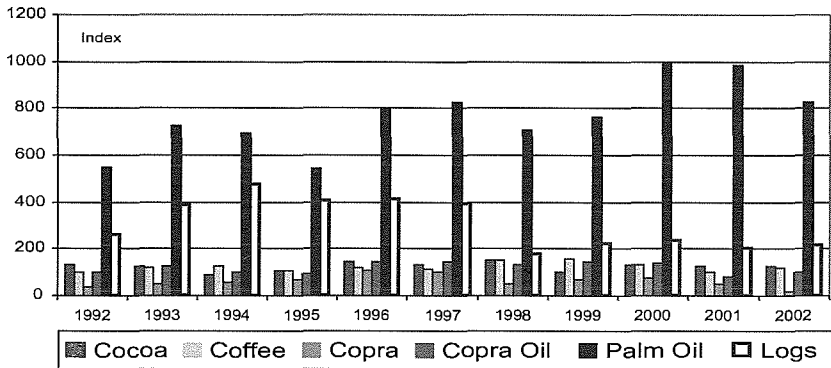
PNG depends heavily on imports of capital goods and for some of its foodstuffs. The main food imports are rice, wheat for flour, meat products, fish for canning, fuel and fuel products. The government has promoted a policy of import substitution over the past decade but this has not been very successful, often resulting in domestic production of protected goods which add very little value to imported inputs.

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Exports

As already explained, compared with other small states PNG has the potential to earn income from many different agricultural crops, forestry, fisheries and tourism. However it has a relatively small cash cropping sector which (except for palm oil) has virtually stagnated over the last decade, as shown in Figure 2.

Figure 2
Export Volume Indices (1980=100)



Source: Bank of Papua New Guinea (2002).

Manufacturing is confined to processing of snack foods, steel fabrication, chemicals, salt, canneries for fish and meat and cement. However there are very few manufactured exports.

Domestic Competition Policy

There has been an attempt to introduce a competition policy in PNG, and an Independent Consumer and Competition Commission has been set up to promote competition and protect consumers (see Kalinoe, 2002). However like other states with a small domestic market, PNG suffers from the fact that many quasi-public enterprises are not large enough to attract more than one buyer and natural monopolies exist in areas of telecommunication, electricity, air transport, water supply and others. Competition and consumer service obligations policies are therefore very difficult to put in place and state regulators are not always able to compel a dominant business entity to charge fair prices and use best practices or upgrade its technologies.

Like many other countries, Papua New Guinea embarked upon a privatisation policy early in the 1990s and this policy has been half-heartedly pursued by successive governments. As a result there has

been very little progress and only one major entity, a state-owned commercial bank, has been privatised so far.

3. Economic Vulnerability

The economic vulnerability of small island states is well documented (Briguglio, 1995; Commonwealth Secretariat, 2001). Such vulnerability is inherent and is mostly associated with the small size of the domestic market and high reliance on imports and exports. Although Papua New Guinea is relatively large in terms of land area, it exhibits many characteristics which are common to small island states. As already explained, the country has a small and fragmented domestic market, and is very dependent on international trade. PNG, like many small island states, is a price taker for both its exports and imports and therefore highly vulnerable to the commodity cycles of its major exports including oil, gold, copper, oil palm, coffee, cocoa, copra and spices.

PNG is large enough in terms of land area to warrant regular shipping to its major ports, however there is little competition because, paradoxically, the market is not large enough to attract a number of competing lines.

Freight rates to and from PNG are higher than for larger South East Asian countries such as Sri Lanka with which PNG competes for tropical tree crop exports. The main reason for such high transport costs through PNG's ports is related to the low volumes and lack of competition. PNG does not allow overseas vessels to uplift cargos between domestic ports.

4. Building Resilience

The best way that economically vulnerable countries can protect themselves from external shocks is through good economic management. There are advocates of self-sufficiency, arguing that a small island state can shelter itself against shocks by depending less on imports, through import substitution policies. The experience of PNG and other small states clearly show that such policies are self-defeating. Import-substitution possibilities for small states have been shown to be extremely limited (Worrell, 1992).

The overriding condition for the attainment of economic resilience in PNG is good governance. This essentially means good economic

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management, eradication of corruption and an ability to react quickly to external shocks, including disasters of a natural or man-made kind. In the case of PNG, special attention needs to be given to the rapid urban drift which is unlikely to slow down despite the efforts of some politicians to halt or even reverse it.²

For a variety of reasons, mostly of a political nature, enduring good management has not taken place in PNG during the last twenty years (see Manning et al., forthcoming) and the economy has lurched from crisis to crisis during this period.³ Factors such as harmful exchange rate policies, declining world prices, failing infrastructure, law and order problems and collapse of the extension services⁴ have contributed to these crises.

Economic Policy

There are a number of policies that PNG should be pursuing to enable it to become more efficient in order to improve its export performance and enhance competitiveness in the international market as well as in the domestic market with regard to imports. As agriculture has the greatest potential and provides a livelihood for around 87 percent of Papua New Guineans, it needs to be given top priority. The appropriate policies in this regard should be aimed at increasing the sustainable production of forestry and fishery resources and at the same time encourage the growth of tourism. In this regard, it is important to improve inter-industry linkages, so as to maximise the benefits of natural resources which Papua New Guinea possesses.

There is dire need for a strategy for promoting private sector effort and enterprise so as to enhance productivity, improve standards and

² Rural dwellers tend to produce most of their own food, rendering them less exposed to external factors, whereas urban dwellers mostly buy their food. There have been Parliamentary Committees looking into the problems of urban land owners in Port Moresby and other centres to try and prevent the takeover of traditional land by outsiders. Various provincial governments have bulldozed squatter settlements, but to no avail.

³ Some of the crises were related to the closure of the Bougainville mine in 1990, mismanagement in 1994 and 1997-99, a combination of El Niño and cyclone Justine, and severely depressed commodity prices.

⁴ The government of PNG introduced a drastic reform of the administration in 1997 that transferred responsibility for the provision of basic services, particularly infrastructure and agriculture to Local Level Governments (LLGs). The result has been an almost complete collapse of rural feeder roads and failure of agricultural extension services as well as a severe reduction in the availability of health and education services. One reason for this is that the government did not transfer the necessary trained manpower or financial resources to enable these LLGs to be able to plan and provide these services.

as a result step up competitiveness. Although competitiveness is basically a private sector issue, a congenial macroeconomic framework and effective infrastructure are essential. On the macroeconomic front, it is important for PNG to put in place appropriate exchange rate policies, aimed at promoting financial stability and curbing inflation. Towards this end, a totally independent Central Bank is essential.⁵

The promotion of human resources development is an important requisite if these policies are to meet with success, and investment in this regard is vital to ensure that development efforts are supported by persons with the necessary know-how.

Infrastructure

The most essential factor in making Papua New Guinea's agriculture sector more efficient is the restoration of infrastructure and improved means of getting produce to the markets. Because of the failure of the provincial reforms to work properly, there are no reliable estimates of the amount of road that has been allowed to fall into disrepair in PNG. The main trunk roads of Papua and the Highlands Highway continue to receive regular publicity with highways leading out of Port Moresby becoming impassable every time it rains.

Feeder roads in most provinces have been allowed to deteriorate to the extent that they are passable only by four-wheel drive vehicles or not at all. It is safe to say that about half of all the feeder roads in the country are now impassable to any vehicle carrying significant loads. This means that many people can never get produce to the market or access food if there is a problem.

Law and Order

Law and order is a major problem in PNG, and this is closely associated with the breakdown of infrastructure. It affects transport because farmers are held up on the road, where their produce is stolen. This is leading to reduced incentives to produce.

It is reflected in the closure of local trade store outlets because the operator is too small to carry insurance and a robbery often puts him/her out of business. The fear for their own and their family's safety is another factor that causes them to close down. This means that staples like rice, tinned goods, sugar and salt are not readily

⁵ Legislation ensuring the independence of the Bank of PNG has been implemented.

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available with the resultant effect on nutrition. An additional problem is that there is very little incentive to produce a surplus for cash because there is hardly anything to buy with the cash.

More importantly, the widespread destruction of cash crops and food gardens during tribal fighting in some parts of the country means that people are reluctant to produce agricultural goods and would rather move to the urban areas where they will rely on imported foods. Without law and order, one can hardly speak of good governance and ensure resilience. There may be solutions to the law and order problem but they require a serious commitment to introduce preventive short- and long-term measures.

Land

One of the greatest perceived obstacles to progress in PNG is the availability of land with secure title and tenure. An attempt by the government and the World Bank to reverse this situation in the period prior to the 1997 election was hijacked by persons who deliberately distorted the methods and motives of the programme.

To enable better farming methods and investment of time and money into traditional land, there needs to be a national land registration system as proposed by the World Bank. This would free up peri-urban and rural land for development and allow landowners to get some benefit from it. The registration drive has been deliberately misinterpreted by politicians and others. This will make it a slow and difficult policy to introduce.

The recently announced New Britain Palm Oil Development Ltd project in West New Britain has broken new ground in the use of customary land for large scale agricultural projects. This project covers about 15,000 hectares on customary land using a lease-lease back system and with a number of safeguards for future generations and income generating features for the existing generation. There is at least one other company looking at a similar project in the Ramu Valley. This has enormous potential for future agricultural development because of the possibility to establish nucleus estates in conjunction with traditional landowners.

Extension Services

Extension services need to be improved, and if they are to remain decentralised, appropriate training and resources should be given to local governments to upgrade these services, which have been in

alarming decline since independence, despite the many reforms that have taken place.

As already explained, the responsibility for extension has been removed from the national government and given to provinces and ultimately to local governments. At the same time, the delivery of extension for cash crops and fisheries has been transferred from the government to semi-corporatised bodies with varying degrees of success. This has meant the demise of the all-purpose generalist extension officer with the resultant decline of extension in mixed farming methods.

Research

Research with regard to cash and food crops, forestry and fisheries is very important for PNG. This is because the country has its own set of agronomic and farming systems, forests and fishery. What is applicable in Asia or Australia will not necessarily be applicable in PNG for reasons associated with culture as well as with physical resources (including soil structure and climatic conditions).

The most important area of research that PNG needs to concentrate on is farming systems. This concerns the way which both mono-culture and combinations of crops are cultivated. Papua New Guinea's traditional subsistence farming system has evolved over thousands of years with a population that was more or less in line with what nature could sustain. The system and the natural resources that sustain that system cannot be expected to cope with a population that has probably trebled during the last century and looks set to more than treble in the current century. PNG has to find better and more affordable methods of producing more food on existing land for consumption as well as for exports. This required better soil conservation, better fertilising and mulching, better rotation methods and better varieties.

Papua New Guinea has one of the best oil palm yields in the world due to a pollinating midge discovered at Dami in West New Britain. The potential gains from the discovery of pheromones to attack scapanes in coconut has enormous potential. This can be further boosted through appropriate research on yields and cost of production.

It is also important to emphasise the importance of post harvest research, both into downstream processing and processing and storage. Papua New Guinea can produce abundant traditional food crops and fish but it is not easy to store these products successfully for long periods of time. It is this which makes rice and other imported

staples more attractive. The many attempts to provide storage facilities for traditional products and fisheries over the years have generally failed. Research in this area is therefore called for if traditional PNG crops are to be more readily stored.

5. Conclusion

There are many vulnerable small states that have, to varying degrees, managed to withstand their economic fragility through appropriate policies backed by good governance. On the other hand, there are larger states, endowed with natural resources, with a disastrous governance record, where the majority of the population still languish in abject poverty. Economic vulnerability, therefore, needs not translate itself into bad economic performance, and natural resources endowment does not necessary lead to economic well-being.

The governance record of PNG is probably the main reason why the country has found itself in its present predicament. Its economic management is weak. Although there were no lack of policies on paper, such as the Export Driven Economic Recovery and Growth Strategy (see International Trade Centre, 2004) and the Structural Reform Programme (see APEC, 2003) these were often either not implemented or mismanaged due mostly to political problems.

There has also been a lack of clear policy directions often devised without consultation with the agencies responsible for implementation, which have impeded and constrained private sector effort to promote and expand export markets. As a result, there has not been significant improvement in the structure of PNG's economy and it remains critically vulnerable to internal and external shocks that can and will occur. If the country is to withstand its economic vulnerability it has to find answers to its governance problems, which are the cause of severe misallocation of resources.

PNG has been able to resist many setbacks, including natural disasters in the past by resorting to the international community, especially Australia. These may always be there but no country should rely on outside assistance when it can build a strategy to ensure its own resilience. Whether it likes it or not PNG will have to come to terms with globalisation and will have to step up efficiency and macroeconomic management. PNG is member of WTO and APEC, and as such it must seriously prepare itself to compete in a liberalised trading environment. As emphasised many times in this chapter, this can only be done with good governance.

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