

THE IMPACT OF FOREIGN AID ON POVERTY AND HUMAN WELL-BEING IN PAPUA NEW GUINEA

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This paper evaluates the impact of foreign aid on poverty and human well-being in Papua New Guinea during the 1990s. The methodology of the paper involves comparing the mix of donors' aid policies aimed at the promotion of economic growth, direct targeting of the poor and the provision of safety nets with the poverty and well-being situation in Papua New Guinea. Growth in Papua New Guinea has not been pro-poor and the high level of inequality reduces the impact of growth on poverty. The sectoral allocation of foreign aid to Papua New Guinea has been broadly consistent with a strategy to effectively reduce poverty and increase human well-being. However, the paper concludes by suggesting ways in which foreign aid donors can more effectively achieve these goals.

Despite a rich natural resource endowment and receiving large amounts of foreign aid, Papua New Guinea has failed to prosper. The country performs very poorly in comparison to its South Pacific neighbours for many indicators of well-being. Life expectancy is the lowest in the Pacific and only a little over half of the adult population is literate. In the crucial area of health, some indicators have deteriorated during the last decade. The latest UNDP's Human Development Report (UNDP, 2002) reported that Papua New Guinea is 'far behind' in achieving its Millennium Goals by 2015.¹ Moreover, a recent Centre of Independent Studies report states that Papua New Guinea shows signs of following the Solomon Islands "down the path to economic paralysis, government collapse and social despair" (Windybank and Manning, 2003, pp. 1). The report also states that the large amounts of Australian aid, provided since independence in 1975, clearly have not worked.

This paper examines this issue in more detail by investigating the impact of foreign aid on poverty and human well-being in Papua New Guinea. The debate on aid effectiveness has focused on evaluating the impact of aid on growth. Despite

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¹ These goals include halving the proportion of people suffering from hunger, eliminating gender disparity in all levels of education, reducing under-five and infant mortality rates by two-thirds, and halving the proportion of people without access to improved water sources. The results are based on linear interpolation of trends in the 1990s. Data relating to the achievement of universal primary education were not available.

the increasing emphasis on poverty reduction as an objective of foreign aid, the empirical literature seeking to evaluate the direct impact of aid on poverty and human well-being is sparse. Growth is often viewed as the primary driver of poverty reduction and therefore inferences of the impact of aid on poverty are commonly drawn from the impact of aid on growth. However, foreign aid can reduce poverty via other channels than growth. For example, foreign aid can finance projects which directly benefit the poor. Alternatively, aid can have an indirect effect by financing areas of government spending which are likely to benefit the poor.

The empirical evidence that foreign aid has a direct impact on poverty is weak. Kosack (2003) finds that aid can directly increase welfare but only in democracies. However, there is strong evidence that foreign aid has an indirect impact on poverty and well-being through its impact on pro-poor expenditures of recipient countries (Mosley and Hudson, 2001, Verschoor and Kalwij, 2002, Gomanee and Morrissey, 2002, and Gomanee and others, 2003). These studies have used cross-country data with the headcount index, the Human Development Index (HDI) and infant mortality as measures of poverty and well-being.

A recent study has investigated the impact of aid policies on poverty for a single country case study. Le and Winters (2001) provide an excellent conceptual framework in evaluating the impact of aid policies on poverty in Viet Nam. This paper follows their framework in evaluating the impact of foreign aid on poverty in Papua New Guinea during the 1990s. Prior to the 1990s, Australia, (by far the largest donor of aid to Papua New Guinea) provided aid in the form of budget support. Since foreign aid therefore supplemented government revenue, it is very hard to isolate the effects of aid from the impact of other government expenditures. The general perception is that it had little impact on poverty reduction since successive governments directed little expenditure towards the social sectors. Moreover, a fiscal response model for Papua New Guinea indicates that foreign aid has led to small increases in investment expenditures but to minor reductions in health and education expenditures (Feeny and McGillivray, 2003).

A lack of time-series data relating to poverty and well-being prevents a rigorous econometric investigation. Income based measures of well-being such as per capita income are available for a number of years but mask the true level of changes in poverty in Papua New Guinea. The only major sources of reference for poverty and well-being in Papua New Guinea are the 1996 Household Survey (Gibson and Rozelle, 1998) and the 2001 Participatory Poverty Assessment (PPA) carried out by the Asian Development Bank (ADB, 2002).

The impact of foreign aid on poverty and well-being can be investigated by assessing how aid programmes have addressed basic needs in Papua New Guinea. Streeten and Burki (1978) classify essential basic needs into six areas: nutrition; basic education; health; sanitation; water supply; and housing and related infrastructure. There are a number of different strategies to address basic needs. "Meeting these

needs in nutrition, education, health, and shelter may be achieved by various combinations of growth, redistribution of assets and income, and restructuring of production” (Hicks and Streeten, 1979, pp. 568). The analytical framework adopted by this paper follows Le and Winters (2001). They assert that the effective use of foreign aid to reduce poverty requires optimally allocating aid among the following three components: promotion of economic growth; direct targeting of the poor; and the provision of safety nets and direct transfers. The optimal mix of the above components will depend upon the characteristics of the recipient in question. Inferences of the impact of aid on poverty are drawn from an examination of the sectoral composition and geographic distribution of aid in relation to the country’s poverty and well-being situation.

The remainder of this paper is organized as follows. Section I examines the poverty and human well-being situation in Papua New Guinea. The section identifies some of the characteristics of poverty in Papua New Guinea before identifying some of the causes which make people poor. Section II reviews the recent empirical literature on poverty reduction. The review provides insights into how aid policies should be designed in order to effectively reduce poverty in Papua New Guinea. Section III evaluates the extent that foreign aid flows have addressed poverty reduction and human well-being by examining the composition of foreign aid and its distribution. It investigates the proportion of foreign aid allocated to pursuing each of the strategies outlined in Section II. Finally, section IV concludes.

I. POVERTY AND HUMAN WELL-BEING IN PAPUA NEW GUINEA

Rather than suffering from a lack of food, poverty in Papua New Guinea relates more to a lack of infrastructure, opportunities, and access to services. The wantok system (a clan-based support system) helps to protect almost everyone from outright destitution in rural areas. Poverty and well-being indicators identified by the participants of the PPA include a lack of employment/cash; land; education; basic infrastructure (including proper health, living conditions and safe and regular water supply); communications; a fear of crime; and a breakdown of the family unit. The PPA defines poverty in Papua New Guinea as “a result of weak governance, weak social support systems, inefficient use of natural resources, the lack of economic and financial growth opportunities, a poorly maintained infrastructure network and the inefficient delivery of, and lack of access to basic services”, (ADB, 2002, p. iv). The situation in Papua New Guinea can be described in greater detail using poverty indicators, and income-based, social and composite indicators of well-being.

Poverty indicators

The headcount index measures the proportion of the population living below a certain poverty threshold. The measure provides information on the distribution of

poverty and the index is broken down by region in table 1. The 1996 household survey indicates that almost two million people, or 37.5 per cent of the population live in households where the real value of consumption per adult equivalent is below the poverty line of US\$ 1 per day. Large inequalities exist, with the rural poverty rate almost three times that of urban areas. There are also significant differences between regions and 94.7 per cent of the poor live in rural areas (World Bank, 1999). The latest AusAID commissioned report into Papua New Guinea describes a 'rural crisis'.² This has important implications for the targeting of donor aid programmes. Rural areas which have played host to mining projects, are sometimes better off in terms of access to health and education services since the mining companies often assume responsibility for such activities during the lifetime of the project. Other areas have been neglected. The Momase region, covering much of the north coast is the poorest region with 45.8 per cent of the population living below the poverty line. The Highlands also host a large proportion of the poor, indicating that foreign aid should be targeted to these areas. The Southern region has the least poverty with 33.2 per cent of the population living below the poverty line.

Table 1. Poverty measures by region based on the 1996 household survey

	<i>Headcount index</i>		<i>Share of total population (per cent)</i>
	<i>Index</i>	<i>Contribution to total (per cent)</i>	
National Capital District	25.8	3.8	5.5
Papuan/South Coast	33.2	13.2	14.9
Highlands	35.8	38.3	40.1
Momase/North Coast	45.8	35.5	29.2
New Guinea Islands	33.6	9.2	10.3
National Average	37.5	100.0	100.0
Urban	16.1	5.3	15.1
Rural	41.3	94.7	84.9

Source: World Bank (1999). Figures are based on the upper poverty line calculated by Gibson and Rozelle (1996). The poverty line is based on the cost of a food consumption basket that meets a minimum food-energy requirement of 2,200 calories per adult equivalent per day and reflects the dietary patterns of low-income groups. Similar regional differences exist for the poverty gap index and the poverty severity index.

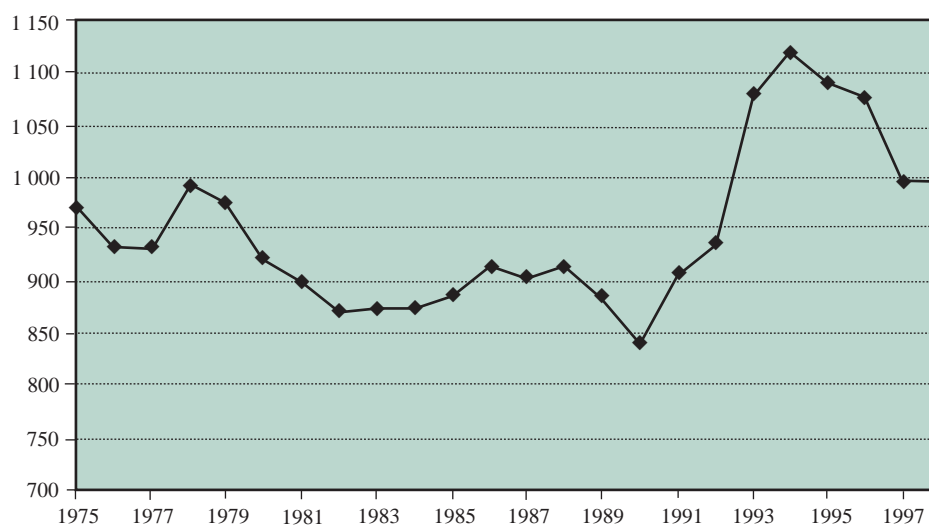
² "Rural Papua New Guinea is in a serious social and economic crisis. Overall in rural areas, living standards are worsening, the population is increasing rapidly, the resource base is being depleted, income-earning opportunities are decreasing, the infrastructure itself is deteriorating and effective government support is uncommon", (AusAID, 2001, p. ix).

The World Bank (1999) provides a breakdown of the poor by age, gender and education. The study finds that the extent and depth of poverty increases with the age of the head of the household and decreases with educational attainment. Gender difference are not large since differences between poverty measures for male and female household heads were not always statistically significant. However, more than 60 per cent of the poor are found in households where the household head is involved in agriculture.

Income-based measures of well-being

Per capita income levels in Papua New Guinea exhibit large year-on-year fluctuations which are predominantly driven by output in the mining and resource sectors and by external shocks experienced by the economy. Per capita income is, therefore, unlikely to effectively capture changes in the living conditions of the majority of the population in the informal sector. It also masks significant variations of income within and between regions. "Average per capita consumption in the urban National Capital District is almost 2.0 times that in the (poorest) New Guinean Islands region and 1.4 times the National average, even after spatial price variations are taken into account" (World Bank, 1999, pp. 74). Figure 1 depicts Papua New Guinea's real GNP per capita since independence in 1975. Real GNP per capita has hardly changed since independence despite large scale mining and oil projects.

Figure 1. Real GNP per capita in Papua New Guinea (US\$ in 1995 prices)



Source: World Bank, World Development Indicators 2000.

Social indicators of well-being

Indicators relating to education in Papua New Guinea are low despite their gradual improvement over the last two decades. The adult literacy has improved from 47 per cent in 1970 to 72.2 per cent in 1995. About 30 per cent of children never enroll in school and of the children who enter primary school, almost half drop out before they reach grade six. Secondary school enrolment rates are particularly low in comparison to other countries (World Bank, 2000). This is primarily due to supply side constraints with many students unable to attend secondary schools due to a lack of access. Again, large regional variations in educational attainment exist. 15 per cent of the National Capital District has never been to school while this figure is 57 per cent for those living in the Highlands region (World Bank, 1999). The plethora of isolated villages, a shortage of skilled teachers and poor infrastructure have hampered the provision of a basic education to all children.

Health indicators paint a gloomy picture of Papua New Guinea. According to the UN, in 1990-97 around 35 per cent of children under the age of 5 were underweight and in 1997, life expectancy at birth was just 58. Just 31 per cent of Papua New Guineans had access to safe water in 1995. According to the Papua New Guinea government, infant mortality declined from 134 per 1,000 births in 1970 to 72 in 1980, but then increased to 82 in 1990 (Department of Health, National Health Plan 1996-2000, Government of Papua New Guinea, Port Moresby, 1996, pp. 7). Once again, regional variations are large. All of these health indicators are notably inferior when compared to Papua New Guinea's South Pacific and South-East Asian neighbours. Papua New Guinea ranks among the ten worst nations worldwide in terms of access to clean, safe water (World Bank, 1999). Poor health statistics partly reflect the high cost of delivering health services to remote rural communities. The country now faces a rapidly increasing problem of HIV infection. AIDS is now the biggest single killer in Port Moresby general hospital. An estimated 0.5 per cent of the population is believed to have been infected (AusAID, 2001). A high incidence of unprotected sex and sexual violence against women are the main contributory factors.

Composite indicators of poverty

The United Nations Development Programme's (UNDP) Human Development Index (HDI) captures other measures of poverty by including information on life expectancy at birth, adult literacy, combined primary, secondary and tertiary gross enrolment, and GDP per capita (PPP US\$) in a single composite index. In 2000, according to the HDI, Papua New Guinea ranked 133 out of 173 countries. Table 2 tracks Papua New Guinea's HDI value through time and compares Papua New Guinea to other countries in its region. The HDI value for Papua New Guinea is much lower than for the country's neighbours. Although the country has not made dramatic

Table 2. Comparison of the human development index 1975 to 2000

	1975	1980	1985	1990	1995	2000
Papua New Guinea	0.42	0.44	0.46	0.48	0.52	0.54
Fiji	0.66	0.68	0.69	0.72	0.74	0.76
Solomon Islands	–	–	–	–	–	0.62
Samoa	–	0.56	0.65	0.66	0.69	0.72
Indonesia	0.47	0.53	0.58	0.62	0.66	0.68

Source: UNDP Human Development Report 2002.

improvements in the value of the HDI, it is encouraging that the trend in this indicator is upwards.

Table 3 provides the Human Poverty Index (HPI) and the HDI by province. The HPI measures deprivation through information on illiteracy, malnutrition among children, early death, poor health care, and poor access to safe water. Combined, they provide a composite index measuring the degree of deprivation in Papua New Guinea. Inspection of the data by region reveals that human poverty and development are at the lowest levels in the five provinces of the Highlands region and two provinces in the Momase region (West and East Sepik). This is in concordance with the analysis of the headcount index. The National Capital District of Papua New Guinea has a HDI that is more than double the national average and almost three times that of West Sepik.

This section has highlighted some of the large inequalities which exist in Papua New Guinea in terms of consumption, and geographic location. The Gini coefficient is a commonly used measure to represent the extent of income inequality. A value of zero indicates complete equality and a value of 1 indicates complete inequality. The Gini coefficient for Papua New Guinea is 50.9 and this is one of the highest in world. Only 17 of 114 countries with Gini coefficients reported in *World Development Indicators 2001* have more inequitable income distributions (AusAID, 2001, pp. 11). “Real per capita consumption among the richest 25 per cent of the population is more than eight times that of the poorest quartile, and caloric availability is more than twice as high” (World Bank, 1999, pp. 74).

Causes of poverty in Papua New Guinea

A strategy to reduce poverty must tackle the causes of poverty. A lack of roads is often cited as a major factor which makes people poor in Papua New Guinea since it prevents goods being brought to market and restricts access to vital basic services. The 1996 Household Survey found that on average it takes people one hour to get to a community school, two hours to get to a health centre and three hours to

Table 3. A comparison of poverty between provinces

<i>Region</i>	<i>Province</i>	<i>Human Poverty Index</i>	<i>Human Development Index</i>
Southern	Western	32.2	0.472
	Gulf	40.0	0.331
	Central	30.9	0.408
	Milne Bay	31.4	0.420
	Oro	36.5	0.386
	National Capital District	14.5	0.758
Highlands	Eastern Highlands	53.9	0.325
	Simbu	54.1	0.320
	Western Highlands	55.5	0.282
	Enga	52.4	0.283
	Southern Highlands	56.7	0.274
Momase	Morobe	39.3	0.389
	Madang	43.4	0.336
	East Sepik	47.3	0.304
	West Sepik (Sandaun)	60.0	0.262
Islands	West New Britain	31.9	0.394
	East New Britain	31.8	0.431
	New Ireland	36.6	0.396
	Manus	39.4	0.421
	NATIONAL	43.7	0.363

Sources: ADB (2000) Country Economic Review: Papua New Guinea, UNDP (1999) Papua New Guinea Human Development Report 1998. Note that data for Bougainville are not available. HDI numbers are from the ADB and are not comparable with the numbers presented in the UNDP Human Development Report since domestic factor income is used rather than GDP. Note also that the report uses the term human deprivation index rather than the human poverty index. Lower values of the Human Poverty Index and higher values of the Human Development Index indicate greater well-being.

get to a high school or postal facility. The traveling times are double for a person living below the poverty line in comparison to those above the poverty line (World Bank, 1999). Most of Papua New Guinea's roads were built after the second World War. However, little maintenance has been carried out on the road network since. Only four per cent of roads are paved in the country. The provinces of Manus, Sandaun, Oro and Gulf have no road links to a major urban centre. Roads become inaccessible during and after rainy periods and contribute to very high transportation costs.

Poor governance exacerbates the problem of poverty in Papua New Guinea. Law and order problems in particular are responsible for reducing the incentives

to harvest crops. “Deteriorating road transport and buyer safety have resulted in 30-50 per cent of the Highlands coffee crop – which is the main source of income for over half the rural population – not being harvested in recent years, and the trees themselves not being maintained” (AusAID, 2001, pp. 24). Tribal fighting, land compensation claims, roadblocks, and mob violence have all contributed to reducing production in Papua New Guinea.

A community-owned system of land tenure currently exists in Papua New Guinea whereby land is communally owned. Approximately 97 per cent of the land area in Papua New Guinea has no precisely defined title. Some rights to use roughly defined land exist but there are many disputes over ownership and boundaries. A lack of land was identified as an important indicator of poverty by participants of the recent PPA. Improvements in agricultural productivity may be limited since there is little incentive to make any fixed investments on the land under communal land ownership (Duncan, 2001). Further, credit from Papua New Guinea’s financial institutions is hard to obtain in rural areas, firstly because there are hardly any banks in rural areas and secondly, because credit is unlikely to be provided without the ownership of land as collateral. The lack of credit also restricts the scope for taking advantage of profitable investment opportunities.

Papua New Guinea is vulnerable to natural disasters, another cause of poverty for a large proportion of the population. In 1998, 2,200 were killed by an earthquake near Rabaul and from the resulting tsunami. Another large earthquake has recently rocked the north coast, resulting in the loss of at least 3 people and ripping coastal homes from their stilts. There are currently more than 4,000 Papua New Guineans in aid camps following the eruption of Mount Pago on the island of West New Britain, in August 2002. Villagers are unlikely to be able to return to their farmlands for decades. The country suffered a major drought in 1997 and is currently in the grip of another which threatens to close down the Ok Tedi copper mine. Papua New Guinea is vulnerable to El Nino, causing rivers to dry, seriously hampering the transportation of resources and goods. People are also vulnerable to commodity price shocks and death or illness in the family. As noted previously, the virtually non-existent financial sector in rural areas of Papua New Guinea makes the traditional management of risk through savings and insurance very hard.

II. WHAT DO WE KNOW ABOUT HOW TO REDUCE POVERTY?

Growth is commonly cited as the primary driver of poverty reduction. However, the poor may not necessarily reap any of the benefits from growth and this is especially true in countries with high levels of inequality. Moreover, growth does not ensure access to health, education and a clean water supply or a better standard of living for those living in some, usually remote, areas. Aid can contribute to poverty reduction by targeting the poorest regions and projects in the social sector. In addition,

safety nets should be provided to protect the most vulnerable from external shocks. “An effective anti-poverty aid policy is likely to simultaneously utilise each of these three strategies: promoting growth, direct targeting and safety nets” (Le and Winters, 2001, pp. 29). This Section addresses these three strategies in turn.

Increase growth

It is widely recognised that there is a positive correlation between sustained economic growth and poverty reduction (Bell and Rich, 1994, Ravallion and Datt, 1994, Ravallion and Chen, 1997, Dollar and Kraay, 2000). Increases in economic growth are expected to benefit the poor due to their participation in economic activities, and lead to larger tax revenues and higher government expenditures, which might include transfers to the least well off as well as increasing access to services such as health and education. The assumption is dependent on growth exceeding population growth and on a stable distribution of income.

Growth strategies that have contributed to successful poverty reduction in other countries include export promotion and trade openness; labour intensive manufacturing promotion (for example Taiwan Province of China, Malaysia, Thailand); and agricultural and rural development (for example in Chile, China, India and Viet Nam). Duncan (2001) notes that the encouragement of labour intensive manufacturing is likely to be ineffective in Papua New Guinea due to the high cost of labour (partly due to high minimum wages) and a low skilled work force. Crime, and high transport and utility costs also imply that Papua New Guinea does not have a climate favourable for manufacturing industries. Papua New Guinea has also proved that it has been unable to reduce poverty through the productive use of large revenues from its mining and oil sectors. Coupled with the fact that resources are running out, pursuing a strategy to reduce poverty through resource rents is not a sensible option for Papua New Guinea.

In developing countries which are predominantly agriculturally based, it is important for growth to be driven by growth in the agricultural sector rather than through the development of the capital-intensive resources sector. In Papua New Guinea, economic growth has primarily been driven by output in the capital intensive mining sector. The large informal sector has, in general, not participated in or benefited from, increases in economic activity in Papua New Guinea. Since the vast majority of the population in Papua New Guinea live in rural areas dependent upon agriculture, an aid strategy which is aimed at boosting agricultural productivity will be more effective at reducing poverty than a strategy aimed at the development of the capital-intensive resources sector.

Furthermore, there is some evidence that agricultural growth is more effective at reducing poverty than manufacturing growth in agriculturally dependent countries (Ravallion and Datt, 1996, Bourguignon and Morrison, 1998). If agriculture is the

primary occupation of the population, agricultural growth is likely to lead to higher output, greater employment opportunities and increases in incomes. The role of aid in such a strategy is to improve the productivity of the rural labour force through investments in health, education and the improvement of skills. The poorest people in Papua New Guinea obtain a large part of their income from the export of tree crops, coffee, cocoa and palm oil. Improving rural infrastructure and in particular the construction and maintenance of Papua New Guinea's rural roads is likely to be effective at improving agricultural growth and boosting rural incomes. Strategies must recognise sustainability in their approach. Improvements in poverty reduction will not last in the long term unless the harvesting of trees and other crops is carried out in a sustainable manner. Consequently, aid programmes should also play a role in addressing these issues.

Targeting and reducing inequality

Given that the benefits of growth might not be shared by all, a further strategy for poverty reduction is the direct targeting of foreign aid to the poor. It is important for certain groups in the population, identified as poor, to receive the benefits from aid. Le and Winters (2001) identify three possible methods of targeting, (i) geographical, such as the rural poor (ii) special groups, such as women, the landless and ethnic minorities, and (iii) targeting needs such as food, water, and housing shortages as well as identifying areas which lack access to roads and health and education services. The positive impact on poverty of pro-poor public expenditures in developing countries is confirmed by Gomanee and Morrissey (2002), Verschoor and Kalwij (2002) and Mosley, and others (2002). Foreign aid can play an important role in supplementing these expenditures and by supporting projects in the social sectors. Since the vast majority of poor people in Papua New Guinea live in rural areas, targeting aid to these areas helps reduce poverty directly and reduce migration from rural to urban areas. Other targeted areas might include regions which are particularly isolated or prone to natural disasters.

Inequality potentially impacts on growth, and on the impact of growth on poverty. There is currently little evidence of a causal link between growth and inequality. Recent research refutes the Kuznets hypothesis by finding no systematic relationship between growth and inequality (Deininger and Squire, 1998, Ravallion and Chen, 1997). In contrast, there is strong evidence of a causal link between the initial level of inequality and growth. Empirical studies find a negative impact of high inequality on growth (Galor and Zeira, 1993, Persson and Tabellini, 1994, Alesina and Rodrik, 1994). Moreover, there is evidence that in countries with initially high levels of inequality, economic growth is less effective at reducing poverty (Bigsten and Levin, 2001, Lustig and others, 2002).

Recent explanations for why inequality is bad for growth include the proposition that inequality can lead to political instability, social tensions and conflicts which reduce growth by deterring foreign and domestic investment, increasing the cost of doing business and reducing the security of property rights. Furthermore, poverty reduction may not necessarily be reduced through economic growth if growth is accompanied by unfavourable changes in income inequality. Therefore, it is important that a strategy to reduce poverty should include policies which assist in redistributing income.

Given the potential importance of inequality to growth and poverty reduction, governments must be active in the process of redistribution. Policies of redistribution are important to reduce inequality. Fiscal policy is one example of an important tool for redistribution. For example, a progressive tax system can effectively reduce inequality. This is redistributive in itself but can also generate extra revenues for social sector expenditures. Although tax reform can be a useful redistributive tool it should be recognised that raising taxes runs the risk of deterring private investment. Previous government policies have tended to increase inequality in Papua New Guinea. Policies have been biased against the poor, favouring capital intensive production whereby the ruling elite have yielded the biggest rewards.

Land reform is another policy to redistribute assets, increase rural productivity and reduce inequality. "The redistribution of large farms, plantations and state-run farms to the landless and to poor smallholders can improve both equity and efficiency (as demonstrated by land reforms in Kerala and East Asia)", (Addison and Cornia, 2001, pp. 21). Land reform is especially important in countries where a large proportion of the poor live in rural areas dependent on agriculture. As well as raising productivity and rural incomes, land reform can also reduce urban-rural inequality. It is recognized that a policy of redistributing assets may have a cost to growth in terms of lost output and efficiency. However, for a rural based agricultural economy such as Papua New Guinea, the benefits are very likely to outweigh these costs. As Banerjee and Newman (1993) recognise, the redistribution of assets will also increase the poor's access to credit markets.

The provision of safety nets and direct transfers

A further strategy is to provide safety nets and direct transfers to the most vulnerable in case of extreme needs. Such transfers are needed to prevent some members of the population becoming destitute or to protect them from a sudden decline in earning capacity due to an external shock such as a drought or earthquake. Papua New Guinea is particularly vulnerable to natural disasters and illness of a member of the family can have serious repercussions due to the semi-subsistence existence of the majority of the population. Due to the extreme isolation of many small communities in Papua New Guinea, there can be very few linkages to society outside the local

community, increasing vulnerability to external shocks. Ensuring credit, insurance and saving facilities are readily available to the poor can provide them with the means to a better standard of living. Credit can enable the poor to undertake profitable investments which would otherwise be too costly while insurance and savings would cushion the effects of shocks such as natural disasters and illness or death of a family member. Microfinance institutions can play an important role in providing these safety nets for the poor although it is recognised they are difficult to operate in Papua New Guinea due to the low population density in rural areas.

In summary, economic growth alone is unlikely to successfully reduce poverty in Papua New Guinea. Growth driven by the agricultural sector will be most beneficial but in the absence of the rapid development of this sector, growth needs to be accompanied by other policies and strategies to ensure the poor benefit. Goudie and Ladd (1999) provide a good summary of the consensus on what constitutes good pro-poor growth policies. Not all of the strategies which have been successful at reducing poverty in other developing countries will be successful in Papua New Guinea due to the country's characteristics. In the case of Papua New Guinea they include the promotion of labour intensive rather than capital intensive activities, emphasising growth in agriculture and remote rural and poor regions, and investments in primary health, education and roads.

III. EVALUATING THE IMPACT OF AID ON POVERTY IN PAPUA NEW GUINEA

The 1996 household survey was the first to be carried out nationally. This makes assessments of changes in poverty difficult to assess through time. However, using an urban household survey carried out in Port Moresby in 1986, Gibson and Rozelle (1996) show that there was no significant change in the portion of households with incomes below the poverty line between 1986 and 1996. Poverty, at least in Port Moresby, therefore appears to have remained static. However, Gibson (2001) finds that the depth and severity of poverty increased between 1986 and 1996 in the main urban areas of Papua New Guinea. His results suggest that increasing income inequality, rather than slow growth is the main cause of the increase in poverty measured by the headcount index. The 1996 household survey also provides insights into changes in poverty levels by asking respondents about their perceived welfare relative to 1994. "Half the population felt worse off in 1996 than two years earlier, while only one-tenth felt better off. The portion of people feeling better off is positively related to the level of income" (World Bank, 1999, pp. 80-81).

This evidence indicates that poverty levels in Papua New Guinea are unlikely to have improved in recent years and may even have got worse. It would be easy to conclude that the large amounts of foreign aid have been ineffective at reducing poverty in Papua New Guinea. However, this ignores the question of the counterfactual.

What would the poverty situation be in Papua New Guinea in the absence of the large amount of aid the country has received? This section attempts to evaluate the impact foreign aid has had on poverty by evaluating its distribution, performance on growth, how effectively it has been targeted at the poor and the extent it has provided the poor with safety nets.

Foreign aid flows to Papua New Guinea have been and remain important. In 1975 aid per capita amounted to US\$ 125 and accounted for 24 per cent of GDP and 60 per cent of the Papua New Guinea Government budget. Foreign aid flows have waned but still account for 20 per cent of the budget. Australia has contributed approximately 90 per cent of all aid to Papua New Guinea since independence. Up to the 1990s, virtually all Australian aid was provided to Papua New Guinea in the form of budget support. During the 1990s Australian budget support aid has been slowly phased out in favour of jointly programmed project aid.

Japan is the second largest bilateral donor to Papua New Guinea. Grant aid has focused on human development, public health and education, while loans are targeted at the sectors of energy, transportation and agriculture. Smaller bilateral donors include the UK, Germany, New Zealand, and Taiwan Province of China and they are generally focused on human development. Despite increasing during the 1990s, multilateral flows to Papua New Guinea have remained small in comparison to bilateral aid flows. Most multilateral aid is from the EU and Asian Development Bank while Papua New Guinea undertook World Bank Structural Adjustment Programmes (SAPs) in 1990, 1995 and 2000. The impact of World Bank and IMF policy prescriptions on poverty in Papua New Guinea is an important issue but lies outside the scope of this paper. Since Australia has been by far the largest donor to Papua New Guinea, this section focuses on the specific objectives of this donor in evaluating aid programmes to Papua New Guinea as a whole.

In order to effectively reduce poverty, Australian aid is focused on achieving the following four objectives: (i) strengthening governance, (ii) improving social indicators, (iii) building prospects for sustainable economic growth, and (iv) consolidating the peace process in Bougainville. These objectives closely follow the priorities of the Papua New Guinea Government's Medium Term Development Strategy (1997-2002). The priorities are elementary and primary education; primary health care; transport infrastructure maintenance; law and order; promotion of income-earning opportunities for local entrepreneurs (largely smallholding farmers), particularly in rural areas; and the peaceful resolution of the Bougainville crisis (AusAID, 2001).

Following Le and Winters (2001), the balance of the approaches of aid donors to poverty reduction in Papua New Guinea can be estimated by categorising sector aid flows. It is recognized that this approach uses inputs without effectively capturing outputs but it still provides a useful analytical framework to evaluate the likely impact of aid on poverty. Total Official Development Assistance (ODA) commitments to

Papua New Guinea by sector are available from the OECD (2001). Although commitments may differ from actual disbursements, they provide a good indication of the allocation of aid. In this paper, aid committed to the 'Economic infrastructure and services' and 'Production' sectors is categorized as promoting economic growth. Aid committed to 'Social infrastructure and services' sector is categorized as direct targeting to the poor, while aid committed to 'Emergency' sector is categorized as the provision of aid for safety nets and direct transfers.³ Remaining ODA commitments are allocated to 'Multisectors' and 'Programme assistance', commonly in the form of budget support.

There are fairly large annual variations in these categorisations during the 1990s. However, during the period 1990 to 1999, 28 per cent of aid was committed to increasing growth, 41 per cent for the direct targeting of the poor, 4 per cent to safety nets and direct transfers and 27 per cent to other activities. These figures are in broad agreement with a sectoral breakdown of Australian aid disbursements to Papua New Guinea. In 2000, Australian aid was targeted at infrastructure (32 per cent), education and training (26 per cent), governance (19 per cent) and health (13 per cent) sectors. This sectoral allocation has remained fairly constant throughout the 1990s although there has been increasing emphasis on health and infrastructure. A discussion of this balance in the allocation of aid to growth, direct targeting of the poor and the provision of safety nets follows.

Increased growth

Although all of the sectors targeted by aid will have some impact on growth in the long term, the impact of aid on growth will largely be attributed to the financing of infrastructure projects with aid funds. Infrastructure projects of the Australian aid programme typically relate to the transport and communications sector. Projects commonly involve the upgrading and maintenance of roads, bridges and airports. The emphasis has been on upgrading and maintaining existing infrastructure rather than undertaking new capital works. In terms of the allocation to the production sector, aid donors have favoured the agriculture, forestry and fisheries sector. This sector was committed US\$ 151 m during the period 1990 to 1999 compared to US\$ 35 m committed to the industry, mining and construction sector and US\$ 1 m to the trade and tourism sector. However, Feeny (2003) finds little evidence that foreign aid has contributed to economic growth in Papua New Guinea.

Aid projects relating to growth have not focused on labour intensive agricultural projects which are more likely to benefit the poor than infrastructure

³ Social infrastructure and services includes aid flows directed to health, education and water supply and sanitation. Economic infrastructure and services includes aid flows to energy and transport and communications, while aid flows devoted to the production sector consists of aid flows directed to agriculture, forestry and fishing, mining and construction, and trade and tourism.

projects relating to airports and communications. The maintenance of existing roads will benefit those in rural areas which already have access to them. New roads need to be built in order to service those in more isolated rural communities. Duncan (2001) argues that in the Australian aid programme, the absence for new road construction is a an area of concern. He recognizes the trade-off between building new roads in areas which have the greatest income-earning potential and providing access to those in the more remote areas. However, in the past there has been an overwhelming bias in favour of urban areas over rural areas.

Growth of the agriculture, forestry and fisheries sector has been poor during the 1990s. Since 1996, the sector has only recorded one year of positive growth. This is very disappointing since the vast majority of the Papua New Guinea population rely on this sector for their livelihood. On this evidence, aid projects have not been effective at increasing agricultural productivity and boosting rural incomes. Resources in Papua New Guinea are running out. All existing mines and oilfields are projected to close by 2014 (with the exception of one gold mine). Since there has also been a large reduction in exploration activity, public finances are likely to be much lower in a decade's time than they are today. In the long term Papua New Guinea will primarily rely on the rural sector for its growth rather than the resources sector. This increases the importance of aid programmes investing in this sector and reversing the trend of falling investment in rural activities.

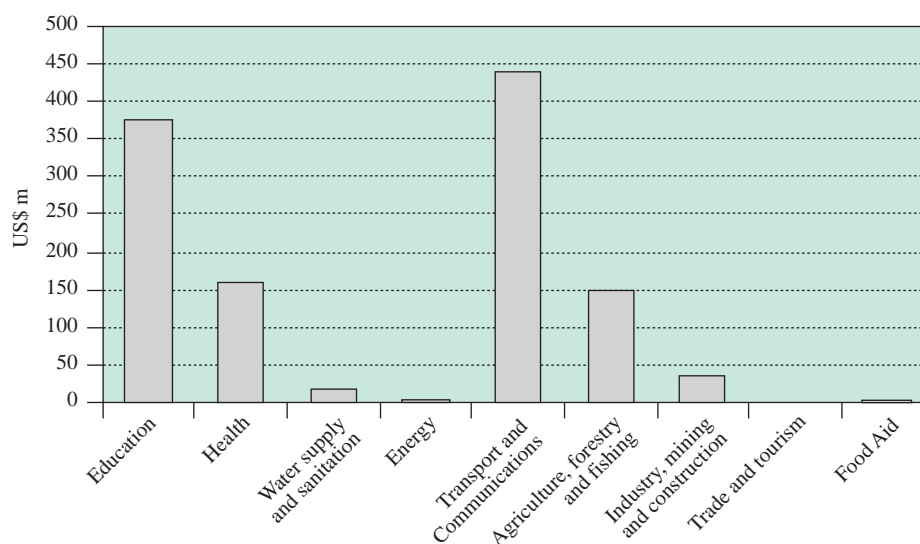
A significant proportion of Australian aid projects are directed at improving governance in Papua New Guinea. Governance programmes focus on improving public administration, law and justice and creating opportunities for the private sector. An incentive fund has been recently introduced in 2000, whereby agencies which have a good proven track record of good programme management and policy reform will obtain future Australian aid funding. Other projects are aimed at anticorruption, improving the performance of the legal and judicial system, and providing training for small and medium sized enterprises. It is recognized that if capacity is very weak, then public sector reform and programmes aimed at improving governance can improve the effectiveness of aid administration and contribute to poverty reduction. However, Duncan (2001) argues that although good governance is a crucial element in creating an environment in which public and private sector activities will create growth, projects in this area do more to enhance incomes in urban areas rather than effectively reduce poverty in rural areas. Priority should be given to roads and health and education in rural areas rather than to public sector reform if poverty reduction is the primary objective of donors.

Targeting and reducing inequality

Figure 2 provides a sub-sector breakdown of total bilateral ODA commitments from the OECD's Development Assistance Committee (DAC) since 1990. The graph

highlights the importance of transport and communications, education and health in DAC donor aid programmes to Papua New Guinea. Surprisingly little aid (ODA) has been committed to the water supply and sanitation sector. Over two thirds of people obtain their drinking water from unprotected sources in Papua New Guinea. Aid projects have not been effective at securing a clean supply of water to rural communities and this should be a priority in the future.

Figure 2. DAC commitments to Papua New Guinea by sub-sector 1990 to 1999



Source: OECD (2000) DAC Database.

As previously stated, the major causes of poverty in Papua New Guinea are a lack of transport infrastructure, and lack of access to health and education services, especially in rural areas. This sectoral breakdown is broadly consistent with a strategy to reduce poverty. Australian education and training projects focus on improving access to schools, greater provision of equipment and materials and teacher training and curriculum development. Primary and secondary schooling are targeted although more projects are directed towards the former. Increasing attention is being paid to the tertiary sector. Australia's health aid programme has focused on improving low-cost primary and preventative health services in rural communities and establishing an effective structure for delivering health services to rural areas. Women and children in rural areas are particularly targeted.

Inferences on the allocation of aid by geographic location are difficult due to a lack of available data. Analysis of the distribution of Australian aid projects in 1995/96, 1997/98 and 1999/2000 indicates that most projects are national in nature and the poorest regions of the country have not been prioritized. Arguably, aid projects could have been more effective at reducing poverty if they had been more focused on the provinces of East and West Sepik (Momase) and the Highlands areas of the country since these are notably the poorest regions. However, the concentration of the Australian aid programme to the island of Bougainville will have a direct impact on poverty on the island and help restore peace and stability. The lack of geographic targeting implies that aid will have had a limited impact on the high level of inequality prevalent in Papua New Guinea. Reducing inequality would reduce poverty directly but is also likely to ensure that growth is more effective at reducing poverty. Inequality in Papua New Guinea is partly responsible for civil unrest and crime which is an important factor deterring foreign investment in the country.

The provision of safety nets and direct transfers

Small proportions of foreign aid flows to Papua New Guinea have been directed at the provision of safety nets and direct transfers. Given the vulnerability of a large part of the country's population to shocks, aid projects have not been effective at providing greater security to the poor. Credit and financial services are still not available to those in rural isolated communities constraining their incomes and limiting their ability to manage risk. The large number of remote villages hampers the effectiveness of organizations such as microfinance institutions and aid donors need to provide greater assistance in this area.

IV. CONCLUSION AND POLICY IMPLICATIONS

A large proportion of the Papua New Guinea population suffer from a lack of infrastructure, opportunity and access to basic services. The primary responsibility for reducing the level of poverty in Papua New Guinea rests with the Government. The Papua New Guinea Government must pursue a much broader based growth strategy for the poor to benefit from increases in economic activity. Policies based on agricultural growth rather than further developments of the mining and resources sector would be more favourable to the poor. Land reform might also yield large benefits although it is recognized that this is inconsistent with Papua New Guinea's culture.

Aid donors should support any attempts by the Papua New Guinea Government to initiate and pursue these strategies. However, there are also a number of actions that donors can take independently of the Papua New Guinea Government. This paper emphasises that the Australian and other aid programmes have been broadly consistent with a strategy to reduce poverty. In the absence of foreign aid, there is no doubt that the degree of poverty in Papua New Guinea would be even greater than that prevailing.

The Australian policy of phasing out aid provided as budget support in favour of project aid has ensured that aid is now used for important projects in the health and education sectors. Education for all should remain a top priority. This paper also argues that the aid programme could be better prioritised in the following five ways.

Firstly, greater targeting of foreign aid to those in the poorest regions of the country is required to reduce the very high level of inequality prevailing in Papua New Guinea. Reducing inequality will reduce tension between different ethnic groups. Recent research also indicates that growth is more likely to reduce poverty in countries with less inequality. A greater number of aid projects should therefore be established in Madang and East and West Sepik provinces of the Momase region and the five provinces of the Highlands region. Aid projects could be redirected from the relatively affluent National Capital District. Reducing inequality may also reduce crime and security problems.

The vast majority of the Papua New Guinea population live in rural areas and operate in the informal sector. They have not participated in economic growth which has been driven by the capital intensive mining sector. Although the Papua New Guinea Government is primarily responsible for pursuing a growth strategy based on the development of agriculture, donors can still play an important role. Donors can play a role in developing new agricultural methods, assist in expanding agricultural production, identifying niche markets and in assisting with more effective marketing of Papua New Guinea's agricultural products.

Thirdly, the provision of a clean water supply must take a higher priority in donor aid programmes. Difficulties in achieving and securing clean water to Papua New Guinea's very isolated and remote villages are recognized. However, with less than one third of the population having access to safe drinking water, it is fair to deduce that this area has not been a high priority in aid programmes to date. Securing a clean water supply to a greater proportion of the population can be expected to have 'knock-on' effects, leading to improvements in both health and education indicators.

Fourthly, donors should assist in making financial services to the poor in rural areas. Microfinance schemes should be encouraged to enable greater access to credit and insurance. Not only will this help those in rural areas take advantage of profitable investment opportunities it will enable them to manage risk through savings. This is important due to the rural population's vulnerability to natural disasters and illness. Donors should provide assistance to NGOs to assist in establishing these schemes.

Finally, it is argued that donors should prioritise the construction of new roads in addition to the maintenance of existing roads. Not only will this ensure greater access to health and education services, it will ensure that small scale producers face lower transportation cost, have greater opportunity to get their product to market and raise their rural incomes. Improving the transport networks across the country will improve communications between different ethnic groups and may reduce tensions and increase security.

REFERENCES

- Addison, T. and G.A. Cornia, 2001. *Income Distribution Policies for Faster Poverty Reduction*, UN/WIDER Discussion Paper 2001/93, United Nations University.
- Alesina, A. and D. Rodrik, 1994. "Distributive politics and economic growth", *Quarterly Journal of Economics*, vol. 109, pp. 465-490.
- Asian Development Bank, 2000. *Country Economic Review* (Papua New Guinea, Asian Development Bank, Manila).
- _____, 2002. "Poverty analysis for socio-economic development strategies: interim report", Asian Development Bank, mimeo.
- AusAID, 2001. *Enclaves or Equity: The Rural Crisis and Development Choice in Papua New Guinea*, International Development Issues No. 54, Australian Agency for International Development, Canberra.
- Banerjee, A. and A. Newman, 1993. "Occupational choice and the progress of development", *Journal of Political Economy*, vol. 101, pp. 274-299.
- Bell, C. and R. Rich, 1994. "Rural poverty and agricultural performance in post-independence India", *Oxford Bulletin of Economics and Statistics*, vol. 56, No. 2, pp. 111-133.
- Bigsten, A. and J. Levin, 2001. "Growth, income distribution and poverty: a review", UN/WIDER Discussion Paper 2001/129, United Nations University.
- Bourguignon, F. and C. Morrison, 1998. "Inequality and development: the role of dualism", *Journal of Development Economics*, vol. 57, pp. 233-257.
- Deininger, K. and L. Squire, 1998. "New ways of looking at old issues: asset inequality and growth", *Journal of Development Economics*, vol. 57, pp. 259-287.
- Department of Health, 1996. *National Health Plan 1996 to 2000* (Port Moresby, Government of Papua New Guinea).
- Dollar, D. and A. Kraay, 2000. "Growth is good for the poor", Policy Research Working Paper No. 2587, Washington, D.C., World Bank.
- Duncan, R.C., 2001. "Papua New Guinea: poverty analysis, poverty reduction and the appropriateness of AusAID's development assistance", National Centre for Development Studies, Australian National University, mimeo.
- Feeny, S., 2003. "The impact of foreign aid on economic growth in Papua New Guinea", RMIT University, mimeo.
- Feeny, S. and M. McGillivray, 2003. "Foreign aid and public sector fiscal behaviour: the case of Papua New Guinea", United Nations World Institute for Development Economics Research, mimeo.
- Galor, O. and J. Zeira, 1993. "Income distribution and macroeconomics", *Review of Economic Studies*, vol. 60, pp. 35-52.
- Gibson, J. and S. Rozelle, 1998. "Results of the household survey component of the 1996 poverty assessment for Papua New Guinea", mimeo. Population and Human Resources Division, World Bank.
- Gibson, J., 2001. "The impact of growth and distribution on poverty in Papua New Guinea", *Applied Economics Letters*, vol. 7, pp. 541-544.

- Gomanee, K. and O. Morrissey, 2002. "Evaluating aid effectiveness against a poverty reduction criterion", DESG Conference Paper, Nottingham, April 2002.
- Gomanee, K., S. Girma, and O. Morrissey, 2003. "Searching for aid threshold effects: aid, growth and the welfare of the poor", paper presented at a seminar at CASE, Oxford, 28 January 2003.
- Goudie, A. and P. Ladd, 1999. "Economic growth, poverty and inequality", *Journal of International Development*, vol. 11, pp. 177-195.
- Hicks, N. and P. Streeten, 1979. "Indicators of development: the search for a basic needs yardstick", *World Development*, vol. 7, pp. 567-580.
- Kosack, S., 2003. "Effective aid: how democracy allows development aid to improve the quality of life", *World Development*, vol. 31, No. 1, pp. 1-22.
- Le, T.H. and P. Winters, 2001. "Aid policies and poverty alleviation: the case of Viet Nam", *Asia-Pacific Development Journal*, vol. 8, No. 2, pp. 27-44.
- Lustig, N., O. Arias and J. Rigolini, 2002. "Poverty reduction and economic growth: a two-way causality. Inter-American Development Bank", Sustainable Development Department Technical Papers Series, Washington.
- Mosley, P. and J. Hudson, 2001. "Aid, poverty reduction and the new conditionality", mimeo.
- OECD, 2001. *International Development Statistics* CD Rom (Paris, OECD).
- Persson, T. and G. Tabellini, 1994. "Is inequality harmful for growth?", *American Economic Review*, vol. 84, pp. 600-621.
- Ravallion, M. and S. Chen, 1997. "What can new survey data tell us about recent changes in distribution and poverty?", *World Bank Research Observer*, vol. 11, pp. 357-382.
- Ravallion, M. and G. Datt, 1994. *Growth and Poverty in India* (Washington, D.C., Poverty and Human Resource Division, World Bank).
- _____, 1996. "How important to India's poor is the sectoral composition of economic growth", *World Bank Economic Review*, vol. 10, pp. 1-25.
- Streeten, P and S.J. Burki, 1978. "Basic needs: some issues", *World Development*, vol. 6, No. 3
- UNDP, 1999. *Papua New Guinea Human Development Report 1998*, United Nations Development Programme.
- _____, 2000. *Human Development Report 2002: Deepening Democracy in a Fragmented World* (New York, Oxford University Press).
- Verschoor, A. and A. Kalwij, 2002. "Aid, social policies and pro-poor growth", Department of Economics, University of Sheffield, Research Programme on Risk, Labour Markets and Pro-poor Growth, Occasional Paper 4.
- Windybank, S. and M. Manning, 2003. *Papua New Guinea On the Brink*, Issue Analysis, No. 30, Centre of Independent Studies, Sydney.
- World Bank, 1999. *Papua New Guinea: Improving Governance and Performance*, Report No. 19388-Papua New Guinea, Poverty Reduction and Economic Management Sector Unit, East Asia and Pacific Region, World Bank.
- _____, 2000. *World Development Indicators* CD Rom (Washington, D.C., World Bank).