

The Manus Economy

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Acronyms

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BSP	Bank of South Pacific
DFAT	Australian Department of Foreign Affairs and Trade
DIPB	Department of Immigration and Border Protection
GDP	Gross Domestic Product
GST	Goods and Services Tax
IRC	Internal Revenue Commission
LLG	Local Level Government
NEFC	National Economic and Fiscal Commission
NSO	National Statistics Office
ODA	Official Development Assistance
PGK	Papua New Guinea Kina
PIP	Public Investment Program
PNG	Papua New Guinea
PNGDF	Papua New Guinea Defence Force
POM	Port Moresby
RPC	Regional Processing Centre
SGP	Strongim Gavman Program
SME	Small and Medium Enterprises
T	Toea
TOR	Terms of Reference

Executive Summary

The Terms of Reference (TOR) for this Assessment sought an analysis of the economy of Manus Province, in terms of gross domestic product (GDP), employment, incomes, consumption and government revenues and expenditures. In addition, the assessment includes an examination of the impacts on the economy of the Regional Processing Centre (RPC) and related Australian investments in Manus.

Limitations in access to, and the quality of, required data circumscribed the extent to which the full objectives of the TOR could be realised.

Key findings	
Manus economy	The Manus economy is small and highly import dependent. It exhibits many of the characteristics common to other small island states, but with the notable exception that it is a subnational territory, namely: a small population (around 60,000) spread over a large number of islands; remoteness from domestic and external markets (Manus Island lies some 300 kilometres from the PNG mainland/Madang coast); high (sea and air) transportation costs; and limited internal roads and other economic infrastructure in varying condition. Prior to the opening of the RPC, economic activity in Manus was primarily underpinned by subsistence agriculture and fishing, inward remittances from Manusians working throughout Papua New Guinea and further afield, and public expenditures. The majority of formal business and employment opportunities, apart from teachers and health workers, are concentrated in the provincial capital, Lorengau, and are services oriented. There is a small amount of commercial logging occurring, but commercial agricultural activity, fisheries and tourism is minimal. The Province has no mining or manufacturing sectors.
RPC related income boost	The RPC and related Australian investments have resulted in a large, but to a significant degree, temporary income boost to the Manus economy. The income boost is at its peak with the construction of new facilities currently occurring in Lorengau and Lombrum. Other construction activities (roads and bridges, health employee housing, police station, and defence housing on Lombrum) will continue throughout 2014. Once this phase comes to an end, the RPC will continue to generate employment and procurement opportunities for as long as the RPC is operational. The total boost to Provincial income from the RPC and related Australian investments is estimated at about K25 million in 2013, increasing to a projected K48 million in 2014. The principal linkages are through employment and local procurement of goods and services.
Direct Employment	Currently, RPC related activities are directly generating 1,000 extra jobs for Manusians, injecting K14.5 million of labour income to the Province on an annualised basis. 1,000 jobs represents an increase of about 70% on the number of formal jobs in the Manus economy prior to the RPC. ¹ Taking into account other related Australian official development assistance (ODA, e.g. the school building program) and estimated local spending by non-local employees, the additional income from direct job creation is estimated at some K15 million in 2013 and prospectively K16 million in 2014.
Local Procurement	The RPC and Lorengau operations' purchase of goods and services from local suppliers is currently around K2.7 million per month, or about K32 million a year. It is estimated to have contributed some K9.8 million in income to the local economy in 2013 and prospectively K32 million in 2014. However the Manus economy is highly import dependent, meaning that most of the purchases are of goods and services that local Manus businesses have shipped in from elsewhere in PNG. Therefore only a small proportion of the income boost from local procurement and employment, perhaps 10% or less, will have resulted in higher Provincial production of goods and services (discussed further on page 12). ²
Private sector impacts	The main business entities in Manus have realised increases in sales of between 60% and 200% as a result of the RPC and related construction activity and have increased employment by

¹ The number of local jobs prior to RPC is estimated at 1,430 which includes Provincial Government employees and teachers and estimated private sector employment, but excludes some 100 PNG Defence Force personnel and an unknown number of police force personnel. Arguably, the latter two categories are less accessible to local Manusians than the former three.

² For local procurement, a significant proportion currently relates to accommodation costs for construction staff (K1.2 million a month) and purchases of locally produced food (K100,000 per month) which have lower levels of import content relative to local purchases of fuel and transport services.

Key findings	
	approximately 80 jobs (an increase of around 25 per cent compared to an estimated total 300 waged, private sector jobs in existence prior to RPC). Other incidental benefits of RPC related activities include a sharp increase in the volume and regularity of shipping and air services.
Provincial Government Budget	<p>The Provincial Government budget is the smallest of the 20 provinces that receive subnational transfers (excluding National Capital District and Bougainville); reflecting relatively lower taxation revenues. Manus does not receive mining and petroleum royalties or dividends which are received by seven of the 20 provinces. Own source revenues are also relatively low in comparison to other provinces in PNG, estimated to be approximately K2.5 million in 2014.</p> <p>Due, in part, to the lagged impacts of any increase in GST collection, the income benefits from the RPC to Manus Province are primarily accruing to the private sector, with less accruing to the Provincial Government. This differentiates the situation in Manus Province from that of Nauru. In Nauru, which is a nation state as opposed to a province, the Government there is able to collect increases in income (via taxation revenues) directly, whereas for Manus, the Provincial Government is reliant on taxation revenues that are collected by the National Government being shared with it. GST revenues are paid after a two year lag (to collect, administer revenues, appropriate expenditure – by way of grants - and transfer funds). Currently and prospectively GST revenues account for only a minor proportion of total National Government grants to Manus (estimated 0.9% in 2014).</p>
Distribution of RPC benefits	<p>The benefits to the local economy are concentrated in Los Negros and Lorengau districts in the urban centre. <i>The key recommendation of this Report, therefore, is that future Australian investments to Manus Province – funded through ODA or otherwise – continue to be directed to improving livelihood and wellbeing in more remote communities outside of Los Negros and Lorengau Districts, as is currently the case with Australia’s funding of the 20 school infrastructure kits, climate change and Strongim Pipol Strongim Nesen (SPSN) programs.</i></p>
RPC negative impacts	<p>Negative impacts reported to the Team include increased pressures on local roads, health and other infrastructure/services, some increases in local food prices (which on the other hand benefits local growers/harvesters), and increases in alcohol consumption and prostitution (though increased employment opportunities had reduced the incidence of youth drunkenness). Overall, however, the negative impacts appear muted, and some (e.g. road infrastructure) will be addressed through forthcoming Australian aid. No appreciable negative impacts were discerned concerning possible labour market distortions. Overwhelmingly, newly created local jobs have been filled by people unemployed or underemployed within the subsistence sector.</p>
Development opportunities	<p>Without concerted effort and investment from the National Government, in particular, in requisite transport, including inter provincial shipping services, the prospects for economic development in Manus if or when the RPC closes appear limited. Manus faces the same challenges of other small island states, with the added complexity of being a subnational entity. These include distance, high transport costs, remoteness, limited income earning opportunities (including through formal, waged employment) and limited options for raising revenue. Once sustainable, a reopening of the once important beche de mer fishery would enable an improvement in economic opportunities and activity, and could be a catalyst to further marine resource development. The establishment of a tuna processing factory has long been discussed for the Province but Manus would need to compete with other locations in PNG. The provision of further extension services to agriculture might also be a priority. These and other prospects should be explored as part of a forthcoming Australian sponsored assessment into SME business development prospects in Manus. For their part, the contractors operating the RPC and overseeing the construction activity are doing what they can to promote longer term development outcomes. In addition to promoting increased local produce supply, construction contractors, in particular, advised that they were providing local employees with formal certificates verifying the skills they were attaining (e.g. in the operation of machinery) with a view to their becoming more employable generally within the PNG economy. This could assist in maintaining future remittance flows to the Province.</p>

The Manus Economy

Background

1. The Terms of Reference (TOR) for this Assessment sought an analysis of the economy of Manus Province, in terms of gross domestic product (GDP), employment, incomes, consumption and government revenues and expenditures; for Australian and Papua New Guinea (PNG) Governments and other stakeholders. In addition, the assessment includes an examination of the impacts on the economy of the Regional Processing Centre (RPC) and related Australian investments in Manus. The TOR specified, in particular, three objectives:
 - › To gather data on the economy of Manus Province;
 - › To examine the impact on the Manus economy of Australian investments supporting the (re) establishment of the RPC there, with a particular focus on: Gross Domestic Product, employment, labour income and consumption, government expenditure and revenues; and
 - › To inform the Governments of Australia and PNG of any key issues and provide recommendations and strategies to assist with planning future investments in Manus.
2. The task involved deriving an estimate of the Gross Domestic Product of, and describing the Manus economy, the contributions to GDP attributable to the Australian investments supporting the RPC, the distribution of the total economic benefits of these investments within Manus and between Manus and the broader PNG economy, and identifying key socio-economic impacts, both positive and negative, within Manus Province.
3. The framework initially envisaged for the analysis was basically to adopt the standard national income identity:
$$\text{GDP} = \text{Consumption} + \text{Investment} + \text{Government Expenditure} + \text{Net Exports}$$
4. However it was clear from the outset that official statistical data would not be available to allow direct measurement of most components of this identity, which computes GDP as the sum of domestic expenditures in a year.³ As noted earlier, although Manus can be described as a small island economy, it is a subnational territory rather than a nation state. As such, key data sets for Manus Province (for example, import, export and comprehensive taxation data) are not separately collected, or are not separately identifiable, from national statistical data. Additional constraining factors were the lack of Provincial level data (in both the public and private sectors), an absence of the sorts of research institutions in which information could reasonably be expected to be found, and a reluctance among commercial entities operating in Manus to share data they regard as commercial-in-confidence. The latter included, for example, more comprehensive information on employment and on financial remittances to Manus and trends in local saving. A key information gap for this Study was also the lack of any subnational household survey data, particularly in regard to incomes and expenditures, for Manus.⁴
5. Against that background, the approach taken for the Study was to adopt proxies or infer values where necessary from the information able to be obtained; including in the course of extensive consultations with relevant national agencies in Port Moresby during the week commencing 15 June 2014, and during seven days of discussions with stakeholders in Manus commencing 24 June 2014. As a result, this study is more reliant on qualitative and anecdotal information when compared to other similar studies such as that conducted for Nauru. That said, the study does provide a basis for expanding and updating the analysis to meet the full objectives of the TOR if, or when, sufficient relevant data does become available.
6. Further details of the methodology used for the study are provided at Attachment A. A list of persons and organisations consulted is at Attachment B.

³ Attempting to estimate Manus GDP using either of the alternate “income” or “production” measurement frameworks was considered to be far less feasible given available data.

⁴ The 2009-2010 PNG Household and Expenditure survey (with funding and technical assistance from World Bank and Australia) does not separately identify data for provinces. Provinces were grouped into regional categories. Manus is grouped with the other “Islands Provinces” and only 23 Manus households were covered in the Survey.

The Manus Economy

7. Manus Province is the smallest of PNG's 22 provinces with a land area of 2,100 square kilometres and a total population of some 60,500, which comprises less than one per cent of the overall population in PNG (2011 Census). The Province is made up of the Admiralty Islands (a group of 18 islands in the Bismark Archipelago) and Wuvulu Island and nearby atolls in the West, all situated within an ocean area of some 220,000 square kilometres. The largest island in the group is Manus Island, located some 272 kilometres north east of the Madang Coast. Manus Island is about 96 kilometres long and about 24 kilometres wide, on which the capital, Lorengau, is situated. Average rainfall is 3500mm on most islands in the province⁵. The RPC is located within the Lombrum naval base on the small adjacent island of Los Negros, connected by bridge to Manus Island.
8. Lorengau and Lombrum constitute the urban area of Manus Province. The rest of the population live in villages scattered throughout the inhabitable islands which rarely exceed 400 residents. The household is the basic economic unit, and the highest incomes are earned by those in the urban areas.⁶ Most residents of Manus Province reside near the sea.
9. The natural endowments of the Province are confined to its arable land, some remaining forest, and its marine resources. There are no commercial operations operating within the extractives sector in Manus Province. In terms of arable land, the extensive agricultural survey mapping undertaken as part of the 2001 Rural Handbook suggests that 'land potential' for agricultural activity is high to very high on Los Negros, Lou, Baluan and Horno island; with rainfall, soils, slope, light and temperature "ideal for the production of many crops". It is noted however, that the smaller islands are prone to fertility decline. Land potential on Manus Island is considered to be of moderate potential, however the north and western areas of Manus Island are considered to be of 'very low land potential'. This accords with discussions with the Provincial Department of Agriculture personnel who advised that the land of Manus Island is relatively infertile and unsuited especially to the cultivation of cocoa. In some areas of the Province there is evidence of declining crop yields, and the team notes that there have been reports of climatic events that have been reported to result in food shortages in Manus in recent years.
10. Apart from what appears to have been a very minor and brief economic stimulus from the Howard Government era detention centre that operated on Manus in the early 2000s (2001-2003), the population of Manus Province prior to the establishment of the RPC was largely reliant on subsistence agriculture and fishing, grants from the National Government to support service delivery, principally in health, education and infrastructure, and inflows of financial remittances from Manusians working elsewhere in PNG. The Lombrum Naval Base, established during World War 2, has 120 posted PNG Defence Force (PNGDF) staff.
11. Commercial agricultural activity is relatively minor in Manus, compared to other provinces of PNG. Production of copra was once an important commercial activity, but has now collapsed. Cocoa cultivation, to the extent it is occurring (see below), is principally concentrated in neighboring Lou Island. Pak Island was said to be the centre of past commercial coconut plantations. Some cocoa and rubber is commercially grown, with marketing support from the Provincial Government, but its value is minimal – in the order of K250,000 to K300,000 per year spread among some 300 growers.⁷ Exports of logs contribute about K100,000 per year in royalties to the Provincial Government (and about K3 million in export taxes to the National Government).
12. A significant beche de mer (sea cucumber) fishery existed up to 2009 but was closed because of overfishing. There are continual rumours that beche de mer fisheries could soon reopen given an apparent rebound in stocks. Data on the value of this fishery indicate it was worth some K2.8 million to the Manus economy in 2009, reflecting sales of about 31 tonnes. Since then, it seems prices for beche de mer have risen sharply on the back of Asian demand and declining worldwide stocks such that, if or when the fishery were to reopen, and assuming a similar level of harvest (allowable catch), the fishery could be worth at least double that to the Manus economy.⁸

⁵ 2001 Hanson, Allen, Bourke, McCarthy, Rural Development Handbook of PNG. Handbook funded by Australia, and remains one of the best resources on agricultural mapping in PNG.

⁶ According to the survey upon which the 2001 Rural Handbook (referenced in footnote 5 above) is based.

⁷ The local cocoa industry, to the extent it existed was similarly impacted by those of other Provinces by cocoa pod borer. As is happening elsewhere, it was said that new borer resistant strains are now being planted in the Province, but again on a relatively small scale.

⁸ Under a 2003 National Beche de mer Management Plan, a "total Allowable Catch" was set for Manus of 18 tonnes for "High Value Species" and 32 tonnes for "Low Value Species." Prices at the time were around K100 per kg for high value and around K15 kg for low value species.

13. Subsistence agriculture has traditionally focused on harvesting of sago and cultivation of sweet potato, taro, green vegetables, bananas and coconut. According to the 2001 Rural Handbook, Manus Province subsistence farmers use a variety of high and low intensity cultivation, with mixed staple gardens. Traditional planting cycles consisted of 3-5 plantings before a fallow period of 1-4 years.
14. Manus does not have a mining sector, although there is currently some exploration activity occurring in search of gold, and essentially has no manufacturing sector.⁹
15. Other than subsistence agriculture, the other main important source of income for Manus Province is the significant flow of financial remittances from Manusians working elsewhere in PNG, and abroad. Remittances are conservatively estimated to be of the order of K3 million per year¹⁰, and is reflective of the relatively high priority that has been accorded to education within Manus society: it was reported to the team that under the original Organic Law establishing the Provinces and under the more recently adopted formula for determining National Government functional grants to the Provinces, together with the fixed Services Improvement Grants, Manus has fared relatively better than most other Provinces in terms of per capita education and other funding.¹¹ This is also consistent with the survey results contained in the 2001 Rural Handbook. As a result, many well educated Manusians have come to occupy senior positions within the public and private sectors throughout PNG. It was reported to the team that many of the Manusians remitting have returned to the Province, or are approaching retirement age, and it was noted by Provincial Authorities that “Milne Bay and other places are catching up with Manus for education”. As such, future remittance streams seem uncertain.

Manus Economy – Key Statistics

Population	60,485 (2011 Census)
Public Expenditure	K79.8 million (est 2014)
Employment	
- Local Public Sector (including teachers)	1,130
- Private sector (estimated)	300
Financial service providers	BSP, Manus Savings & Loans Society, Post PNG
Registered companies (Lorengau District)	
- Chemist	1
- Car Hire Firms	15
- Large supermarkets/ mixed trading stores	5
- Hotels	2
- Fuel suppliers (excluding “mini suppliers”)	5

⁹ A register of local businesses maintained by the Lorengau Town Manager indicated the existence of a local soap factory, which from budget documentation, appears to be owned or part owned by the Provincial Government, and it is possible there could be small scale timber processing, although the study team saw no evidence of this occurring in or around Lorengau, nor from the local business register.

¹⁰ Estimated from partial, confidential, data provided to the Assessment Team. There is also likely to be a significant value of actual goods remitted or transported into Manus by Manusians working outside of the Province (i.e. to relatives).

¹¹ It was reported to the study team, for example, that, for 2014, Services Improvement Grants (Provincial, District and Local Level Government) to Manus equated to K347 per person (2011 Census). In comparison Morobe Province gets K225 per person and Eastern Highlands K228 per person. Gulf, with the second smallest provincial population, gets K221 per person. The ongoing imbalance in education funding is more stark. Recurrent funding in 2014 for teacher salaries in Manus equates to K232 per person, compared to K88 for Morobe and K73 for Eastern Highlands. In Gulf it is K65 per person. The substantial difference between Manus and the other Provinces in the latter regard, reflects the significantly higher number of teachers employed per head of population in Manus relative to the other Provinces.

Manus Provincial Government

16. The Manus Provincial Government, excluding current RPC related activities, is by far the dominant economic force in the Manus economy, not only by virtue of its budgetary expenditures, but also through its ownership of commercial enterprises, including part ownership of the Harbourside Hotel, one of the two dominant hotels in Lorengau which also operates a small but expanding hire car business, and the recently established fish processing cooperative. It also appears to operate a soap factory in Lorengau. Although unusual by conventional Western economic standards, the proliferation of provincial government interests across many sectors in subnational economies is not unusual in PNG. For example, in Gulf Province, the Provincial Administration has interests in finance and extractives sectors.
17. Manus Provincial Government actual and estimates of budget expenditures for the years 2012 to 2014 are summarised in Table 1 below.

Table 1: Estimated Expenditures, Manus Provincial Government (PNG Kina (PGK))

	2012 (Actual)	2013 (Revised estimate)	2014 (Projected)
Total Expenditure	35,190,759	63,123,772	79,845,500
Funded by:			
➤ National Government grants	34,069,300	61,098,100	65,208,700
– Recurrent	31,295,400	40,604,900	43,531,800
○ Administration and service delivery	1,890,300	3,049,000	4,048,400
○ Staffing	20,623,100	27,814,200	27,814,200
○ Functional	8,782,000	9,740,700	11,669,200
– Development (PIP)*	2,248,000	17,500,000	15,000,000
– Local Level Government (LLG) Grants	525,900	2,993,200	6,676,900
➤ Internal Revenue	1,121,459	2,025,672	2,515,600
– Unspent monies previous years			12,121,200

* Includes Provincial and District Services Improvement Grants

Source: For 2013 - estimated from National Department of Finance warrant releases and Provincial Government Budget documents. For 2014 – “Manus Provincial Government 2014 Revenue and Expenditure Budget.”

18. For 2013, National Department of Finance data indicate that warrants totalling K64,557,146 were released to the Provincial Government. Of this, however, some K6.6 million (K3 million District Services Improvement Program and K3.6 million of LLG grants) was not released until October/November 2013. These funds, together with a carry over of about K5 million from 2012, appear to largely account for the carry over of unspent funds into 2014. For 2012, around K2.75 million of a total K5.0 million of Public Investment Program (PIP) grants were unspent with the monies carried forward to 2014. The extent of underspending is not unusual for PNG, with underspending against capital budgets at national and subnational levels of government.
19. For 2014, District and LLG Services Improvement Grants (K6 million and K10 million, respectively) are budgeted to be allocated: 30% to Infrastructure, 20% to Health, 20% to Education, 10% to Agriculture, 10% to Law and Order, and 10% to Administration. The (K5 million) Provincial Services Improvement Grant is proposed to spent in a diverse array of areas, including: “spiritual” and sports development (K1.5 million), “town beautification” (K250,000), police support (K250,000), tourism (K200,000), sea transport (K200,000), other township and road expenditure (K1.8 million). Additional details of this proposed, or previous years, expenditures, however, were not obtained for the purposes of this Study.
20. Notwithstanding the economic stimulus from the RPC, estimated Provincial Government internal revenues remain modest.

Total Provincial Income, Excluding RPC

21. Excluding the RPC related contribution, total Manus provincial income is estimated at K62 million in 2013. The derivation of this figure is as follows; but note that it does not capture the scale of the informal sector.¹²
22. Implicit from the above sections is that the total income of Manus Province, excluding the RPC, equals the sum of National Government grants expended, less income and business taxes paid back to the National Government, net remittances and returns to agriculture for the year. The lack of data on all these components prevents an estimate of total income at this time, but for the present we can say that for 2013, National Government grants expended amounted to an estimated K61.1 million, less estimated taxes on wage and salaries of K2.1 million,¹³ plus returns to agriculture of K0.3 million plus estimated remittances of K3 million gives a total income of K62.33 million.
23. Important to note here is that since all goods, apart from locally produced foodstuffs, are imported into the Province and there are no exports apart from the minor amount of agricultural products noted above and a very small amount of income from visitors to the Province, in the absence of the RPC, business incomes and Provincial Government internal revenues essentially represent redistributions of Provincial income.

Impact of RPC and Related Australian Investments

24. The RPC was opened in late 2012, with first Australian personnel arriving on site on 6 October 2012 and first transferees arriving on 21 November 2012. The activities related to the RPC which impact on the Manus economy through employment, local procurement and other expenditures are:
 - › Operation of the Regional Processing Centre at Lombrum, November 2012 to present;
 - › Construction of new facilities at Lorengau and Lombrum from January 2014 to present (with design phase activities from November 2013);
 - › Other past or current activities in Manus funded through Australia's aid program in support of the RPC include the provision of an additional 10 school classroom packages,¹⁴ the supply of dental and other equipment to Lorengau Hospital, hospital staff housing, road and bridge projects, upgrading of the Lorengau central food market, community grants, rebuilding of the Lorengau police station and private sector skills workshops. Construction of 42 houses for PNG Defence Force personnel in Lombrum and upgrades to the Lombrum Naval base (repair and grading of roads, repair of water supply, upgrade to sewerage systems, new warehousing, erection of fencing) is also being funded by the Australian government separate to the aid program, with the work being undertaken in conjunction with the RPC related construction. The Lombrum Naval Primary School will receive new ablution blocks and water tanks funded by the Australian Government.
25. While there was some hiring of local staff from around the time the RPC was reopened, RPC-related economic activity and associated Australian aid investments mainly commenced and grew during 2013, and peaked with the commencement of major RPC related construction work from around end 2013.
26. As noted earlier, while the TOR called for a comprehensive, accurate quantification of expenditures relating to all these various activities, this unfortunately has not been possible due to data limitations. The key data that was made available to the Team concerning RPC operations and related construction activity, some of which is imputed from more aggregated data (see notes to Table), are summarised as follows in Table 2.

¹² Analysis of the contribution of the subsistence/informal sectors to national GDP was conducted by the National Statistics Office (NSO) in 2006 and continues to be the basis for GDP estimation by the Bank of PNG. However, including from discussions with the Bank and the NSO, it was deemed not possible to adapt or convert that analysis (e.g. to a per capita basis) such that it could be applied to Manus Province.

¹³ Based on average salaries of K19,000 per annum (K730 per fortnight) taxed at rate applying to two dependants (K58.20 per fortnight) which gives an average tax rate of about 8%. Source IRC "Income Tax (Salaries and Wages Tax) Rates, 2012 Budget Amendment and Manus Provincial Government 2014 Operational Expenses Estimates and Development Estimates Submission (which includes individual salary payments et al).

¹⁴ Each package involves construction/assembly of a dual classroom building, teacher house, toilet block and water tank valued at K750,000 per pack, up to K30,000 for the hire of local construction labour and other things such as gravel and transportation.

Table 2: RPC Operations and Construction estimates (PGK)

	RPC Operations ¹⁵	Construction
Employment (June 2014)		
– Local	750	240
– Other PNG	30	83
Wages and salaries (Local)		
– Annual	K11 million	N/A
Total Local Procurement (Monthly)	K820,000	K1,871,400
Total Annual Procurement	K9,840,000	K22,456,800

Notes to Table: The data regarding construction activity was provided in aggregate for period 09/2013 to 06/2014 (i.e. 10 months) and in Australian dollars. (Australian dollars converted to Kina @ K1 = \$A 0.4.) Regarding Plant Hire, data indicated expenditure of \$6,008,878 for a 10 month period, but it's unclear as to how much is local procurement. It is assumed here that 20% is local, given local landowner participation in at least one of the major supplier entities.

27. Table 3 summarises the estimated contributions of the RPC and related Australian investments to Manus Provincial income for the years 2013 and 2014. The derivations of these estimates are explained further below.

Table 3: Contribution of Australian Investments to Provincial Income in 2013 and 2014 (PGK million)

	2013	2014
RPC and related construction		
– Employment	11.8	15.5
– Procurement	9.8	32.0
Other Australian Aid		
– Employment	3.3	0.5
Total (rounded)	25.0	48.0

Employment Impacts

28. Evident from the above is that the RPC and associated construction activity is currently generating around 1,000 jobs for Manusians and around 110 for other Papua New Guineans. We estimate an annual wage bill of K11 million for some 750 local staff with an average local wage of about K280 per week, which also corresponds broadly with average salary data captured in a staff expenditure survey conducted for this study (see below). Applying this average wage to all 1,000 local jobs implies an annual injection of some K14.5 million to the Manus economy annually from local labour income derived from RPC operations and current construction activity.

29. Important to note here is that these local jobs created have been overwhelmingly filled by people who were otherwise unemployed or at least not previously in the formal labour force. Where higher end skills are required (e.g. in plant operation), it seems the jobs have been largely filled by workers who were previously engaged in the construction of the PNG LNG project (see below). There is, therefore, little evidence of RPC activities having negative labour force impacts in Manus; by for example, drawing people out of existing public service or private sector jobs.

¹⁵ Excludes medical services staff.

30. To put the 1,000 extra jobs in some further perspective, prior to the RPC it is estimated that there were around 1,430 formal sector jobs in Manus Province; 1,130 public sector (including around 800 teachers currently employed) and some 300 private sector.¹⁶ In essence, the RPC and current construction work is estimated to have led to a 70% increase in formal employment among local residents in the Province. Most of the job creation from construction activity has occurred since the beginning of 2014.
31. In terms of expenditures in Manus by non-local PNG employees (i.e. non-Manus PNG nationals), the Assessment Team arranged for a survey to be conducted among employees of two companies contracting to RPC related operations and construction. While the sample was small (15 respondents) the results suggest that these workers save or remit to family/wantoks on average around 65% of their wages, with the remainder being spent variously on food, cigarettes, buai, alcohol, phone credit and personal toiletry items in Manus. The average weekly salary of those covered in the survey was K290 per week. This suggests that the 110 or so PNG workers currently employed from outside the Province in total contribute some K48,000 per month to the local Manus economy.
32. In addition to the RPC direct inputs, Australia is supporting health, education and private sector initiatives in Manus. Building 10 additional school infrastructure kits under the Education program contributed a further estimated K3.3 million, via employment of local construction labour, to the local economy in 2013. Health sector initiatives contributed approximately K10,000, again in local labour hire during that year. The contribution from the Lorengau Market has been minor to date, about K100,000 (for some 72 casual staff), as the project is in its initial phase. The bulk of the total estimated K7.3 million spend on the Market is expected to occur in the second half of 2014, involving on average around 50 local employees, suggesting a labour income contribution of about K500,000 for 2014.¹⁷
33. Together with an estimated annual RPC operations bill of approximately K11 million for wages, and assuming the principal contribution from construction commenced from the beginning of January 2014, this would suggest a total labour income injection from RPC and Australian ODA funded activities in Manus of about K15 million in 2013. For 2014, extrapolating from the above would suggest a figure of about K16 million.

Procurement

34. The above estimates suggest that total local procurement by the RPC and in connection with current construction is currently of the order of K2.7 million per month, or some K32.4 million per year. If we again assume that local procurement in respect of construction activity commenced effectively from beginning January 2014, then simple extrapolation of the current monthly procurement of the RPC would suggest an annual contribution to Manus income of some K9.8 million in 2013, increasing significantly to around K32.4 million in 2014. As noted earlier however, a significant proportion of this procurement effectively relates to goods imported by the local providers and hence, does not contribute to Provincial production.

Indirect Impacts – Manus Business Community

35. According to information provided by the Town Manager, there are currently more than 112 local business entities registered in the Lorengau Urban area, which basically encompasses the commercial hub of Manus Province. The majority, however, are small entities operating trade stores, kai bars, street stalls, guest houses, and the like or are minor players engaged in providing services such as money lending and property rental. Many of the individual entities registered, moreover, are linked to or form part of a handful of major businesses, most prominent among these being Juromo Enterprises, Pokapin Ltd, Papindo Ltd, Splendid Star Ltd, Chauka Car Rentals, RL & VJ Knight Ltd and Manus Transport & Kutubu Transport Joint Venture. As well, there are two main hotels, Harbourside and Seadler Bay. Air Niugini, Bank of South Pacific (BSP), City Pharmacy and Post PNG maintain branch operations in Lorengau.
36. The Assessment Team was able to consult with most of the major business players (and others) during the field visit to Manus, with the notable exceptions of Splendid Star, Seadler Bay Hotel and the local stevedoring principles; who were unavailable at the time of the Study. A list of businesses consulted is at Attachment B.

¹⁶ Data and advice from the Provincial Government; including from Manus Provincial Government Budget Submission "2014 Operational Expenses Estimates and Development Estimates Submission." The employment estimate excludes around 100 defence force personnel stationed at Lombrum and an unknown number of police force personnel.

¹⁷ Several local contractors will also be involved in the construction but the likely value of their work is not known.

37. There is considerable satisfaction with, and support for, the RPC in the business community. There is a large disparity demonstrated between business owners and managers however in how long the economic stimulus of the RPC and development assistance will last. Some business owners have reported that they are monitoring shipping services – “once the ships stop that means the peak is over” – as an indicator of ongoing activity. Others expect the RPC-related economic stimulus to be ongoing.
38. Among the private businesses surveyed, employment has increased by around 70 – 80 post-RPC, which at an average wage of K280 per week would inject another K1.1 million per year into the broader economy, and sales have increased between 60 and 200 per cent across surveyed businesses. A further 100 or so Manus residents have also been employed as security guards the incomes of whom are included in the above local procurement data for the construction activities on Manus.
39. Car hire companies now number around 15 compared to only three players four years ago, and the two hotels have both witnessed sharp increases in their occupation rates and bar and restaurant sales.¹⁸ There has also been a significant increase in fuel suppliers over the past 1 to 2 years, from one supplier to five (and a number of smaller, informal suppliers). The price of fuel, nevertheless, remains high in Manus.
40. It was not possible to gain any meaningful overview or estimates of private sector investment on the back of the RPC induced income surge. Anecdotally, however, it would appear that most new business investment over the past 18 months to 2 years has been in motor vehicles, particularly hire cars, trucks and some earthmoving and construction equipment geared to the demands of the RPC and construction activities. New orders from cars are sourced from Port Moresby and Lae. It was reported to the Team that orders for new cars have increased substantially over the last six months, albeit from a very low base. Materials/hardware store suppliers also indicated that there is currently a significant amount of private house construction and or renovation occurring, not only as a result of RPC-related job creation but also due to a significant number of Manusians recently completed employment with Ok Tedi returning to the Province with discretionary income to spend¹⁹. However, quantifying the value of this investment was not feasible.

Shipping Services

41. A further indirect benefit of the RPC to the local Manus economy has been in engendering a greater volume and frequency of shipping services. Commercial ship arrivals into Lorengau for the years 2012 and 2013, and the first 6 months of 2014 are summarized below.

Table 4: Commercial Ship Arrivals, Lorengau

	2012	2013	2014 Year to end June
Total*	30	55	86
– General Coastal	17	31	37
– Coastal Tankers	3	12	9
– Barges	3	12	33
– Overseas Tankers**	7	Nil	Nil
– Contracted Ships	Nil	1	7

*Excludes log ships and passenger vessels

** Overseas tankers ceased calling after August 2012, presumably reflecting a decision by Interoil to close its Manus fuel depot at that time

Source: PNG Ports Corporation

¹⁸ The Harbourside Hotel (52% owned by the Provincial Government) has also benefited from the construction, funded by the Australian Government, of 74 additional rooms to cater for RPC related construction personnel, the ownership of which will revert to the hotel once RPC construction work is complete. The Seadler Bay Hotel is benefiting from, increased occupancy rates among other things, accommodating the police mobile squad and Air Niugini flight staff.

¹⁹ Note that a number of these returnees are employed in RPC-related jobs.

42. While there is a major concern among the business community regarding high freight costs – it was noted, for example that freighting a 200 litre drum of petrol from Lae costs some K62.30 (i.e. K3.10 a litre) – the sharp increase in the volume and frequency of shipping into Lorengau evident from Table 4 has benefitted local businesses in the management and minimisation of inventories. The increased shipping services induced by the RPC was also opportune in that it filled what otherwise would have been a void caused by the bankruptcy of the Lutheran shipping line, the only provider of commercial cargo services to Manus previously. The increased shipping activity has also substantially benefitted the local stevedoring business.

Impact on Broader PNG

43. Apart from the employment data cited above in regard to non-Manusian Papua New Guineans, the Team was given no data on procurement from PNG sources outside of Manus. It was therefore not possible to analyse the economic benefits of the RPC for the broader PNG economy. Nevertheless, it is clear that the opening of the RPC has benefitted Air Niugini and goods and material suppliers out of Lae. Air Niugini advised that prior to the RPC, it operated 4 commercial (passenger and freight) flights to Manus per week. Following the opening of the RPC it now operates 8 commercial passenger flights per week plus two scheduled freight services (about 8 tonnes of freight) per week and two overnight charter services catering to shift changes at RPC.²⁰ The result has been a more than 53% increase in revenues from its Manus services in 2013 relative to 2012, which has largely offset declines in other parts of its domestic network following completion of the construction phase of the PNG LNG Project. In addition, new carriers have for the first time, begun operating two flights a week to Manus. A further small commercial air charter operates one or two freight services per month specifically supplying the RPC.
44. Among other things, most RPC and construction fuel and drinking water requirements are sourced directly out of Lae. The school building packs funded under the Education aid program, amounting in total to K8.6 million for the full 20 schools constructed, were also sourced from a Lae-based company following an international tender process.

Taxation

GST Revenues

45. Under PNG's taxation sharing arrangements, 60% of GST revenues collected by each Province are paid back to each Province after a lag of 2 years. Indicative of the upsurge in economic activity in Manus post RPC is that the IRC currently estimates that the Provincial Government will receive some K1,100,000 of GST funding in 2015 (which as noted, reflects 60% of actual collections in 2013), compared with estimated payments of K586,200 in 2014 and K598,320 in 2013 and only 173,162 in 2012; as indicated in the Provincial Government's budget documents.²¹
46. In essence, it appears total actual GST collections from Manus Province nearly doubled between 2012 and 2013, from K977,000 to K1,833,000. Data obtained on GST collections on imports (see further below) show collections amounted to some K3.8 million in the first 5 months of 2014, indicating that the Provincial Government will receive a further boost to its revenues from this source in 2016, largely as a result of RPC related activity.²² However, GST revenues currently and prospectively account for only a small proportion of total budget revenues of the Manus Provincial Government (estimated at 0.9% for 2014).

Wage and Salary and Business Tax

47. Some data in this regard was provided by the IRC's Manus Branch Office. However, the data only related to payments by Manus domiciled/registered companies, and did not include taxes paid by the RPC contractors and other nationally registered companies. The data provided, moreover, did not correlate with underlying economic activity in Manus as evidenced by the income and sales data referred to above; and likely reflects Manus businesses' management, including tax arrangements.

²⁰ Standard working patterns for non-local staff are 2 weeks on and 2 weeks off for RPC Staff; 2 weeks on and 1 week off for construction management staff and 3 weeks on and 1 week off for construction sub-contractors.

²¹ The IRC advised that in identifying GST revenues collected from the Province they are reliant on reporting of provincial sales by nationally operating companies which may not always be accurate. Much of the large jump in actual GST collections between 2010 and 2011 indicated from these data could well be explained by more accurate reporting by these companies. Certainly, it does not reflect changes in underlying economic activity at that time.

²² During the field visit, concerns were raised by the Provincial Government that the Province was not receiving a fair share of GST revenues raised on local sales due to the fact that much of those sales are made by branches of nationally registered companies (e.g. Air Niugini). The issue however is one for resolution between the Provincial and National Governments, and beyond the scope of this study.

Customs Duties

48. Total import levies (duties, GST and excise) collected on goods directly imported into Manus for the years 2012 and 2013 and the first 5 months of 2014 are summarized below.

Table 5: Import Levies, Manus Province (PGK)

	2012	2013	2014 Year to end May
Total	152,620	903,736	20,061,608
Import Duty	46,878	573,766	12,553,474
Import GST	95,707	21,616	3,821,251
Import Excise	10,035	308,354	3,686,883

Source: Manus Customs Office

49. The trend in collections evident in the above Table mirrors very closely the pattern of construction activity associated with the RPC; in particular, the construction of more permanent RPC staff accommodation in Lombrum and the new facility in Lorengau, both of which essentially commenced in January 2014. For 2013, some K897,000 of total collections were recorded in November which also broadly coincides with the construction of the additional accommodation at the Harbourside Hotel. Implicit also from the data is that most direct imports of goods associated with the ongoing operations of the RPC (e.g. food) is duty exempt under the agreement between the PNG and Australian Governments.

Imports into Manus Province

50. It was not possible to directly measure imports into Manus Province within the timeframe and scope of this study. Even in regard to a key item such as fuel, the recent increase in the number of retailers in Manus and the diversity of suppliers out of Lae limited any meaningful quantification of sales or imports into the Province. However it is clear from observation, discussion and previous general assessments of Manus, that essentially all goods consumed in Manus, apart from locally grown or harvested foodstuffs are imported into the Province.
51. Allowing for a limited number of local service providers, this suggests that the Marginal Propensity to Import is very high, at least in the order of 0.9 (meaning that for every extra K1 of disposable income, some 90t would be expended on imported items). The implication is that while the very substantial increase in Provincial incomes flowing from the RPC and related Australian investments will have substantially improved the living standards of many Manusians its impact in increasing Provincial Gross Domestic Product will be muted. The lack of data, most notably in regard to tax collections and savings, nevertheless, precludes any meaningful estimate of Provincial GDP at this stage.

Distributional and Socio Economic Impacts

52. It would appear that most of the economic benefits flowing to the Manus Provincial economy from the RPC and related construction activity are accruing to the Lorengau and Los Negros Districts. This reflects the fact that Lorengau is the commercial hub of Manus Province and also the fact that the sourcing of local labour and local foodstuffs is largely arranged through local landowner groups.
53. In regard to labour, the tendency of firms has been to recruit first and foremost from within the local landowner community as appropriate, and to go outside the local community to fill shortfalls to requirements – in terms of numbers, or skills required. The situation seems similar in respect to the local sourcing of food.

54. The purchase of local fish is organised through a cooperative sponsored by the Provincial Government and based in East Lorengau. While it seems that a large number of local fisherman supply the facility, including from islands adjacent to Manus, the very high cost of fuel (between K6.50 and K7.50 per litre for “Zoom,” i.e. two stroke petrol/oil mix) and the requirement to deliver catches fresh naturally limits the geographical spread of potential suppliers. Fishermen are paid between K6.50 per kg (pelagic species) and K7.0 kg (reef species) for their catch delivered to the facility. After processing (filleting and freezing) the fish is then on-sold to the RPC for K18 kg. Under the supply arrangements, 50% of the fish is supplied directly by the cooperative, with the profits accruing to the Provincial Government, while the other 50% is supplied by a private business entity, Denjau Seafood. This entity buys fish from the cooperative at K9.00 per kg and meets its own processing cost. Filleting of fish is all contracted to Los Negros landowners. While the RPC demand is for up to 800 kg of fish per week, the cooperative’s current capacity is to deliver on average only around 400 kg, the key constraint being freezing capacity. Evident from the foregoing is that much of the value in the fish supply chain is accrued to Lorengau and Los Negros interests.
55. In terms of local fruit and vegetable supply, three local landowner businesses currently supply 500 kg of product each, three times a week. Operators of the RPC are conscious of the need to balance the RPC’s requirements with the capacity of local supply and are in the process of encouraging increased local production to more fully meet its demand and to encourage the establishment of cooperatives to broaden the scope for local participation in the supply chain. The potential here is for a greater geographical spread of supply within Manus Province.
56. As things stand, the current, albeit quite rational, fruit and vegetable purchasing arrangements, further lead to the concentration of much of the economic benefits to the local Los Negros and Lorengau landowners. In discussions with a group of residents from neighbouring Lou Island marketing their fruit and vegetables in Lorengau, for example, it was claimed that while the RPC was purchasing produce at K6.50 per kg, they were only being offered K2.0 per kg by the buyers contracted to the RPC.
57. The key recommendation of this Report, therefore, is that future Australian investment and aid to Manus Province should focus on improving livelihoods and wellbeing in more remote Districts and regions outside of Los Negros and Lorengau; which effectively is what has been, or is, the case with Australia’s funding of the 20 school infrastructure kits, climate change and Strongim Pipol Strongim Nesin programs, for example.

Negative Impacts

58. Any economy that experiences a large, sudden income boost will inevitably experience some negative impacts, as infrastructure and capacity (technical and human) can be constrained in the short term. In Manus for example, the large income boost as a result of the RPC operations and construction means that additional stress is being placed on a road network that is perhaps not equipped to deal with regular, heavy vehicle traffic flow. Because of the capital investment and the lead times for undertaking road improvements (funded by the Australian Government), the short term impact will be negative. However over the medium and long term, such boosts to income can highlight particular areas of need, and funding and resources can be allocated towards resolving issues that have arisen. Key among the negative impacts reported to the Assessment Team, including by provincial government officials, are:
- › Stresses being imposed on local road infrastructure and health services;
 - › Increased prices of local food products, and to some extent, imported store goods;
 - › Increased alcohol consumption and utilisation of informal sex services.
59. In terms of stresses on local road infrastructure, this is most evident in respect of the road linking Lombrum to Lorengau, and within Lorengau itself. The roads have experienced increased volumes of traffic, including of heavy vehicles, generated by the RPC and related construction. Rehabilitation of the main road link (Lorengau-Momote road) as well as roads and drains around the central Lorengau food market and rehabilitation of the Loniu and Nuwok bridges will be funded through Australian development assistance.

60. In terms of local food prices, notwithstanding efforts by RPC related operations to limit their demands to the capacity of local supply, there clearly has been marked increases in prices of some key food items, most notably; bananas (what used to cost 15t prior to RPC now costs K1), sweet potato (30t previously, now K1), and ibica/green vegetable (30t previously, now K1). On the other hand, prices of other staples, for example sago, taro and fish appear to have remained steady. There were also suggestions that prices charged in local stores for imported food items had increased, although to what extent was difficult to verify. In the latter regard moreover, it is likely that price movements would reflect both cost push (particularly shipping freight rates) and demand pull factors. Moreover, while price increases in local produce clearly disadvantages (to some degree) those dependent on fixed wage incomes (such as public servants), it benefits those growing or harvesting the produce.
61. The social problems highlighted of increased alcohol consumption and prostitution were also difficult to verify. The team observed an increase in alcohol purchasing and consumption in and around Lorengau during the weekend, relative to weekdays (although this may have been due to it coinciding with pay-day). At the same time, it was noted, particularly by government officials, that the increased availability of jobs had led to a noticeable reduction in with the number of intoxicated youths consuming alcohol or homebrew on the streets during the week. Anecdotally, the increase in incomes in Manus has led to a substitution of beer consumption, away from the consumption of home-brewed alcohol.

Looking Ahead – Broader Economic Development Opportunities

62. While the current income gains from the RPC related activities are warmly welcomed within the business and broader community, some businesses expressed uncertainty about the RPC's longevity. There is also a clear recognition among the business community that the income benefits are temporary, with the current construction phase for the facility at Lorengau to be completed by 2015, although this perhaps does not factor in planned additional Australian aid spending on road rehabilitation. Typically, such uncertainty encourages short term focused price maximisation/gouging, of which there seems to be significant anecdotal evidence.²³
63. The income boost from the RPC ought to increase private savings which should then lay the foundation for new investment in Manus Province if profitable opportunities exist. There is, in fact, good evidence of increased saving occurring. In particular, data provided by one of the two main deposit taking institutions in Manus showed an increase in customer deposits of more than 30% over the 12 months from end May 2013.
64. Perhaps the most obvious investment possibilities lie in the development of the Province's agricultural and marine resources. However, the barriers to further development are challenging, particularly reflecting the lack of transport, including inter island transport, and other requisite infrastructure. From discussions with a long term expatriate resident of Manus, for example, it seems that the collapse of the once significant copra industry was due primarily to the cessation of shipping services to the smaller remoter islands of the Province which in turn, he claimed, reflected the introduction of containerised shipping, the consequent need for larger ships, and the inability of those ships to dock at the smaller port facilities in these locations. No doubt, international price trends for copra will have also contributed, but this is a plausible example of the sorts of constraints to development faced by regions such as Manus with small dispersed island populations.
65. Relevant in this respect also is that the income boost from the RPC accruing to the Provincial Government is lagged. This sets Manus apart from, for example, Nauru, where the national government is able to collect all, and diverse types of, taxation revenue directly as it is a sovereign country.
66. The improvement that has occurred in air and sea transport links into Lorengau may offer development potential in some respects. Air Niugini, for example, noted that it offers significant discounts on freight back loaded from small commercial centres such as Manus where otherwise the demand is primarily for inward freight. This could open up opportunities for the export of locally produced fruit, vegetables and fish, although here again, other key requisite infrastructure such as commercial ice making facilities and a proper regulatory regime needed to enforce required quality standards, especially in relation to fish, simply do not exist at present.
67. Similar constraints apply in respect of potential tourism development. There is limited capacity to accommodate large numbers of tourists at any one time in Manus. Any new tourism ventures in PNG would face strong competition from more established and accessible provincial destinations such as East New Britain and Milne Bay, or niche markets such as trekking tourism. A successful niche diving venture targeted to the Japan market did exist in Manus some years ago, but ultimately failed due to reported conflict with landowners over access to reefs.
68. With the present level of air and shipping services inextricably linked to demand generated by the RPC and related construction, it is likely that these services will revert to pre-2012 levels post RPC as there is no sufficient demand from Manus businesses and residents to sustain the additional sea and air links.
69. Without concerted effort and investment from the National Government in requisite transport, including intra-provincial shipping, the prospects for continued economic development in Manus appear limited. Once sustainable, a reopening of the beche de mer fishery would help and could be a catalyst to further marine resource development, as would the establishment of a tuna processing factory that has long been discussed for the Province. However the costs and risks of operating a processing factory in a province that is distant from transport and services hubs (i.e. Lae and Port Moresby) may render such operations unfeasible. The provision of further extension services to agriculture could be feasible, but as in the rest of PNG, supporting agricultural production and activity is dependent on good transport links to markets (domestic or otherwise), and consistency and quality of supply. These and other prospects should be explored as part of a forthcoming Australian sponsored assessment into SME business development prospects in Manus.

²³ Hire cars (normally Toyota 4 wheel drives), for example, typically cost between K650 and K800 per day compared to K200 per day for the same type of vehicle in POM. However the cost of price of purchasing a Toyota Prado in Manus was said to be about K300,000, relative to Port Moresby where a new Prado is approximately K140,000; and road conditions mean substantial wear and tear.

70. The contractors operating the RPC and overseeing the construction activity are promoting longer term sustainable economic outcomes; particularly by developing Manus' human capital. In addition to promoting increased local produce supply, construction contractors, in particular, advised that they were providing local employees with formal certificates verifying the skills they were attaining (e.g. in the operation of machinery) with a view to their becoming more employable generally within the PNG economy. This could assist in maintaining future remittance flows to the Province.

Recommendations

71. The TOR for this study stipulated that the Report should include recommendations or strategies advising the Australian Government on how it can stimulate and enhance further economic activity in the Province through Australian ongoing or future assistance. As identified earlier, given that the income/development benefits flowing from the RPC are concentrated in the Lorengau and Los Negros districts, future Australian economic assistance should continue to focus as far as is practicable in promoting economic development and social development outside of these districts/more remotely in Manus Province. Priorities in this regard have already been identified in work undertaken by the Australian Government in late 2012 in developing a Design Framework for Manus support aid investment.²⁴ Evident from the foregoing section is the critical need for better transport infrastructure, both road and shipping, in promoting private sector economic activity in Manus Province. In this respect, the Design Framework noted (page 21) that, in contrast to supporting construction of a proposed Manus Island ring road, which is being promoted at the political level, "a business model for coastal shipping accessing select isolated locations in parallel with a modest program of constructing 'missing link' road infrastructure would likely be much more compelling – from both economic and social perspectives – particularly for the very remote west end of Manus Island – not to mention potential synergies with access to nearby small islands".
72. Other areas of potential focus identified in the Framework included possible support in the areas of education, health, law and justice and "governance". To the extent proposals in these regards have not already been taken up, they too appear to provide a sound, logical basis for assessing further Australian economic support for Manus Province.

No.	Issue	Recommended Action
1.	The benefits to the Manus economy are concentrated to the Los Negros and Lorengau districts.	The key recommendation of this Report is that future Australian investments – funded through ODA or otherwise - to Manus Province continue to be directed at improving livelihood and wellbeing in more remote communities outside of Los Negros and Lorengau Districts.
2.	Priorities for future Australian financial/economic assistance to Manus Province.	To the extent they have not already been taken up/implemented, future Australian economic assistance to Manus should be guided by the proposals identified in the Manus Support Investment Design Framework: including, in particular, the identification of options for the further development of the Province's road and shipping transport infrastructure

²⁴ Papua New Guinea AusAID Development Investment: Manus Support Investment – Design Framework - Final Draft Report, November 2012.

Attachment A: Study Methodology

The Terms of Reference for the study essentially require an assessment of the impact on the Manus Provincial economy of Australian investments supporting the establishment and on-going operation of the Regional Processing Centre. The TOR also require an assessment of broader socio economic impacts of this investment as may be relevant.

Conceptually, the task requires:

- > A quantification of the current size of the Manus province economy: in other words, an estimate of the Province's Gross Domestic Product.
- > The extent to which the current economy/level of economic activity derives from the RPC and related aid assistance activity.
- > The identification of positive and negative socio economic impacts.

The Theoretical Framework – Economics 1.01

In theory, GDP can be measured in three ways:

- > Production approach: in essence, by summing the total market value of final goods and services produced in the economy being measured during one year.
- > Income approach: typically (there are a number of approaches here),

$$Y = COE + GOS + GMI + T - S, \text{ where}$$

$$Y = \text{GDP}$$

COE = Compensation of employees (wages + superannuation)

GOS = Gross operating surplus (profits) of incorporated businesses

GMI = Gross mixed income of unincorporated businesses

T = Taxes on production and imports

S = Government subsidies on production and imports

- > Expenditure approach

$$Y = C + I + G + (X-M), \text{ where,}$$

C = Value of final consumption

I = Investment (fixed, including housing, plus change in inventories)

G = Government expenditure, excluding transfer payments

X = Exports

M = Imports

In terms of estimating the Manus economy, it is immediately apparent that the data required for all approaches will not be directly available. So the issue becomes, which approach can we best approximate given data most likely available.

Data Potentially Available

- > Should have good data on expenditures regarding RPC and associated Australian aid programs, split between local (i.e. Manus), broader PNG and international (and hence, gross income flows to these groups).
- > Reasonable information should also be available regarding Government budgeted expenditures, although amount and timing of actual expenditure may be problematic (warranted expenditure data may be available from Department of National Planning and possibly outcomes data from NEFC).
- > Regarding exports, data on annual value of sales of the principal crops, cocoa and copra should be available, either directly from the (one or two) key buyers (i.e. Agmark), or from the respective national Boards. The other principal

commercial activity, fishing, seems geared to supplying the RPC and other local consumption, so may be largely picked up via RPC expenditure data.

- There is unlikely to be any comprehensive data regarding levels of private investment, business incomes, or (directly) values of imports.
 - Regarding imports, it should be possible to impute some value via an estimate of the marginal propensity to import. For Manus this is likely to be very high, probably in the order of 0.8 to 0.9 (i.e. for every 1K of expenditures in Manus, probably 80 to 90 toea would be spent on imported goods and services; the corollary, of course, being quite muted multiplier impacts from additional income flows to the province). Exactly what the assumption here should be is something that will need to be determined in light of stakeholder discussions in Manus.
 - A reasonable estimate of annual private business/construction investment and business income may also be possible to derive from discussions with stakeholders in Manus, especially given a likely small number of key (unincorporated) business players in the Province. Assumptions here (and in respect of other components of GDP calculation) might also be facilitated from taxation statistics, if these can be provided by the IRC, in respect of individuals, business and consumption.
- Savings data should also be available directly from the deposit taking institutions in Manus; and perhaps, some data on remittances to the province by Manusians resident outside the province, which anecdotally appear to be significant.

Expenditure Approach

From the above body of data it should be possible to get a reasonable estimate of Manus GDP using the expenditure approach. It should allow, in particular, for a reasonable estimate of private consumption to be derived via the identity:

$C = \text{income (wages + business)} - \text{Savings} - \text{Tax}$ (An issue though, is what incomes should be counted: e.g. all wages and salaries paid to persons working in Manus or just those that are paid to Manus residents + income of Manus based businesses). The remaining components of the GDP calculation would be derived as previously indicated.

Attachment B: Persons and Entities Consulted

In Port Moresby

Organisation	Name and Position
ADB PNG	Aaron Batten, Country Economist
Air Niugini	Mr Dominic Kauma ML, General Manager Commercial
Bank of PNG	Mr Gordon Kapak, Senior Research Analyst, Economic Analysis Unit Ms Tatiana Botnarenco, Economist, Research Department
Department of Treasury	Mr Bruce Reid, Senior Adviser/Team Leader, Strongim Gavman Program (SGP) Mr Brian Thomas, SGP Adviser
Department of Finance	Mr Peter McCray, Senior SGP Adviser/Team Leader
Department of National Planning	Ms Juliana Kubek, Acting Secretary
Institute of National Assessments	Mr Paul Barker, Manager/CEO
Internal Revenue Commission	Mr Trevor Schloss, Senior SGP Adviser Ms Stephanie Trinci, ODI Adviser
National Economic and Fiscal Commission	Mr Patrick Painap, Deputy Director, Operations Mr Lou D'Souza, Strategic Management Adviser
National Statistical Office	Mr Boe Douna, Deputy Census Director
PNG Ports	Mr Simon Inatau
Post PNG	Mr Peter Tepure, Chief Finance Officer

In Manus

Organisation	Name and Position
Air Niugini	Mr Daniel Tasman, Manager
Bank of South Pacific	Mr Quillan Nongi, Branch Manager
City Pharmacy	
Chamber of Commerce	Mr Peter Poiyo, Chairman (also owner of hardware, stationery, autoparts and fishery interests)
Chauka Car Rental	
Coastal Fuel	

Organisation	Name and Position
Decmil	Mark Pengiilly, Senior Project Manager, Ian Hutton, Site Manager; others
Handyman Hardware – Gibson	Mr Stephan Batia, Owner
Harbourside Hotel	Mr Otto Morrow, Manager
Juromo Enterprises	Mr Peter Mochon
Kingfisher Car Rental	Mr Peter Mochon (owned by Juromo)
Manus Savings and Loans	Mr Saperu Paniu, Manager
Papindo	Mr Stanley, Branch Manager
Pokapin	Mrs Irima Pokapin, Principal
Pokapin Security	Mr Rodney Pokapin, Principal
Post PNG	Mr Linus Tatsie, Manager
Transfield Services	Various
United Fuel Services	Tatsie, Manager, Principal Geruromo