

PAPUA NEW GUINEA:

POVERTY ASSESSMENT

30 June 2004

ABBREVIATION

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BOM	Board of Management
CASP	Commodity Assistance Support Project
ECP	Enhanced Cooperation Program
DEA	District Education Administrator
DHS	Demographic and Health Survey
DNPRD	Department of National Planning and Rural Development
EHP	Eastern Highlands Province
ENBP	East New Britain Province
GAQEP	Government Assistance to Quality Education Program
GOPNG	Government of Papua New Guinea
ILGs	Incorporated Land Groups
LICUS	Low Income Countries Under Stress
LLG	Local-Level Government
MTDS	Medium-Term Development Strategy
NCD	National Capital District
NEFC	National Economic and Fiscal Commission
NDOE	National Department of Education
NEB	National Education Board
NEC	National Executive Council
NEC	National Economic
NGOs	Non-Government Organizations
NHS	National Household Survey
NRI	National Research Institute
PDOE	Provincial Division of Education
PEA	Provincial Education Advisor
PEB	Provincial Education Board
PERR	Public Expenditure Review and Rationalization
PESD	Public Expenditure and Service Delivery
PNC	Parents and Community
PNG	Papua New Guinea
PPS	Probability Proportional to Size
PSRMU	Public Sector Reform of Management Unit
RIGFA	Review of Intergovernmental Financial Arrangements
SMEs	Small and Medium Enterprises
TSC	Teacher Service Commission
UPE	Universal Primary Education
VSO	Voluntary Services Overseas
WNBP	West New Britain Province

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PREFACE AND ACKNOWLEDGEMENTS

This Poverty Assessment Report seeks to provide an update on the poverty situation in Papua New Guinea since the last World Bank poverty report of year 2000 that utilized data from the PNG National Household Survey of 1996. Though constrained by the non-availability of any recent household survey data (for none have been undertaken since then), this Report utilizes information from a number of different sources (including the 2000 National Census) to construct this update.

In one respect, this Report starts where the last World Bank report on Poverty in PNG left off. One of the information gaps identified in the latter report was the effectiveness of public spending on health and education. This Report makes an attempt to fill that gap – for the education sector. The third chapter of the Report summarizes key findings from a study of public expenditure and service delivery (referred to as the PESD study) that was undertaken as an integral part of the work for this Poverty Assessment. There is a detailed PESD Report resulting from that work which should be read as a companion to this Report.

The Poverty Assessment also deals with a number of issues that overlap with those discussed in the recent Public Expenditure Review and Rationalization (PERR) Report. In that respect, the discussion in this report complements that in the PERR.

The PESD work utilized new data from a Public Expenditure and Service Delivery (PESD) survey conducted during February to August 2002. The PESD survey was funded in large part through a trust fund set up by AusAID. The World Bank is grateful to AusAID for this support. The survey was carried out by the National Research Institute, Port Moresby.

The analysis for the report was undertaken by a World Bank team comprising of Gaurav Datt, Deon Filmer, Dilip Parajuli, Vicky Hwang, Martín Cumpa, Robert Ackland and Thomas Walker. The assistance of the National Research Institute (NRI) at various stages of data preparation and analysis for the PESD study was critical. A special thanks to Richard Guy who not only led this activity at NRI, but also provided valuable feedback throughout the work.

This report was prepared under the overall guidance of Homi Kharas (Chief Economist and Sector Director, EASPR), Tamar Manuelyan Atinc (Sector Manager, Poverty Cluster, EASPR), Klaus Rohland (the then Country Director), and Zhu Xian (the current Country Director). It has also greatly benefited from the support, guidance and/or comments from Cyrus Talati (Country Economist), Natasha Beschorner (Country Program Coordinator), Mahesh Sharma (Country Manager), Ian Morris (Human Resource Specialist), Bryant Allen, Andrew Bond, Michael Bourke, Kerstin Canby, Ian Collingwood, Sanjay Dhar, John Gibson, Bruce Harris, John Josephs, Peter Lanjouw, John Strongman, Duvurri Subbarao, Geoff Thompson, Luke Taita, Kathy Whimp, Qinhua Zhao and the peer reviewers, Jeni Klugman and Jeffrey Hammer.

EXECUTIVE SUMMARY

- 1. This report takes stock of the poverty situation in PNG and the consequent policy challenges amidst concerns of deteriorating economic and social conditions in the country ...** A number of recent assessments have described the social and economic situation in Papua New Guinea in stark terms as a country in the throes of a serious social and economic crisis. Responding, in part, to similar concerns, PNG's most significant donor Australia recently developed its Enhanced Cooperation Program (ECP) "to strengthen its engagement in Papua New Guinea". While concerns with the PNG situation are manifold, an overarching concern relates to the prospects for protecting the living standards of the population, especially the relatively poor population, in the short and medium term. In this setting, this Poverty Assessment report seeks to (i) provide an update on the state of poverty in country, and (ii) review policy issues and challenges in the two key areas of restoration of economic growth and the delivery of basic services, and (iii) assess key gaps in the currently available information base for poverty monitoring and evaluation.
- 2. The report interprets poverty broadly to include both the income and non-income dimensions ...** This broader notion of poverty is consistent with both the government's own conception as reflected in its recent Poverty Reduction Strategy as well as in the popular conception of poverty that comes through in participatory consultations.

State of poverty in PNG

- 3. Income poverty: There are indications that poverty levels have increased sharply in recent years, and are unlikely to climb down in the immediate future ...** Using a poverty line that allows for 2200 calories per adult equivalent per day and an allowance for basic non-food expenditure, the projections of poverty measures indicate that the proportion of population in poverty has increased from 37.5% in 1996 to about 54% by 2003. The trends are no different for the international poverty line of "\$1/day", using which the incidence of poverty is estimated to have risen from about 25% to just under 40% over the same period.
- 4. The key factor underlying the increase in poverty has been the contraction of the economy ...** GDP growth rate plummeted since the mid-1990s and still has not convincingly recovered. For most of the last 10 years, the economy has been contracting, and together with a population growth of 2.7% per year, in per capita terms the last decade has been a period of massive growth failure.
- 5. Education: Current levels of attainment are not high and there is limited evidence of improvement in recent years ...** According to the 2000 National Census, only 56% of the

population 10 and above was literate in year 2000, the proportion who had ever been to school is the same, and only 38% had completed grade 6. A comparison with the 1996 survey data (from the National household Survey and/or the Demographic and Health Survey) presents a mixed and confounding picture. There seems to have been a modest improvement in the proportion of those completing primary education (37% in 1996). However, the literacy rate (estimated at 51% in 1996) and the proportion of those who ever attended school (about 64% in 1996) seem to move in opposite directions, pointing to potential comparability problems between the NHS/DHS and the Census data. Overall, it is difficult to interpret the evidence as indicative of anything more than a modest progress in education outcomes during 1996-2000.

6. **Health: Current outcome and output indicators are low and there are signs of recent deterioration in health services ...** While there has been some improvement in demographic indicators between 1980 and 2000, progress has been slow especially in the case of indicators like life expectancy (54 years in 2000) and infant mortality (67 per thousand in 2000). There are further signs of a recent decline in outpatient visits per capita, and in several performance indicators related to maternal and child health. And HIV/AIDS is likely to increase the burden of disease in adults.

7. **There is a large rural-urban divide with regards to both income and non-income indicators ...** The case for greater attention to the rural sector is rendered urgent by the fact that practically every socio-economic indicator is significantly worse in rural areas. Moreover, while consistent data over time are limited, the available information does *not* suggest a diminishing gap between rural and urban sectors. On the contrary, for some indicators, such as those related to health, the gap is clearly widening.

8. **... and there are large disparities both across and within provinces.** Assessed in terms of five indicators relating to infant mortality, life expectancy at birth, overall literacy rate, the ratio of female-to-male literacy and the headcount index of (consumption) poverty, the results indicate that amongst the worst performers are the provinces of Madang, East Sepik and West Sepik which are below the national average in terms of all five indicators. Enga in the Highlands performs poorly in terms of all indicators except the headcount index. Gulf and Morobe are similar to Enga but have higher literacy rate than the national average; though for Enga the literacy rate is only slightly higher.

9. Similarly, with the help of the **Poverty Mapping exercise** and other data sources, notably the 2000 National Census, it is possible to map the income and non-income dimensions of poverty **at the district level**, thus helping us identify the poorest areas nationwide. It would be of considerable importance that future development policies factor in the regional dimension to protect and improve living standards in the “below-average” provinces, especially in Momase and the Highlands regions, and amongst the poorest districts within provinces.

10. **Restoration of economic growth and maintaining provision of basic services, especially in education and health, are the two principal challenges for poverty reduction in PNG at this time ...** Each of these challenges involves its own set of further issues, though several of them are equally relevant to both.

The challenge of restoring growth

11. **Restoring growth is more than a matter of reverting back to the conditions of the early 1990s ...** After negative GDP growth in 6 out of the last 9 years and negative per capita growth in 7 of those 9 years, the fundamental importance of restoring economic growth can not be over-emphasized. Yet, this may be more than a matter of reverting back to the economic conditions of the early 1990s when the country experienced positive growth. There are lessons to be learnt from past experience. While the agenda for restoration of growth for poverty reduction is large and complex, there are five areas that are arguably in need of urgent attention.

12. **Pattern of growth: The mineral sector has been a major source of economic volatility, and has contributed little to changes in poverty over time ...** Given that few of the poor depend on the mineral sector and that linkages with the rest of the economy are weak, its contribution to changes in poverty has been rather limited. Projections of poverty indicate that in contrast to the mining sector accounting for over half the decline in GDP growth since the mid-1990s, its contribution to the increase in poverty has only been about 14%. Projections up to 10 years ahead indicate that further expected declines in the mineral sector would also have only a modest impact on poverty.

13. **The limited contribution of the mineral sector to poverty reduction applies more generally to the resource sector as a whole ...** More generally, the results illustrate that the resource sector-dominated growth path that PNG appears to have followed over the past 30 years has not been particularly pro-poor. The extractive industry-oriented growth pattern has often come at the expense of government attention to the development of the non-mineral economy, and this in turn has inhibited poverty alleviation in PNG. Like the mineral sector, the forestry sector is another example of missed opportunities for poverty alleviation despite extensive resource endowments. Amongst other factors, the incorporated land groups (ILGs), for a variety of reasons, have failed to ensure equitable distribution and productive utilization of resource rents, pointing to the need for ILG reform or developing alternative mechanisms for the distribution of resource rents. It also reinforces the need to shift away from a resource-sector dominated growth strategy. While the mineral sector's contribution to government revenues and exports will continue to be important (though less so than it has been in the past), the country will need to increasingly look to its non-mineral economy for sustaining future growth and poverty reduction.

14. **Infrastructure: Investment in new and maintaining existing infrastructure (especially roads and transport) remains an increasingly important priority ...** The infrastructure in the country is in a state of increasing disrepair with significant implications for economic growth, service delivery and food security. Infrastructure spending could also be a feasible means of reaching the poor. The benefits to the poor could be further enhanced if infrastructure projects were implemented through labor-intensive public works programs exploiting their self-targeting character such that the relatively poor self-select themselves as participants in such works programs.

15. **“Law and order”: PNG’s “law and order” problem has become a serious development challenge ...** Criminal activity and social conflict have been on the rise in the country, spreading even to rural areas. The lack of employment and income-earning avenues, especially important for the youth (15-29 years) whose ranks swell at about 3% per year, is driving an increasing proportion of the labor force into the informal sector, the largest segment of

which (estimated to be as high as half in urban areas) comprises of ‘illegitimate’ activities. The link between crime and lack of economic opportunities also comes through in participatory assessments.

16. **... but an enduring solution would need to go beyond extra policing and strengthening of the law and justice system.** Apart from the direct social costs, particularly for women, the economic costs of crime have been enormous. Crime has been disruptive of economic activity (particularly detrimental to coffee production), has undermined investor confidence (leading to loss of production opportunities, such as, for the tourism industry) and has increased the cost of doing business. The ‘crime tax’ (security and theft cost) has amounted to 12-15% of turnover by recent estimates. While extra policing and strengthening of the law and justice system will help, a significant element of an enduring solution will lie in development itself, in particular through the creation of viable employment opportunities.

17. **Small and medium enterprises: Existing impediments to development of small and medium enterprises need to be removed to realize their potential for employment and income-earning opportunities in both the formal and informal sectors ...** In addition to the constraints imposed by deteriorating infrastructure and increasing crime, the private sector in general, and small and medium enterprises (SMEs) in particular, have been further hampered by a number of factors including: lack of access to affordable finance, legal restrictions, difficulties in accessing traditional land for commercial activities and the lack of an educated work force. The removal of these impediments will be critical for an alternative growth strategy.

18. **The agricultural sector: There is a case for greater diversification of the production of export crops and measures to address structural problems in the food crop sector.** While the cultivation of cash crops for an export market makes an important contribution to the livelihood of the rural population as well as the rural poor, the cultivators have faced declining terms of trade in recent years and remain vulnerable to periodic price shocks, suggesting the need for greater diversification. The development of the food crop sector, and the agricultural sector more generally, will also require measures to address a number of structural problems relating to limited access to markets and inputs, inadequate extension services, inadequate finance, and land tenure arrangements that inhibit agricultural investment.

19. **The challenge of implementing policies for restoring growth is more than just a matter of resources, although the resource environment has become more stringent in recent years, in part due to an increasing burden of debt servicing.** It is not that the problems and issues noted above have gone unnoticed by the government. Many of them are, for instance, noted in the government’s recent Medium Term Development Strategy for 2003-2007. What remains unclear, however, is whether there will be a sharp focus and decisive commitment that is needed to translate these noted concerns into policy actions that can be sustained over a period of time. An important concern is the productive utilization of resources. From this perspective, many of issues on the recent Public Expenditure Review and Rationalization (PERR) agenda – including civil service size and payroll reform; measures to restore the integrity of budget institutions and systems; improving provincial spending, budget management and accountability; and adjustment and prioritization of expenditures – are also part of a growth and poverty reduction agenda.

The challenge of service delivery

20. The discussion on the delivery of basic services is based on findings from a study of Public Expenditure and Service Delivery (referred to as the PESD study) that was undertaken as an integral part of the work for this Poverty Assessment.¹

21. **The PESD study focuses on the education sector though its findings have wider relevance ...** The problems that plague the education sector have close parallels in other sectors. The report presents some illustrative data for the health sector for which a limited amount of primary information was collected, but the study's inquiry into conditions promoting or impeding effective service delivery in education has broader relevance for other sectors in PNG, and beyond that for other countries too.

22. **Key findings ...** The education sector in PNG has had some notable achievements since independence, but there are significant problems related to school facilities and environment, school finances, teacher and student performance, and the administration of education.

School facilities

- School facilities are deficient in many respects (physical infrastructure, electricity, water, sanitation, access to other amenities and resources for teaching (textbooks for students, library, staff room).
- School closure and security issues are also a significant factor for many schools.
- Poverty and remoteness matter to school facilities, but not all the time. Similarly, agency type (church vs. government-operation) does not matter, but financial resources available to schools do make a difference.

School finances

- There are substantial gaps in financial data available at the school level reflecting limited accountability as well as low incentives for regular record keeping.
- Subsidies, fees and grants are the three main sources of revenue for schools, while teacher salaries are directly paid by the national government.
- However, grants are not a dependable source of revenue for the vast majority of schools.
- Subsidies are prone to the problems of uneven distribution, leakage (estimated at 16-29% for 2001), uncertainty and delays (estimated at about 3 months for the quarterly subsidies in 2001).
- There is considerable tolerance for non-payment of fees.
- There is no clear or consistent government policy on fees, best illustrated by the short-lived "free" education experiment during the election year of 2002.
- The experiment with "free" education in 2002 had some positive effects in terms of a large (4-fold) increase in subsidies at the schools, elimination of leakage, and reduction of delays.
- But it also exposed systemic problems related to the sustainability of the policy, confusion about national policy in a politicized environment, friction across different layers of government.

¹ There is a detailed PESD Report resulting from that work which should be read as a companion to this Report.

Teachers

- The effective supply of teachers is eroded by ghost teachers (estimated at 15% in 2002) and teacher absence (also estimated at 15% in 2002).
- Absence of teachers partly reflects poor incentives (e.g. delays in payment of teacher salaries), but greater parent and community participation significantly reduces teacher absence.
- Poor teacher motivation is also reflected in high teacher turnover and teacher shortages especially in poor or remote regions.

Students

- Parent and community participation and better school facilities improve student attendance, while teacher absence has a negative effect.
- Better school facilities also have a positive influence on student performance, as also do fees set by schools. The latter is partly indicative of a parental income effect on student performance, and partly of fees acting as a market-based accountability mechanism.

Education administration

- Provincial and district-level education administration fails to play an effective role, and the inspection system is inadequate.

Overall messages and policy implications

23. **These can be examined within the framework of client-provider-policymaker relationships ...** The analysis of effective delivery of basic services is a complex issue. For organizing the overall messages and policy implications emerging from this study, a simple framework of client-provider-policymaker inter-relationships can be utilized. According to this framework, the service delivery chain can be unbundled into the relationships between three sets of actors: the policymakers; the frontline providers of services; and the clients or citizens who are both the source of demand for services as well as their final destination as consumers. By this framework, relationships amongst the three sets of actors are important for understanding delivery of basic services.

(a) Client-provider relationship

24. **Parental participation and community involvement contributes to better service delivery.** The evidence summarized above indicates it does this by inducing lower teacher absence, lower leakage and higher student attendance.

25. **While there are impediments to the operation of the “market” link of accountability ...** The direct “market” link of accountability of schools (provider) to parents and students (client) is broken because of the system of subsidized education in PNG. Even setting aside the free education experiment, education in PNG – not unlike many other countries at a comparable stage of development – is heavily subsidized once publicly-paid teacher salaries are taken into account. The “market” link is further eroded by the absence of a clear policy on school and project fees, and frequent changes in that policy, resulting in an environment where roles, responsibilities and entitlements are often poorly defined and understood.

26. **... there is a role for the “market” link of accountability ...** There is some evidence on the parents’ willing to pay for education. For instance, only about 20% of the parents interviewed in 2002 (the year of the free education policy) said that the government should pay for the cost of

education; the rest (80%) thought the parents or parents and government together should bear the cost.

27. **... but the trade-off with equity would have to be directly faced ...** Evidence also shows that despite the subsidy, the income effects on primary enrolment are significant and positive. As also illustrated by the experience of 2002, enrolments did expand elastically to the substantially higher subsidies offered during that year. Thus, while there is evidence of willingness to pay for education on the part of parents, reductions in subsidy can be expected to have negative effects on enrolments. On the other hand, conditional transfer programs, like the Progresá in Mexico, are likely to defy successful implementation in PNG's context, where delivering subsidies to schools itself has proven to be extremely challenging.

28. **... There is a case for experimentation with greater flexibility in fee setting at the school level on a pilot basis (not for cost recovery but as an accountability mechanism) ...** While the subsidy element at least for basic education would need to be maintained in the interests of ensuring wider access to education by PNG's population, the policy on user fees could be liberalized, not so much as an instrument for cost-recovery but primarily as an accountability device. The liberalization could take the form of letting the schools (rather than the provincial or the national government) decide through the institutions of BOMs and PNCs how much fees to charge. There is evidence of the parents' willingness to pay for education which the schools and the local community are best positioned to harness. Some **regulation of maximum chargeable fees** will perhaps be necessary, the enforcement of which itself would be a challenge. However, the evidence on the tolerance of non-payment of fees suggests that there do exist some local limits on the exercise of monopoly power by schools, and the de facto trade-off between accountability and equity need not be as sharp as it seems. Overall, there is thus a case for experimentation with school-based liberalization of fee setting, while maintaining a high aggregate level of subsidies together with a mass information campaign on resources available at the school level (see below).

(b) Policymaker--provider relationship

29. **There is evidence that delivery of financial resources is worse under decentralized setting ...** The evidence from the experimental policy of 2002 indicated that a direct cash payment system – from the national Department of Education to the schools – works much better in preventing leakages and equally damaging delays. In 2002, the 3-4 times larger than the usual quantum of subsidy was delivered to schools with minimal leakage and reduced delays. The evidence also indicates that the PEAs and DEAs fail to play an effective role and the inspection system is inadequate.

30. **There is a case for direct cash-based subsidy system ...** Thus, with regards to subsidies there is a case for direct cash delivery to schools through bank deposits or checks. Other subsidiary reforms, such as subsidy payments on a 6-monthly rather than quarterly basis to reduce transaction costs, and a front-loading of the subsidy payments in view of the larger (and immediate) needs of schools at the beginning of the school year, may also be worth considering in this regard.

31. **... that can be allocated on a more progressive basis (without reducing the overall level of education subsidies for the primary sector that is likely to have a negative impact on enrolments)** Education subsidy policy in PNG has traditionally allowed for uniform per student subsidy rates across schools for given grades. The principle of uniformity has an element of built-in progressivity; the uniform amount translates into a higher proportion of per capita

incomes in poorer areas. However, there is some scope for introducing greater progressivity by allowing the policy to offer higher per student subsidy rates for schools located in poorer or more remote areas, that may also face higher unit costs for comparable levels of education services.

32. ... and a case for grants from government sources to be consolidated under subsidies ... For government grants, there seems to be a case for consolidating them under subsidies rather than operating them as a separate channel of financial transfers to schools. This could contribute to a simpler and more transparent system. At the provincial level in any case the evidence suggests that there is not much additional spending on education beyond the revenues budgeted for teacher salaries and education subsidies.

33. ... and better coordination of grants from donors ... The distribution of the donors' component, which accounts for about 70% of all non-government grants, primarily reflects placement decisions related to individual donor-supported projects. There is scope here for better coordination of donor projects with a view to achieving a more equitable distribution.

34. Significant cost-savings are possible through elimination of ghost teachers, but danger that the problem may reemerge ... With respect to ghost employees, there is an effort already underway to cleanse the payroll system. Important as this effort is, the challenge will be that once this cleansing is completed, the problem does not recur.

35. The scope for cost-savings through higher pupil-teacher ratios or a squeeze on teacher salary levels is limited (without affecting quality of services) ... This is in a context where teacher salaries have been declining in real terms in recent years, and average student-teacher ratios are on the high side (about 38 students per teacher).

36. There is no effective alternative to centralized payment of teacher salaries ... With regards to teacher absence and teacher performance more generally, payment of teacher salaries by the national government subverts accountability at the school level. There is little local authority (with the head teacher/BOM) to take disciplinary action against teachers (or against head teachers). However, given the problems associated with decentralized delivery of financial resources (illustrated plainly in the case of education subsidies), there may be no viable alternative to a centralized payment mechanism. There may be a need thus to look elsewhere for avenues to improve teacher performance.

37. ... but payment of teacher allowances needs to be improved to mitigate high turnover and shortages ... Based on the analysis in the study, a more promising approach may have to rely on improving teacher motivation and promoting stronger parental and community involvement. The former points to measures such as better provision of textbooks and teaching materials for students, reducing salary payment delays, fuller payment of allowances (and perhaps their consolidation under salaries as a means of ensuring fuller and more timely payment).

38. The inspection system needs to be better resourced, and there is a case for the provincial/district administrations to be more closely involved in this function.

(c) Client-policymaker relationship

39. **There is a need for consistent, more stable and clearly-communicated policy ...** An unstable policy environment – itself the product of an unstable political environment – can have a corrosive effect on short chain of accountability. For instance, during the “free’ education experiment, the lack of a clear policy on fees at times placed schools in an antagonistic position vis-à-vis the parents who wondered why they should pay any fees if their fees had already been paid by the government.

40. **... a role for information that can be linked to actions ...** Successful delivery of funds (if, for instance, accomplished through direct subsidy payments to schools) needs to be followed up by responsible utilization of funds at schools. The role of information can be potentially important here, as illustrated by the successful example of Uganda. Measures such as a mass information campaign by the central government on the transfer of funds to districts led to a large improvement in the receipt of funds at Ugandan schools. In the PNG context, the policy of direct subsidy payment to schools could be supplemented with an information campaign – through the print, electronic media (radio and TV) and mandated postings at school notice boards – on the amount of subsidy payment per student delivered to individual schools. This information could empower the local community not only in the setting of appropriate school fees (as discussed above) but also in monitoring the utilization of resources at schools.

41. **... but there are limits to the effectiveness of the long route of accountability under the current political system ...** There remain some serious constraints to the long chain of accountability (operating through the clients influencing policymakers who in turn influence providers) that are embedded in the political reality of unstable governments in PNG that are propped up by a complex system patronage of heterogeneous (mostly clan-based) interest groups. While there is an electoral reform process underway, including the introduction of a system of proportional representation, this reality is unlikely to change appreciably in the near future. **This reinforces the case for exploring some form of market link and strengthening the hand of the client.**

Poverty monitoring and evaluation

42. **The state of poverty data in PNG is weak from both a monitoring as well as an evaluation perspective...** Such a statement can be said to apply to both the income and non-income dimensions of poverty. Many different types of data are relevant to the monitoring and evaluation of poverty, including: data from surveys and censuses; administrative data; national accounts, macroeconomic and government finance data; and participatory/qualitative data.

43. **Survey-based data are probably the weakest element of the information base for national poverty monitoring and evaluation in PNG...** At the time of writing of this report, the 1996 DHS and NHS are still the most recent household surveys available. Into the eighth year since the last survey, over a period when the economy has undergone significant contraction, the need for a new household survey to assess and comprehend changes in household welfare can not be over-emphasized. Even for supporting production of **sub-national statistics** – whether done directly through a survey with a sufficiently large sample size, or indirectly through a Poverty Mapping/small-area estimation exercise – the revival of household survey-based data collection is very important.

44. **... case for an integrated survey.** From an evaluative and analytical perspective, collecting data on a broad range of variables *for the same set of households* (or alternatively, being able to link different surveys with each other) is of great importance. However, despite extended discussions on conducting an integrated household survey for PNG, progress towards implementation has remained elusive, and there is a pressing need now to resuscitate this initiative.

45. **There is no labor force survey in the country...** and hence there is no system of reliable or timely information on employment or wages. Looking ahead, such a survey ought to be undertaken, either as an independent activity or accommodated as a separate module within other household surveys like the DHS or the NHS.

46. **Possibilities for periodic facility-based surveys are also worth exploring ...** Facility-based surveys, such as the PESD, are a useful supplement to household surveys in examining issues relating to the delivery of basic services to the poor and to the population at large. Sometimes, such surveys can also be usefully integrated with household surveys, as in the case of the recent Lao Expenditure and Consumption Survey, and such possibilities are also worth exploring in the PNG context.

47. If there is a trade-off between frequency and comprehensiveness of survey-based data collection (on account of affordability or managerial capacity), **the use of relatively quick monitoring tools such as the Core Welfare Indicators Questionnaire (CWIQ) ought to be considered** as a potential alternative for frequent monitoring of a limited number of indicators. CWIQs are not a substitute for regular household surveys, but they can be undertaken more frequently (even annually) while the regular surveys can be undertaken on a less frequent basis (for instance, every 5 years).

48. **Data from other non-survey based sources** – i.e. census, administrative data from line agencies, national accounts/public finance data, participatory assessments – are important in their own right and are a useful complement to survey-based information, but they are never an adequate substitute for survey data. Some specific issues in relation to non-survey data in PNG are notable.

- With regards to the 2000 National Census, the remaining analysis and dissemination work needs to be expedited and completed. The revision of the boundaries of urban areas is also long due for revision.
- There is an important need to link administrative data with census and survey-based data. Combined with mapping techniques, such data can then be an important tool for intra- and inter-sectoral resource allocation and the targeting of poverty reduction interventions.
- The weighting diagram for the Consumer Price Index (CPI) – currently based on a 1975-76 household expenditure survey of wage earner households in urban areas – is in need of urgent updating. There is also a case for developing a rural CPI.
- Efforts to improve provincial budget information such as those by the National Economic and Fiscal Commission need to be strengthened and institutionalized.
- There is a significant role for participatory/qualitative assessments of poverty undertaken on a periodic basis, and these should ideally be integrated into the overall monitoring and evaluation system.

49. The ability of information systems to deliver benefits to stakeholders is ultimately critical to their sustainability. Thus, promotion of the both **data dissemination and data use** is important, which in turn will need efforts on both the supply and the demand side including measures to strengthen capacity of statistical agencies, training on policy uses of data, fostering active links between data gatherers and current or potential data users, and aligning the poverty monitoring system directly with the budget cycle.

Table: PA data at a glance

Poverty, inequality and mean consumption				
Year	Mean per capita consumption (1993 PPP USD per month)	National poverty line		Gini coefficient
		Headcount index (%)	Number of poor ('000)	
1996	93.15	37.5	1,730	0.48
1997	89.00	38.4	1,819	0.47
1998	83.47	42.9	2,085	0.48
1999	78.93	45.2	2,259	0.48
2000	72.18	48.5	2,489	0.48
2001	66.71	51.8	2,731	0.48
2002	64.22	53.5	2,897	0.47
2003	64.34	53.5	2,972	0.47
2004	64.21	54.0	3,083	0.47
2005	64.33	53.8	3,154	0.48

Education			
	2000		
	Total	Male	Female
% of population 10 and above...			
...who are literate	56.2	61.2	50.9
...who have ever been to school	56.3	61.7	50.6
...who have completed grade 6	38.3	42.9	33.4

Demographic and health Indicators				
Demographic indicators	2000 Census	Health indicators (around 2001)	Level	
Infant mortality rate (per '000)	Total	64	% of deliveries in health facilities	38
	Male	67	% of pregnant women receiving Tetanus Toxoid vaccination	63
	Female	61	% of women getting at least one antenatal visit	58
Child mortality rate (per '000)	Total	25	% of antenatal care coverage	67
	Male	27	% of supervised deliveries	44
	Female	23	% of deliveries rooms with running water and a sink	51
Under 5 mortality rate (per '000)	Total	87	% of children, < 1 year, receiving 3rd dose Triple Antigen vaccination	55
	Male	92	% of children getting measles vaccination	47
	Female	82	# of outpatient visits per capita	1.53
Life expectancy at birth (years)	Total	54.1		
	Male	53.7		
	Female	54.8		
Life expectancy at age 25	Total	37.9		
	Male	37.7		
	Female	38.1		
Crude death rate	Total	12		

The rural-urban gap			
Indicator	Year	Rural	Urban
Incidence of poverty (%)	1996	41.3	16.1
Never attended school (% of population)	1996	50.5	24.4
% of households with electricity	1996	3.2	59.2
% of households with piped water at home or in neighborhood	1996	8.5	71.7
Infant mortality rate (per '000)	2000	69	29
Life expectancy at birth (years)	2000	53.0	59.6
Health staff per 100,000 population	2000	166	574

Table: PA data at a glance

Rank (1= least developed)	World Bank poverty mapping		Rank (1= least developed)	District Development Index (DDI)	
	District	Province		District	Province
1	Middle Fly	Western	1	Telefomin	Sandaun
2	Telefomin	Sandaun	2	Nuku	Sandaun
3	Vanimo-Green River	Sandaun	3	Vanimo-Green River	Sandaun
4	Nuku	Sandaun	4	Aitape-Lumi	Sandaun
5	Rai Coast	Madang	5	Middle Ramu	Madang
6	Aitape-Lumi	Sandaun	6	Rai Coast	Madang
7	Central Bougainville	Bougainville	7	Menyamy	Morobe
8	South Fly	Western	8	Obura-Wonenara	Eastern Highlands
9	Middle Ramu	Madang	9	Usino Bundi	Madang
10	Jimi	Western H'lands	10	Kompam	Enga
11	Goilala	Central	11	Komo-Margarima	Southern Highlands
12	Bogia	Madang	12	Ambunti-Drekikir	East Sepik
13	Koroba-Kopiago	Southern H'lands	13	Goilala	Central
14	Obura-Wonenara	Eastern H'lands	14	Koroba- Lake Kopiago	Southern Highlands
15	Kagua-Erave	Southern H'lands	15	Jimi	West Highlands
16	Ambunti-Drekikir	East Sepik	16	Bogia	Madang
17	Kabwum	Morobe	17	Kagua-Erave	Southern Highlands
18	Tambul-Nebilyer	Western H'lands	18	Kerema	Gulf
19	Karimui-Nomane	Simbu	19	Kandep	Enga
20	Abau	Central	20	Angoram	East Sepik

PESD data

Total population (2000)	5.2 million
School-age population (2000)	1.5 million
Growth rate of school-age population	3 % per annum
Government expenditure on education as % of GDP (avg. 2000-2003)	5%
Government expenditure on education as % national budget (avg. 2000-2003)	15%
Relative contribution to overall spending education of ...	
... government	70%
... donors	20%
... parents	10%

Size of the education sector

2002					
Number of students:		Number of teachers:		Number of schools:	
Total	1,014,779	Total	32,022	Total	8,284
Primary education	890,680	Primary education	26,731	Primary education	7,916
Size of primary education sector (up to Grade 8)					
% of students			87%		
% of schools			93%		
% of teachers			83%		
% of national education budget			60%		

Table: PA data at a glance

School facilities					
	All	<i>Poverty Status</i>		<i>Remoteness</i>	
		Poor	Not Poor	Remote	Accessible
Proportion of classrooms					
... which need to be completely rebuilt?	0.33	0.32	0.34	0.36	0.29
... with a roof that leaks when it rains?	0.37	0.37	0.36	0.40	0.33
... with electricity that works?	0.07	0.04	0.12	0.01	0.13
Usable water tank (0/1)	0.55	0.55	0.54	0.41	0.70
Toilet facilities ...					
... need at least 1 for boys(0/1)	0.42	0.44	0.40	0.34	0.51
... need at least 1 for girls(0/1)	0.49	0.49	0.48	0.42	0.56
Time to nearest ...(hours)					
... High school or Secondary school	3.93	4.79	2.64	5.67	2.18
... Bank	4.51	5.17	3.50	7.31	1.73
Total number of days the school closed in ...					
... 2001	14.65	16.30	12.27	16.69	12.32
Resource availability ... (0/1)					
... sufficient textbooks for student use	0.23	0.24	0.21	0.25	0.21
... enough desks for all students	0.52	0.54	0.49	0.54	0.50

Subsidy leakage		
	2001	2002
What the school should have received (Kina/student):		
Budget disbursement b/		90
<i>Estimate I</i>	25	
<i>Estimate II</i>	29	
What the school actually received (Kina/student):	21	84
Leakage rate (%), based on:		
Budget disbursement b/		7
<i>Estimate I</i>	16	
<i>Estimate II</i>	29	

Delays in receiving subsidies								
	Quarter 1		Quarter 2		Quarter 3		Quarter 4	
	Schools receiving positive subsidies (%)	Total delay (weeks)	Schools receiving positive subsidies (%)	Total delay (weeks)	Schools receiving positive subsidies (%)	Total delay (weeks)	Schools receiving positive subsidies (%)	Total delay (weeks)
2001	82	9	58	14	36	14	37	15
2002	97	5	73	3				

"Ghost" teachers				
	Number of teachers per school in payroll (1)	Number of teachers per school reported (2)	Net "Ghost" teachers per school (1) - (2)	Net "Ghost" teacher rate %
All schools	7.5	6.4	1.1	14.7

Table: PA data at a glance

Teacher absence					
	All teachers	Male teachers	Female teachers		
% of teachers absent on the day of the school visit	15.1	16.3	13.3		
Student attendance rate (percent)					
	Community Schools		Primary Schools		All Schools
	Grade 1&2	Grade 3-6	Grade 3-6	Grade7-8	Grade1-8
All students	79.5	88.4	83.8	83.6	85.1
Male students	77.8	88.0	83.0	82.7	84.8
Female students	84.5	89.5	86.0	85.1	85.6
Inspector visits					
	Year				
	2000	2001	2002 (to date)		
% of schools with no inspector visits	38.3	35.7	69.1		
Parents' perception of fees					
% of parents	All schools	Schools in poor areas	Schools in remote areas		
...who think ___ should pay for the cost of education					
...government	21	19	20		
...parents	22	22	20		
...both	57	59	60		
...who found school or project fees too high	41	44	46		
...were able to pay the fees set by the school	64	62	56		
Consequence of not paying school fees (% of schools)					
	Exempted	Allowed to pay according to ability	Must leave school	Not allowed to go to next grade	Other
Response by					
... head teacher	10	77	5	1	7
... grade5 teacher	6	67	10	0	18
Board of management					
Average number of meetings in 2001					3.8
Average number of members					8.7
Chair of BOM is the parent of a student (% of schools)					84
Parent participation					
Percent of schools with a PNC					95
Average number of times PNC met in 2001					3
Percent of schools where parents collect assessment reports					57
Percent of parents in those schools who collect reports					65
Percent of parents who attend school meetings when called					57
Community partnership <i>Percent of schools where ...</i>					
... children go out to learn in community					35
... community members help develop school programs/activities					60
... teachers organise activities for community members					50
... community members teach cultural activities					27
... school uses village land for agricultural classes					45
... school is used for community meetings					63
... school is used for adult classes					17
... school use for community sports events					71

1. STATE OF POVERTY IN PNG

As our unacceptable income levels and social indicators highlight, the real cost of failed policies is poverty and human development.

[Sinai Brown, Minister for National Planning and Monitoring, GoPNG, *The Medium Term Development Strategy: 2003-2007*, March 2004]

1.1 A number of recent assessments have described the social and economic situation in Papua New Guinea in stark terms.² The conditions these assessments purportedly refer to have also influenced donor perceptions and behavior. Following the civil strife in Solomon Islands, and arguably concerned with the possible eruption of a similar situation in PNG, the Australian government recently developed its Enhanced Cooperation Program (ECP) “to strengthen its engagement in Papua New Guinea”; the implementation of the ECP is expected to start later this year.³ And PNG is one of the 13 focus countries for the World Bank initiative on Low Income Countries Under Stress (LICUS) aimed at a set of countries characterized by weak policies, institutions and governance.

1.2 While concerns with the PNG situation are manifold, an overarching concern relates to the prospects for protecting the living standards of the population, especially the relatively poor population, in the short and medium term. In this setting, the first part of this report assesses the state of poverty in the country, interpreting poverty broadly to encompass both the income and non-income dimensions (see Box 1.1). This broader notion of poverty is consistent with the government’s own conception of poverty as reflected in its recent Poverty Reduction Strategy.⁴

² PNG has been variously described as a country “on the brink”, “a dysfunctional state”, a nation in the throes of “a serious social and economic crisis”, with some raising the ultimate question whether the country is “viable”. See for instance, Baxter (2001), Hughes (2002), Windybank and Manning (2003), Gosarevski, Hughes and Windybank (2004).

³ Pacific and Assistance Division, Commonwealth Treasury (2004).

⁴ DNPRD (2003), *PNG Poverty Reduction Strategy 2003-2020*.

Box 1.1: Is poverty a problem?

Despite a large volume of quantitative and qualitative work on various aspects of poverty in Papua New Guinea (and the Pacific more generally) and despite frequent reference to the goal of poverty reduction in official documents and political discourse, the question is still raised at times whether poverty really is a problem in the country. At its root, this is less a question about whether poverty is a problem, but more a matter of acknowledging its multi-dimensional nature, for those who question poverty as a relevant problem are most often questioning a particular narrow view of it rather than the problem itself.

The view taken in this report is that both the income and non-income dimensions are important. The importance of both dimensions also comes through in participatory consultations. For instance, a Participatory Poverty Assessment conducted by the Department of National Planning and Rural Development in 2001 with support from the Asian Development Bank noted:

During the consultations, community residents and leaders, church leaders, and government, non-government, and private sector were asked to define poverty. They said they believe poverty exists in both rural and urban areas of PNG when people have too little

- jobs and cash,
- land,
- education,
- services such as health care and water supply, and
- transport and roads.

In addition, people cited the breakdown of the family as a contributing to poverty through divorce, children's use of drugs and criminal activity. [ADB, 2002]

1.3 A useful starting point for an account of the state of poverty are analyses based on the PNG National Household Survey (NHS) of 1996 and the Demographic and Health Survey (DHS) of the same year. Despite their being dated, they remain a useful starting point for a telling reason: there is not much new survey-based information available since then, with the notable exception of the Census of year 2000, which does provide important new information albeit on a limited range of variables.⁵ This account therefore begins with what is known based on the 1996 surveys, but supplements that with information and analyses based on the 2000 Census and other sources, including administrative data from line agencies, a participatory assessment in 2001, and a number of studies conducted by government institutions, donor agencies and the research community. In particular, this account augments the information from the last World Bank report on poverty in PNG (World Bank, 2000) in two directions: it updates information over time, and extends it over space by providing greater regional disaggregation whenever possible.

⁵ Data issues are further discussed in Chapter 4 in the context of informational needs for poverty monitoring and evaluation.

THE INCOME DIMENSION

1.4 The last World Bank report on poverty in Papua New Guinea utilized data from the PNG National Household Survey (NHS) of 1996 to construct a profile of income⁶ poverty, the key points of which could be summarized as below.

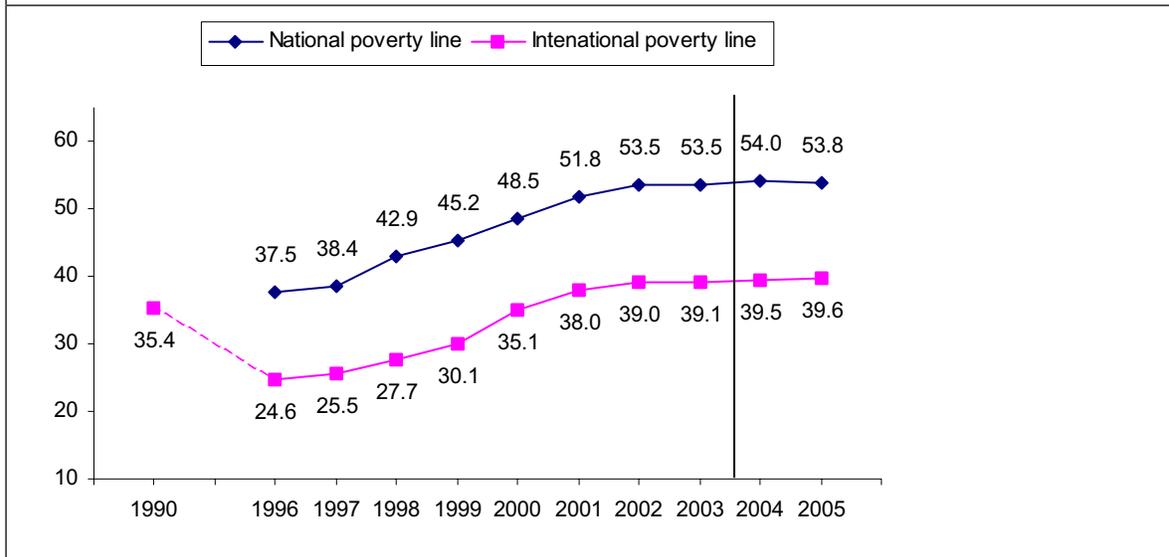
- Using a poverty line that allows for 2200 calories per adult equivalent per day and an allowance for basic non-food expenditure, 37.5% of PNG's population (or about 1.75 million persons in 1996) were deemed to be poor.
- 93 percent of the poor live in rural areas. The proportion living in poverty in rural areas was 41%, while that in urban areas was 16%.
- Of the 1.73 million poor in the country, the Highlands, amongst the four main regions in PNG, accounted for 0.67 million (38%), Momase for 0.62 million (36%), Southern for 0.23 million (13%), and Islands for 0.16 million (9%), while the National Capital District (NCD) accounted for 0.07 million (4%).
- Relative to the non-poor, the poor have lower literacy rates, and depend heavily on the agriculture sector for their livelihood. Going by the main income source of the household head, agriculture accounts for about 62% of the poor (43% of this in tree-crop agriculture); for about 17%, the household heads earn no cash income at all and are mainly engaged in subsistence agriculture. Thus, for about 80 % of the poor, agriculture is the mainstay of their livelihood.
- Poverty rates are lowest for the small minority of households with wage jobs (in the public or private sector) or those engaged in formal business.
- PNG also has a high level of inequality; its Gini index of per capita consumption of about 0.47 is amongst the highest in the East Asia region (World Bank, 2004a).

1.5 While there is no recent household survey on which more up-to-date poverty estimates can be directly based, it is possible to make projections of poverty levels using data on the rate and sectoral pattern of output and employment growth since 1996 in combination with the information on the sectoral profile of poverty derived from the last survey. Figure 1.1 presents these poverty projections for the years 1996-2003 and forecasts for the years 2004-05. The methodology for poverty projections is described in Box 1.2.

1.6 The projections indicate that poverty levels have increased alarmingly in recent years, and are unlikely to climb down in the immediate future. Using the national poverty line referred to above, the proportion of poor is estimated to have increased from 37.5% in 1996 to about 54% by 2003; the trends are no different for the international poverty line of "\$1/day", using which the incidence of poverty is estimated to have risen from about 25% to just under 40%.

⁶ Strictly speaking, the profile is based on consumption rather than income as a measure of welfare. However, for convenience, we continue to refer to it as income poverty.

Figure 1.1: Percentage of population below the poverty line: projections and forecasts, 1990-2005



Note: The national poverty line corresponds to a nutritional norm of 2200 calories per adult equivalent and also allows for basic nonfood expenditure (World Bank, 2000). The international poverty line is the “dollar-a-day” line, strictly a poverty line of USD 32.74 per person per month at 1993 PPP dollars (World Bank, 2004a).
Source: World Bank (2004a), and staff calculations.

1.7 Table 1.1 shows poverty measures other than the headcount index and also reports average consumption levels and the number of poor. Measures of the depth and severity of poverty confirm what is shown by the headcount index. The severity of poverty is projected to have doubled between 1996 and 2003 at the national poverty line, and increase is even greater for the “\$1/day” line.

1.8 This is in sharp contrast to trends in the region. Thus, while the East Asia and Pacific (EAP) region as a whole made rapid strides in poverty reduction over the 1990s, the increase in poverty levels in PNG has considerably worsened its relative position. From about a 20% higher level relative to the EAP average in 1990, poverty incidence in PNG is projected to have increased to nearly four times the EAP average by 2003 (Figure 1.2).

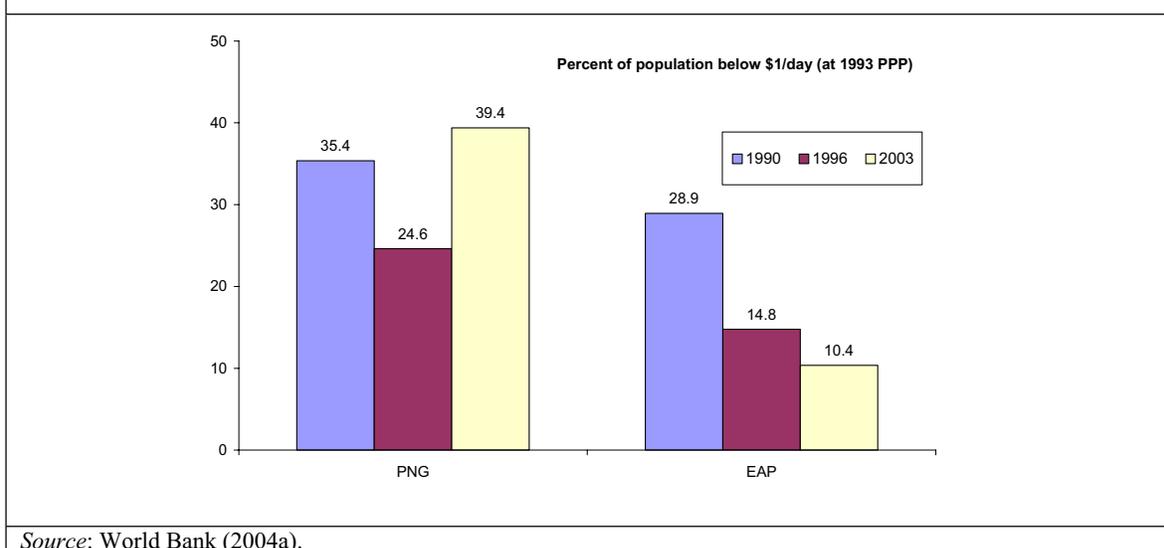
Table 1.1: Poverty projections, 1996-2005

National poverty line						
Year	Mean per capita consumption (1993 PPP USD per month)	Headcount index (%)	Poverty gap index (%)	Squared poverty gap index (%)	Number of poor (thousands)	Gini coefficient
1996	93.15	37.5	13.8	6.7	1,730	0.48
1997	89.00	38.4	14.3	6.9	1,819	0.47
1998	83.47	42.9	16.1	8.0	2,085	0.48
1999	78.93	45.2	17.7	9.0	2,259	0.48
2000	72.18	48.5	20.0	10.5	2,489	0.48
2001	66.71	51.8	22.5	12.2	2,731	0.48
2002	64.22	53.5	23.3	12.8	2,897	0.47
2003	64.34	53.5	23.3	12.8	2,972	0.47
2004	64.21	54.0	23.4	12.8	3,083	0.47
2005	64.33	53.8	23.4	12.8	3,154	0.48

International poverty line						
Year	Mean per capita consumption (1993 PPP USD per month)	Headcount index (%)	Poverty gap index (%)	Squared poverty gap index (%)	Number of poor (thousands)	Gini coefficient
1996	93.15	24.6	7.3	3.2	1,135	0.48
1997	89.00	25.5	7.6	3.3	1,209	0.47
1998	83.47	27.7	8.9	4.0	1,350	0.48
1999	78.93	30.1	10.1	4.6	1,504	0.48
2000	72.18	35.1	11.9	5.6	1,799	0.48
2001	66.71	38.0	13.9	6.7	2,000	0.48
2002	64.22	39.0	14.5	7.1	2,111	0.47
2003	64.34	39.1	14.5	7.1	2,173	0.47
2004	64.21	39.5	14.5	7.2	2,253	0.47
2005	64.33	39.6	14.5	7.2	2,322	0.48

Note: The national and international poverty lines are as described in the Notes to Figure 1.1.
Source: World Bank (2004a), and staff calculations.

Figure 1.2: Poverty in PNG relative to other countries in East Asia and the Pacific, 2003



Box 1.2: Projecting poverty from a household survey

The last nationally representative household survey for PNG was conducted in 1996, so we use available information on the sectoral pattern of growth since then (allowing for intersectoral mobility) to generate annual projections of household consumption to 2003, which are then used to generate poverty and inequality statistics reported in Table 1.1. The projections were carried out using PovStat program. Further information on the program can be found in Datt and Walker (2003), but the key details of the implementation for PNG are described below.

While a mineral/non-mineral sector breakdown of GDP is readily available in the national accounts, the 1996 NHS data do not directly identify these sectors amongst household income sources. We instead use the survey data to identify what could be termed the ‘formal wage sector’, which acts as our proxy for the mineral sector. This sector includes all those individuals who reported earning any income from private sector wage employment, and a small category of individuals involved in ‘other business’. The formal wage sector, thus defined, accounts for about 10% of the population according to the 1996 NHS data. This is of course significantly larger than the employment share of mineral sector per se, and applying mineral sector growth rates to this broadly defined formal wage sector is thus likely to overstate the importance of mineral sector for poverty projections. This is partly offset by the indirect effect of mining revenues on growth and poverty through public spending that is not directly captured in the projections. Overall, the projections are more likely to be an upper bound on the poverty impact of mineral sector growth.

A household’s per capita consumption is assumed to grow (or decline) in accordance with the primary sector of employment of each of its working members. For instance, if one of the three working members of a household is employed in the mineral sector, the mineral sector per capita income growth rate is applied to one-third of the household’s per capita consumption, while the non-mineral sector growth rate is applied to the remaining two-thirds.

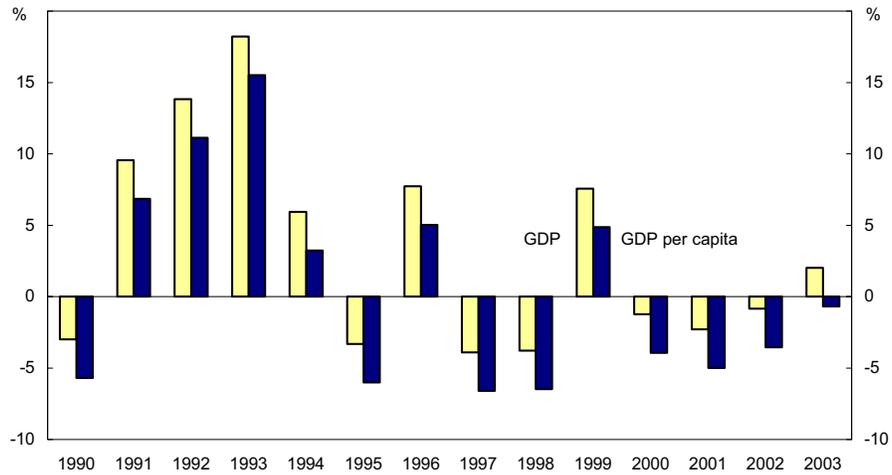
The implicit per capita income growth rates for each sector are based on official data on sectoral output and employment. Historical growth figures for GDP originating in the mineral and non-mineral sectors are taken from the 2004 Budget. Employment growth rates for both sectors are based on Bank of PNG’s *Quarterly Economic Bulletin* (QEB). The employment figures are normalized so that the weighted average of employment growth rates across sectors is equal to the population growth rate of 2.7% per annum. The rationale for this is that employment growth rates are intended to capture changes in the *population dependent on a sector*, rather than just the number employed in the sector.

The implied per capita income growth rates are then applied to the per capita consumption of each household according to its sector weights. Thus, each household’s consumption is effectively increased/decreased by the per capita income growth of its sector(s) of employment. Two final adjustments are made to the projected levels of household consumption. First, the consumption estimates are scale up or down to account for changes in the terms of trade implied by the growth in the GDP deflator relative to the CPI over the period; during 1996-2002 the GDP deflator rose by 68% while the CPI increased by 92%. Second, consumption estimates are also adjusted for changes in the relative price of food, since food is accorded a lower weight in the CPI (61%) than in the poverty line bundle (66%).

Source: Datt and Walker (2004).

1.9 **Growth failure.** The key factor underlying the increase in poverty has been the economic contraction in PNG. GDP growth rate plummeted since the mid-1990s and still has not convincingly recovered. The 2003 positive growth has been described as more a matter of “good luck than good management” – a combination of good weather and better prices for exports (Chand, 2004). Prior to that, the economy has been contracting for nearly a decade, and together with a population growth of 2.7% per years, in per capita terms the last decade has been a period of massive growth failure (Figure 1.3).

Figure 1.3: GDP Growth and Per Capita GDP Growth, Constant Prices, 1990 to 2003



Source: Quarterly Economic Bulletin, December 2003; Budget Papers 2004.

NON-INCOME DIMENSIONS

Education

1.10 The 1996 NHS and 1996 DHS highlighted the following key points about the education profile.

- At the national level, 52% of adults in PNG were literate in 1996, representing 61% of men and 43% of women.
- Regionally, these rates varied from a high of nearly 86% in NCD to a low of 35% in the Highlands; the rates for Islands, Southern and Momase regions were 78%, 59% and 56% respectively. The gender gap between male and female literacy tended to follow a similar regional distribution, being higher in regions with lower literacy levels.
- Enrolment rates were also relatively low: in 1996, 51% of children of target age (8-13 years) attended primary school (grades 1-6), and 17.1% in the target age (14-17 years) attended secondary school (grades 7-10).⁷
- About 42% of all male Papua New Guineans and 50% of all females (aged 5 and above) had never attended school (Table 1.2).

⁷ A major restructuring of the PNG education system has been taking place as part of the education reforms since 1993, under which the elementary component consists of Prep, Grades 1-2, the primary component comprises Grades 3-8, while the secondary component comprises Grades 9-12 (DOE, 2002b).

- The relatively poor have significantly worse levels of educational attainment. For instance, the proportion of 15-29 year olds completing grade 6 amongst the bottom 40% of the population is half of that amongst the top 20% (Table 1.2).
- Both the low levels of education attainment and the gender disparity in attainments are driven home by a telling piece of statistics from the 1996 DHS: for population aged 5 and above, the median years of schooling for males were 2.9, and *zero* for females (Table 1.2).

Education level of population age 5 and over			Proportion of 15-19 year olds who have completed each grade			
Region	% with no education					
	Male	Female				
Southern Highlands	25.8	31.8				
Momase	57.3	67.5				
Islands	39.0	49.6				
PNG	41.5	50.2				
Median yrs. of schooling						
Male	Female					
Southern Highlands	6.0	4.4				
Momase	0.0	0.0				
Islands	3.3	1.1				
PNG	2.9	0.0				
Source: www.worldbank.org/research/projects/edattain/edattain.htm ; NSO (1997), <i>Demographic and Health Survey 1996</i> .						

1.11 There is limited evidence of improvement since 1996. A comparison of 1996 NHS/DHS data with the 2000 Census data (shown in Table 1.2) presents a mixed and confounding picture. There seems to be a modest improvement in the proportion of those completing primary education. However, the literacy rate and the proportion of those who ever attended school seem to move in opposite directions. Literacy rate apparently indicates a significant improvement (from 51% in 1996 to 56% in 2000), while the proportion who ever attended schools indicates a significant decline (from about 64% in 1996 to 56% in 2000).⁸ This points to potential comparability issues between the NHS/DHS and the census data. Overall, it is difficult to interpret this evidence as indicative of anything more than a modest progress in education outcomes during 1996-2000.

⁸ With regards to the latter, the estimates for 1996 from the NHS and DHS are comparable; thus, a similar decline is indicated for either source in Table 1.3.

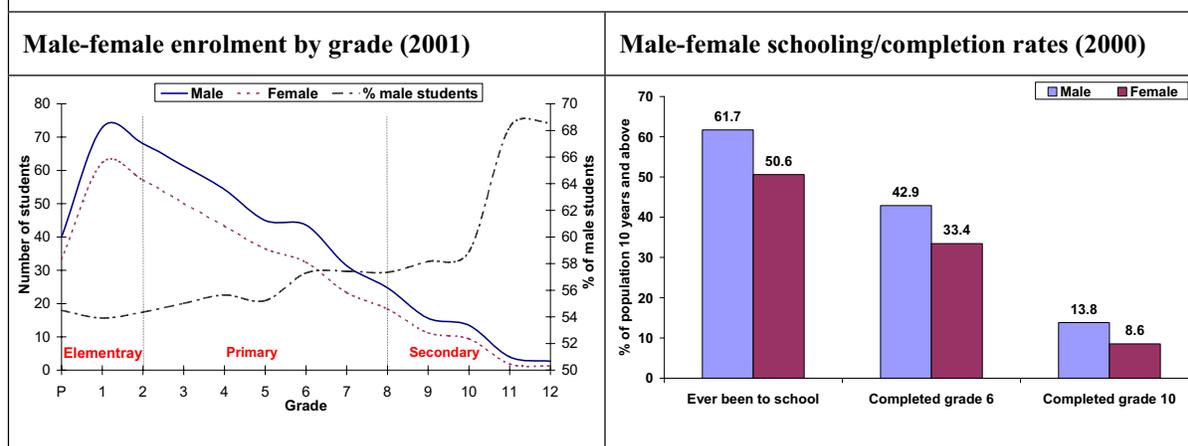
Table 1.3: Progress in education, 1996-2000

		Total		Male		Female	
		1996	2000	1996	2000	1996	2000
% of population 10 and above...							
...who are literate	(NHS)	50.5	56.2	57.3	61.2	43.1	50.9
...who have ever been to school	(NHS)	64.2	56.3	71.7	61.7	56.1	50.6
	(DHS)	62.2		67.5		56.6	
...who have completed grade 6	(NHS)	36.9	38.3	41.7	42.9	31.8	33.4

Note: The source of 1996 data is noted in parenthesis; all 2000 data are from the 2000 National Census.
Source: NSO (2002), *Community Profile System: 2000 National Census*; calculations based on 1996 DHS and 1996 NHS data.

1.12 Access, retention and quality remain the main policy objectives as well as challenges for the education sector in PNG. The problem of retention of students in higher grades is illustrated by Figure 1.4. Starting with 135 thousand students enrolled in grade 1, the number plummets to 75 thousand in grade 6, 43 thousand in grade 8, 23 thousand in grade 10 and less than 4 thousand in grade 12. The problem of retaining female students in higher grades is more severe than male students. Data from the 2000 census indicate a similar picture of lower grade 6 and grade 10 completion rates for female relative to male population.

Figure 1.4: Access and retention, by gender



Source: NDOE. 2001b. *Education Statistics of Papua New Guinea*; NSO: 2002 Papua New Guinea Census.

Health

1.13 Based on the 1996 DHS, the 1996 NHS, 2000 Census and administrative data, the following elements of the health profile are notable.

- Relative to the East Asia and the Pacific (EAP) region, infant and under-5 mortality rates in PNG are high: 64 and 87 per 1000 live births respectively in year 2000 as

compared with about half those levels for EAP (43 and 33 per thousand respectively in 2001).⁹

- Life expectancy is relatively low at 54 years in 2000, relative to nearly 70 years in EAP in 2001.¹⁰ The expectancy of life improves with age but not by much. The average person at age 25 could expect to live up to the age of 63, still well below the life expectancy *at birth* for the region as a whole.
- The 1996 PNG NHS found high levels of stunting (43%) amongst children under five. Malnutrition levels are considerably higher for the poor relative to the rich (Table 1.4).
- More than one-sixth of the population consumed less than the amount required to meet the minimum daily caloric requirement (1996 NHS).
- Perinatal, maternal, nutritional and communicable diseases account for most of the disease burden in the country (59%), followed by non-communicable diseases (30%), and accidents and injuries (11%). Pneumonia causes most deaths in children, while malaria remains an important contributor to morbidity and mortality (especially in coastal areas), accounting for the highest share of disability-adjusted life years.¹¹

Table 1.4: Progress in health in PNG					
Demographic indicators, 1980-2000			Stunting and wasting by level of living, 1996		
Index		1980 Census	1996 DHS	2000 Census	
Infant mortality rate (per '000)	Total	72	73	64	
	Male	78	NA	67	
	Female	66	NA	61	
Child mortality rate (per '000)	Total	42	24	25	
	Male	43	NA	27	
	Female	41	NA	23	
Under 5 mortality rate (per '000)	Total	111	95	87	
	Male	118	NA	92	
	Female	104	NA	82	
Life expectancy at birth (years)	Total	49.6	54.0	54.1	
	Male	48.8	54.6	53.7	
	Female	50.7	53.5	54.8	
Life expectancy at age 25 (years)	Total	34.6	NA	37.9	
	Male	34.2	NA	37.7	
	Female	35.1	NA	38.1	
Crude death rate (per '000)	Total	13	-	12	

Note: The source of 1996 data is noted in parenthesis; all 2000 data are from the 2000 National Census. Child mortality rate is defined as the probability of dying between age 1 and 4. Stunting and wasting are expressed as percentages of children aged 0-5.

Source: NSO (2003), *Recent Fertility and Mortality Indices and Trends in Papua New Guinea: 2000 Census*;

⁹ Table 1.4, and UNDP (2003), *Human Development Report 2003*.

¹⁰ Table 1.4, and UNDP (2003), *Human Development Report 2003*.

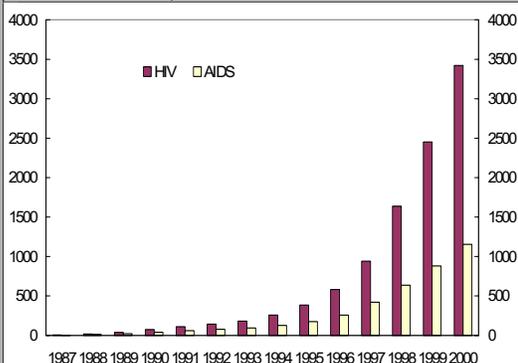
¹¹ See Izard and Dugue (2003).

Box 1.3: The challenge of HIV/AIDS in PNG

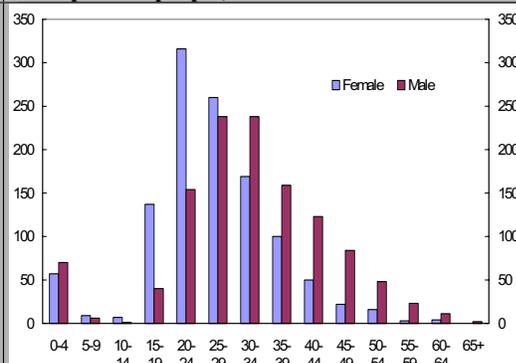
The first case of HIV in PNG was reported in Port Moresby in 1987. The disease spread to Lae and other urban areas, continuing along major highways to smaller towns and villages in rural areas. It has now reached generalized epidemic levels in PNG, the highest level of disease epidemic by WHO standards, and is firmly established in the local population (see Figure).

Progression of HIV/AIDS since 1987

Cumulative reported cases of HIV and AIDS, 1987-2000



Age and sex distribution of reported HIV-positive people, 1987 to June 2001



Source: AusAID (2002)

There were 4,075 reported cases of HIV, and 249 reported deaths from AIDS, as of June 2001. The number of new HIV infections detected in the first three quarters of 2003 reached 1643, compared to 1767 for the entire year of 2002. The lack of widespread reporting hampers accurate measurement of the spread of the disease and the characteristics of sufferers. Estimates of HIV prevalence vary, but the latest estimates suggest that about 50,000 people are currently infected, with lower and upper bounds of 25,000 and 75,000. Breakdowns of the reported cases show that the disease is most common among those aged 15 to 34, with similar incidence for men and women. The category with the largest number of reported cases is women aged 20 to 24. Between 3 and 4% of 15 to 49-year-olds in Port Moresby are believed to be infected, along with over 2% in other urban areas, and more than 1% in rural areas. The majority of infections (70%) occur in rural areas despite their lower prevalence rates; 15% in Port Moresby and the remaining 15% in other urban areas. 70% of detected cases come from Port Moresby; HIV testing in rural areas is still very limited. Consequently, a large number of sufferers are likely to be unaware of their HIV-positive status.

The general health situation in PNG is exacerbating the problem. There is a high incidence of sexually transmitted infections (STIs), especially among sex workers, but also in the general population. People infected with STIs have an increased likelihood of contracting or passing on HIV through sexual contact. Poor health and hygiene in general can also increase the risks of transmission. Finally, there is little awareness in the community about the transmission of HIV and the need to use condoms.

Economic conditions also play a role in the spread of HIV. Poverty and a lack of jobs in urban areas make prostitution an attractive source of income for young women, and sometimes also for men. A study of young unemployed urban women found that almost half claimed using sex work to support themselves. The problem may intensify in the future if urban populations continue to grow faster than the number of formal sector jobs, leading to increased unemployment. Higher unemployment may also contribute to increased sexual violence, further transmitting the disease.

Source: AusAID (2002) and World Bank (2004b)

- A generalized HIV epidemic is underway that is likely to increase the burden of disease in adults (see Box 1.3).
- According to the 1996 DHS, there were 84 aid posts per 100,000 inhabitants. However, only 39% of facilities were in good condition and only about 70% of them were operational.

1.14 Table 1.4 indicates some improvement in demographic indicators between 1980 and 2000, though progress has been slow especially in the case of indicators like life expectancy and infant mortality. There are further signs of recent deterioration in health services, as evidenced by the decline in outpatient visits per capita, and in several performance indicators related to maternal and child health (Table 1.5).

Indicators	Year	Level	Year	Level
% of deliveries in health facilities	1995	42	2001	38
% of pregnant women receiving Tetanus Toxoid vaccination	1995	62	2001	63
% of women getting at least one antenatal visit	1995	68	2001	58
% of antenatal care coverage	1991	80	2000	67
% of supervised deliveries	1991	52	2000	44
% of deliveries rooms with running water and a sink	2000	61	2002	51
% of children, < 1 year, receiving 3rd dose Triple Antigen vaccination	1995	61	2001	55
% of children getting measles vaccination	1995	42	2001	47
# of outpatient visits per capita	1988	2.39	2002	1.53

Source: Izard and Dugue (2003); Cibulskis, R.(2001)

THE RURAL-URBAN DIVIDE

1.15 According to the 2000 census, 86.8% of Papua New Guinea’s population is rural (virtually unchanged since 1980¹²). Given this large share, it is not surprising that the contribution of the rural sector to changes in any socio-economic indicator should be overwhelming. This by itself should be sufficient reason for focusing development policy on rural areas. But the case for greater attention to the rural sector is rendered urgent by the fact that practically every socio-economic indicator is significantly worse in rural areas. Table 1.6 gives several examples.

¹² This partly reflects that there have been no major revisions of the boundaries of urban areas since 1980, while in many cases ‘rural’ areas adjacent to urban centers have become increasingly urban in character. Despite this, the pace of urbanization has been relatively slow in PNG.

Table 1.6: The rural-urban gap

Indicator	Year	Rural	Urban
Incidence of poverty (%)	1996	41.3	16.1
Never attended school (% of population)	1996	50.5	24.4
Median years of schooling	1996	0	6.3
% of population attending school			
... 6-15 years	1996	40.6	62.4
... 16-20 years	1996	14.2	31.6
% of households with electricity	1996	3.2	59.2
% of households with piped water at home or in neighborhood	1996	8.5	71.7
% of children (12-23 months) who received BCG, DPT/Polio, Hepatitis, Measles vaccinations	1996	32.4	69.7
Infant mortality rate (per '000)	2000	69	29
Child mortality rate (per '000)	2000	28	7
Under 5 mortality rate (per '000)	2000	95	35
Life expectancy at birth (years)	2000	53.0	59.6
Life expectancy at age 25 (years)	2000	37.2	39.1
Health staff per 100,000 population	2000	166	574
		Rural/urban ratio	
Changes		1980	2000
Infant mortality rate (per '000)		1.80	2.38
Child mortality rate (per '000)		1.84	4.00
Under 5 mortality rate (per '000)		1.81	2.68
Life expectancy at birth (years)		0.89	0.89
Life expectancy at age 25 (years)		0.94	0.95

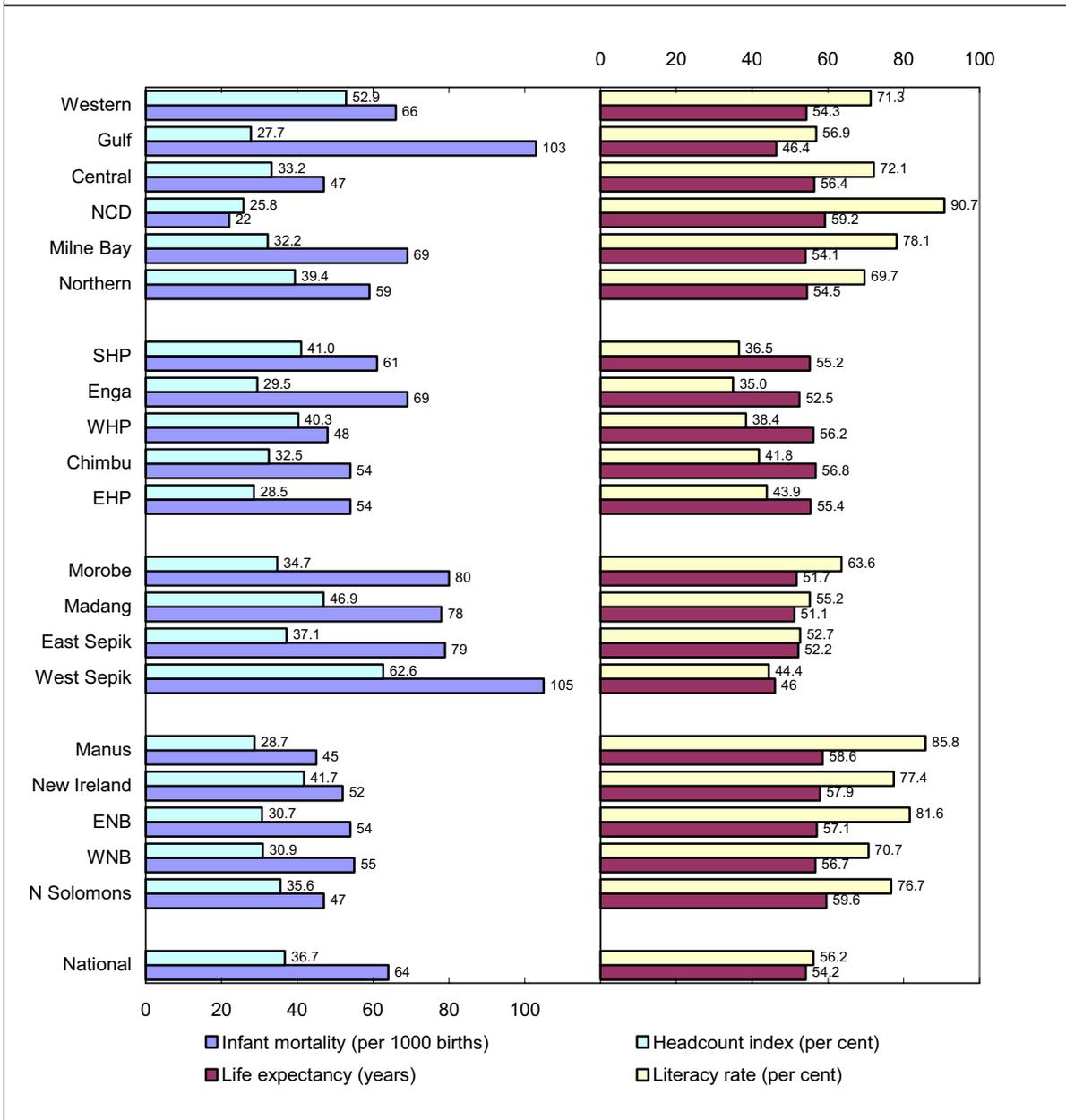
Source: 1996 DHS; 1996 NHS; 2000 Census; DOH (2000).

1.16 Moreover, while consistent data over time are limited, the available information does *not* suggest a diminishing gap between rural and urban sectors. On the contrary, for some indicators, such as those related to health, the gap is clearly widening (Table 1.6).

DISPARITIES ACROSS PROVINCES

1.17 The national picture in terms of both the income and non-income dimensions of poverty, worrying as it is in many ways, is still an average over regions of good and bad performance. Apart from the rural-urban contrast noted above, there are also sharp contrasts across provinces and districts within provinces. Figure 1.5 shows select indicators across PNG's 20 provinces.

Figure 1.5: Selected social indicators by province, 2000

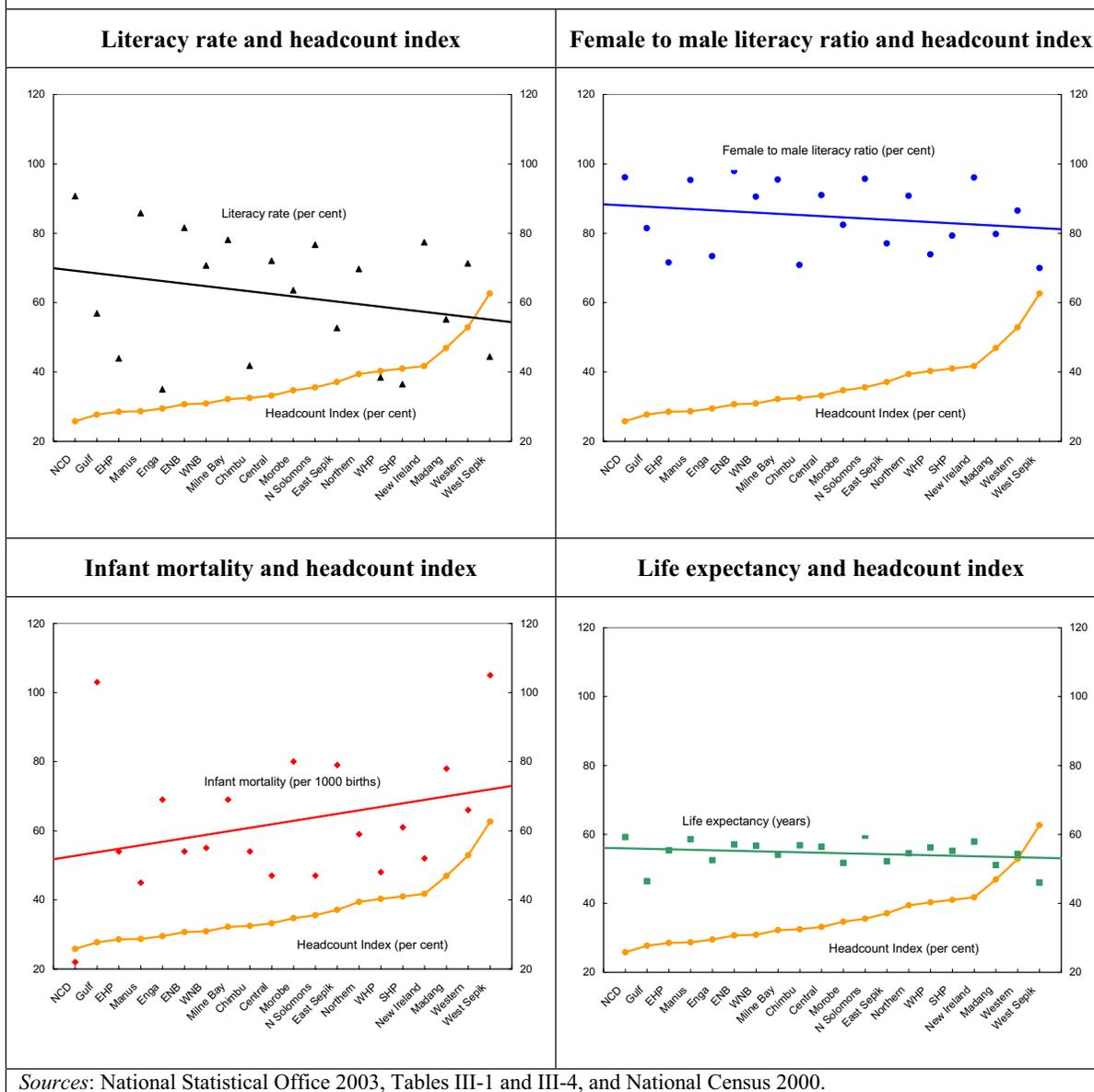


Note: All indicators except the headcount index are from the 2000 National Census. Headcount indices are based on a poverty mapping exercise that combines 1996 NHS data with the 2000 Census data as well as additional other district level data from other sources. It is more appropriate to interpret the headcount indices as relating to the year 1996 rather than 2000.

Source: National Statistical Office (2003), and calculations from poverty mapping for PNG.

1.18 In general, Southern and Islands provinces have better indicators than provinces in the Highlands and Momase regions. Overall, the non-income indicators tend to be correlated with the income poverty indicator in the expected direction (Figure 1.6).

Figure 1.6: Correlation between income and non-income indicators, by province, 2000



1.19 Table 1.7 summarizes the information in Figure 1.6 by presenting a list of provinces that perform worse than the national average in relation to five indicators: infant mortality, life expectancy at birth, overall literacy rate, the ratio of female-to-male literacy and the headcount index of (consumption) poverty derived from a poverty mapping exercise for PNG. The results indicate that amongst the worst performers are the provinces of Madang, East Sepik and West Sepik which are below average in terms of all five indicators. Enga in the Highlands performs poorly in terms of all indicators except the headcount index. Gulf and Morobe are similar to Enga but have higher literacy rate than the national average; though for Enga the literacy rate is only slightly higher. Four other provinces in the Highlands, *viz.* SHP, EHP, WHP and Chimbu perform poorly in terms of the education indicators, while WHP also has higher than

average poverty rates. On the other hand, Western province performs poorly in terms of infant mortality and the poverty rate, but is above average in terms of life expectancy and literacy indicators.

Table 1.7: “Below-average” provinces

Region	Province	Below average performers				Headcount index	Total revenue per capita rel. to average for all provinces	National grants per capita rel. to average for all provinces
		Infant mortality	Life Expect. at birth	Overall Literacy	F to M Literacy		2001	2001
Southern								
	Western	Western				Western	2.55	1.55
	Gulf	Gulf	Gulf		Gulf		1.68	1.42
	Central						0.95	1.35
	NCD						2.49	0.22
	Milne Bay	Milne Bay	Milne Bay				0.95	1.11
	Northern					Northern	0.90	1.31
Highlands								
	SHP			SHP	SHP	SHP	0.76	0.68
	Enga	Enga	Enga	Enga	Enga		1.09	0.95
	WHP			WHP	WHP	WHP	0.69	0.82
	Chimbu			Chimbu	Chimbu		0.70	1.05
	EHP			EHP	EHP		0.66	0.88
Momase								
	Morobe	Morobe	Morobe		Morobe		0.82	0.84
	Madang	Madang	Madang	Madang	Madang	Madang	0.63	0.83
	East Sepik	East Sepik	East Sepik	East Sepik	East Sepik	East Sepik	0.64	0.93
	West Sepik	West Sepik	West Sepik	West Sepik	West Sepik	West Sepik	0.74	1.07
Islands								
	Manus						1.78	2.35
	New Ireland					New Ireland	1.77	1.63
	ENB						1.16	1.36
	WNB						1.09	1.42
	N Solomons						1.22	1.80

Source: 1996 DHS; 1996 NHS; 2000 Census.

1.20 Table 1.7 also shows that with the exception of Western and Gulf provinces, all the below-average performers also have below average total revenue per capita and receive below average national grants per capita.¹³ The provincial allocation of revenue tends to favour (disfavour) provinces with relatively good (poor) development indicators. This is not a case of performance-based allocation, but reflects existing inequities in the system. In particular, it would be of considerable importance that future development policies factor in the regional dimension to protect and improve living standards in the “below-average” provinces, especially in Momase and the Highlands regions.

Poverty mapping

1.21 There are significant disparities within provinces too. Based on a Poverty Mapping exercise undertaken as part of this Poverty Assessment we are able to construct estimates of poverty measures at a high level of disaggregation. Annex Table A1.1

¹³ Note that national grants constituted about 64% of total revenue of provinces in 2001, the rest coming from internal revenue and mining revenue and grants.

presents the poverty estimates resulting from this exercise. It also presents the list of 20 poorest districts in the country. Of these 20 districts, 9 are in the Momase region: 4 in West Sepik, 3 in Madang, and one each in East Sepik and Morobe. Of the remaining 11, 6 are in the Highlands: 2 each in SHP and WHP, one each in EHP and Chimbu province. Amongst the rest, there are two each in Western and Central provinces in the Southern region, and there is one in Bouganville (North Solomans).

1.22 It is notable that 13 of the 20 poorest districts overlap with the 20 most disadvantaged districts as recently determined by the National Economic and Fiscal Commission (NEFC) in an exercise which combined the “income” poverty index from the Poverty Mapping exercise with education and health indices to construct a District Disadvantage Index (on the lines of the Human Development Index used by UNDP). The NEFC has utilized this index to develop a Least Developed District Grant proposed for the 10 most disadvantaged districts.

1.23 Annex 1 shows maps of poverty at the LLG level, and it also presents LLG-level maps of inequality, adult literacy, gender gap in literacy and the extent of wage employment. Such maps can be a useful aid in a needs-based geographical targeting of resources. For instance, as suggested in Chapter 3, there may be scope for a more progressive allocation of education subsidies to schools based on local poverty and remoteness indicators. Following the example of the NEFC’s Least Developed District Grants, a pilot application of such maps could be considered for the education, health or infrastructure sectors.

TWO MAIN CHALLENGES

1.24 The foregoing account of the state of poverty in PNG suggests that stark descriptions of the country as a nation in crisis are not overly exaggerated. While the country has muddled through difficult times in the past, the nature of difficulties presented by the current situation are an order of magnitude higher than experienced before, partly on account of their build-up over a period of time. The account highlights two principal challenges for poverty reduction at this time: **restoration of economic growth and maintaining provision of basic services**, especially in education and health. The next chapter deals with the first, though several of the issues are equally relevant to the second. The subject of service delivery is dealt with in Chapter 3, which discusses findings from the Public Expenditure and Service Delivery (PESD) study (undertaken as part of the work in support of the Poverty Assessment).

2. THE CHALLENGE OF RESTORING GROWTH

2.1 After negative GDP growth in 6 out of the last 9 years and negative per capita growth in 7 of those 9 years, the fundamental importance of restoring economic growth can not be over-emphasized. Yet, this may be more than a matter of reverting back to the economic conditions of the early 1990s when the country experienced positive growth.¹⁴ There are lessons to be learnt from past experience. The agenda for restoration of growth for poverty reduction is large and complex. This Chapter takes a selective rather than exhaustive approach to discussing a few significant issues that are arguably in need of urgent attention.

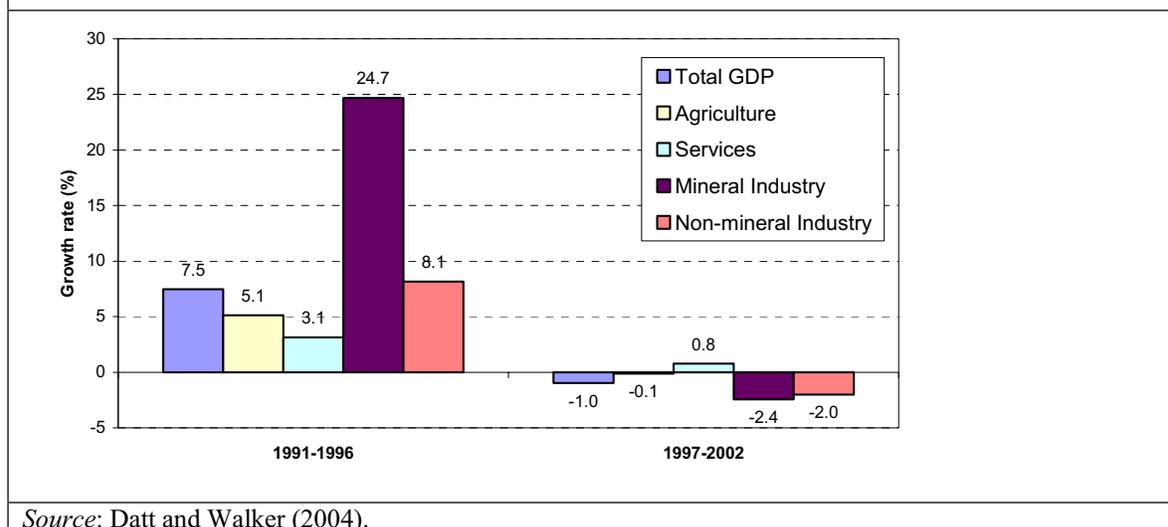
PATTERN OF GROWTH

2.2 An important lesson from past experience relates to the pattern of growth. As noted above, since the mid-1990s, PNG's economy has been shrinking. Its GDP growth rate plummeted from an average annual rate of 7.5% between 1991-96 to -1% between 1997-2002. All sectors except services shrank in the latter period, in contrast to the rapid growth during 1991-96, and the service sector itself stagnated even if it did not decline. (Figure 2.1).

2.3 The contraction was sharpest in the mineral sector, which recorded unsustainably high growth rates between 1991 and 1996 (reflecting the commencement of major projects). This sector alone was responsible for just over half (52%) of the overall decline in GDP growth, more than twice its share in GDP. Non-mineral industry and agriculture contributed about one-fifth each to the decline, and a slowdown in services growth contributed the remaining tenth. Economic growth over this period has also been quite volatile. The mineral sector has also been a major source of this volatility.

¹⁴ See Figure 1.3 in Chapter 1 and related discussion.

Figure 2.1: Mean growth rates, 1991-1996 and 1997-2002



Source: Datt and Walker (2004).

2.4 However, given that few of the poor depend on the mineral sector and that linkages with the rest of the economy are weak, its contribution to changes in poverty has been rather limited. Projections of poverty based on sectoral growth in output and employment suggest that in contrast to the mining sector accounting for over half the decline in GDP growth since the mid-1990s, its contribution to the increase in poverty has only been about 14% (Table 2.1).¹⁵ The decline in the mining sector has had only a small effect on household welfare because the sector employs few workers, and because its enclave structure limits its impact on other economic activities.¹⁶

Table 2.1: Pattern of growth and poverty reduction (up to 2002)

Sectoral contribution to growth					Sectoral contribution to poverty		
	Annual Average (% points)		Change in growth rate	Proportional contribution		Mean Consumption ^a	Headcount Index (\$1/day)
	1991-1996	1997-2002		(3)/change in total GDP gr.			
	(1)	(2)	(3)				
Agriculture	1.6	-0.1	-1.7	0.20	1996	93.15	24.6
Mineral Industry	3.7	-0.7	-4.4	0.52	2002	63.41	39.2
Non-Mineral Industry	1.1	-0.3	-1.4	0.17	Change (%)	-32	59
Services	1.1	0.2	-0.9	0.11	Contributions to change (%)		
Total GDP Growth*	7.5	-1.0	-8.4	1.00	Mining sector	31	20
					Non-mining sector	69	80
					Population shift	-6	-3
					Covariance	6	3
*GDP less Import Duties					* In 1993 PPP US Dollars per day		

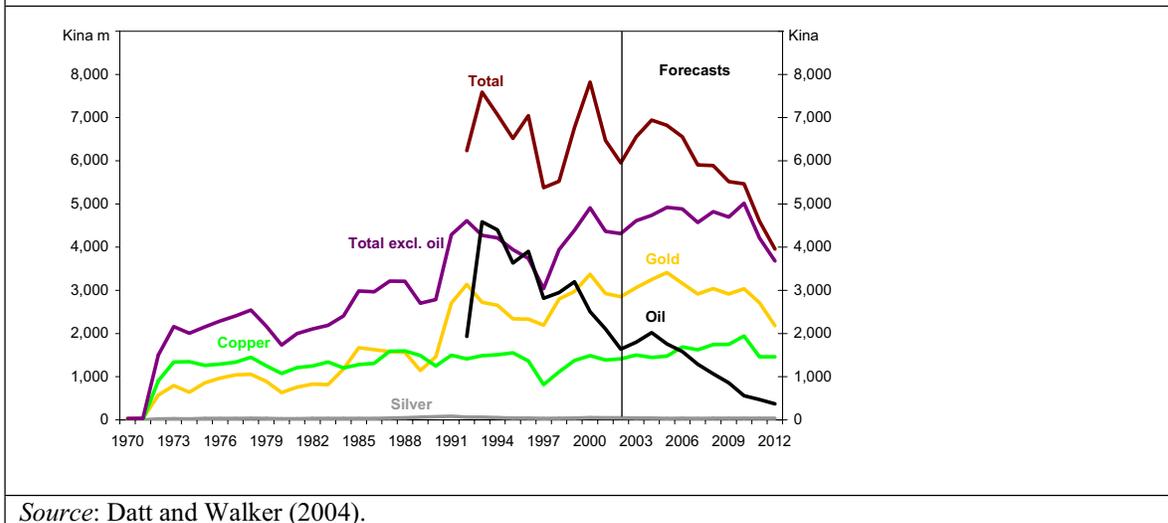
Source: Datt and Walker (2004).

¹⁵ See Box 1.2 for a details of the methodology underlying the poverty projections.

¹⁶ The magnitude of indirect effects on other sectors, including through public spending (because of reduced government revenues), appears to modest (see Datt and Walker, 2004).

2.5 Looking ahead, the mineral sector is projected to decline significantly over the next decade, as shown in Figure 2.2. The forecast average mining sector growth rate up to 2012 is -4% per year, implying a one-third fall in output over ten years. Assuming that non-mining sector grows at an average annual rate of 3% (based on IMF forecasts of non-mineral GDP growth), and employment in the mining sector grows at the same rate as its output while the non-mining sector acts as the residual sector of employment, the implications for poverty can be traced out for the period up to 2012 (Figure 2.3).

Figure 2.2: Mineral sector output in constant prices, 1970-2012

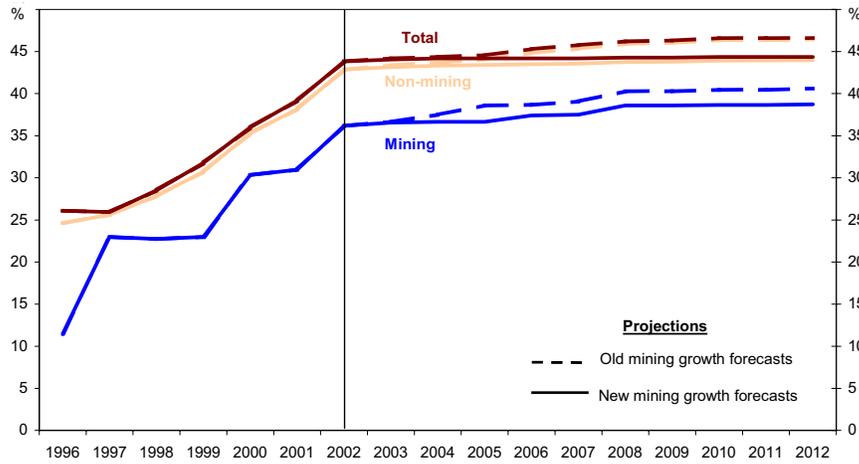


Source: Datt and Walker (2004).

2.6 Poverty projections in Figure 2.3 indicate that the projected decline in the mineral sector would have only a modest impact on poverty. The results illustrate more generally that the mineral sector-dominated growth path that PNG appears to have followed over the past 30 years has not been particularly pro-poor. By the same token, the decline of this sector will not be particularly anti-poor either. What is of greater concern is the fact that extractive industry-oriented growth has often come at the expense of government attention to the development of the non-mineral economy, and this in turn has inhibited poverty alleviation in PNG. At a micro-level, a recent review of extractive industries in PNG also presents a picture of limited sustainable gains from mining activity (Box 2.1).

2.7 Projecting ahead, the medium-term prospects for the mineral sector suggest that the sector is not likely to be an important source of either economic growth or poverty reduction. Its contribution to exports and government revenues will continue to be important (though less so than it has been in the past), but the country will need to increasingly look to its non-mineral economy for sustaining future growth and poverty reduction.

Figure 2.3: Poverty (headcount indices) under projected decline of mineral sector, 2003-12



Note: The graph shows projected headcount indices at the international poverty line of US \$1/day (in 1993 PPP dollars). The dashed line traces headcount indices for a faster projected decline of the mineral sector (at -13% per annum as against -4% in the base projection).

Source: Datt and Walker (2004).

Box 2.1: Extractive Industries Review

The team visited two gold mines, at Lihir (New Ireland Province) and Misima (Milne Bay Province), and one petroleum production project, at Kutubu (Southern Highland Province) to observe and understand the environmental and social impacts of extractive industry projects in Papua New Guinea. The Lihir Gold Mine (Lihir Island) commenced production in 1997, and is expected to continue until 2014. The Misima Mines Limited (MML) commenced in 1989 and mining activity ceased in mid-2001, the plant has been processing stockpiled low-grade ore. This processing will continue until the last quarter of 2004 and that the final deconstruction of facilities will be completed mid-2005. Kutubu commenced in 1992; when oil production ceases in 2012, the operator is expected to switch to gas production, provided there is a market for it.

The Lihir, Kutubu and Misima areas were all relatively isolated and underdeveloped prior to the arrival of the extractive industries. These three sites have since experienced sudden economic growth. Mining and oil projects have had significant social and economic impacts on the national, provincial and local government of Papua New Guinea, however, local communities often felt that they have not benefited from these projects and they have to put up with the adverse environmental and socio-economic impacts.

An important environmental concern has been that the mining activity is likely to have significantly reduced biological production due to massive sedimentation on the ocean floor. The sudden shift from a cashless to a consumer economy have had significant impacts on the communities of Lihir, Kutubu and Misima. The benefits of oil and mining projects have not been equitably shared amongst individuals in the local community. Traditional ways of sharing wealth have been ignored and the resulting social disparities have created a sharp conflict amongst the haves and have-nots. While compensation funds have led to an increase in consumption, individuals have made little provision for the future, such as investing in their children's education, and collective living standards have not improved.

The three projects have naturally attracted migrants from other provinces in search for employment and better health and education services. The consequent increase in the local population has put additional pressure on the infrastructure and public services. This is especially significant for small islands such as Lihir and Misima, where there is limited land availability. Newcomers are not welcomed by the community, especially if they are better qualified for employment with the extractive industry projects.

Decisions regarding the utilization of project revenues are not transparent. Government funds, which should have been allocated for the development of infrastructure and social services, are often not available for the impacted communities. ... Since the opening of the mine at Misima, the local community have enjoyed improved infrastructure, health services and educational opportunities as the mine company invested at the local level. If the government does not step in after mine closure, the community will suffer considerably due to the rapid decline in basic services. The crucial question is, therefore, how the quality of life of local communities can be sustained after mine closure. Training on innovative farming techniques, and the cultivation of the new cash crops supported by MML, may have come a little too late to benefit Misimians in the short-term. There is a need to encourage alternative sources of income in the early phase of the project cycle to limit the dependency on the mine and sustain the economy post-mine closure.

Source: Extractive Industries Review (2002).

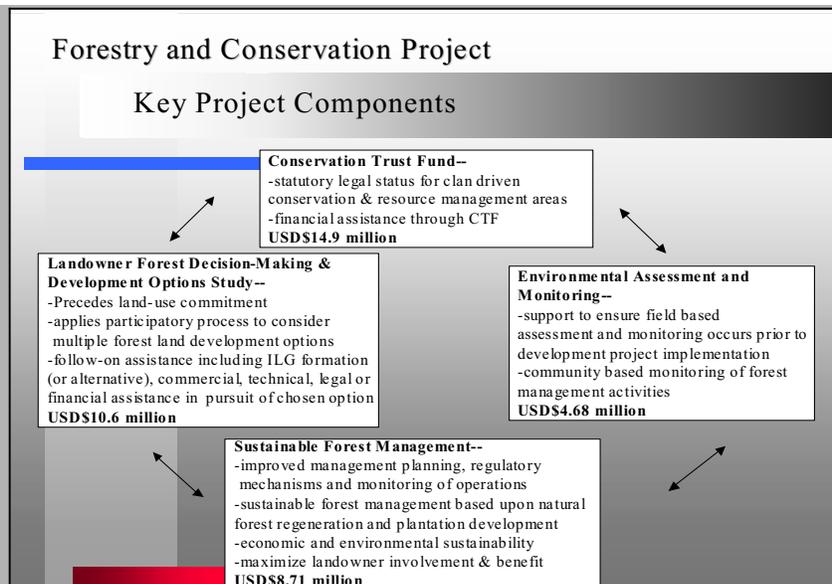
2.8 The limited contribution of the mineral sector to poverty reduction applies more generally to the resource sector as a whole, including forestry. Despite PNG's extensive endowments, the forestry sector – like the mineral sector – represents a case of missed opportunities for poverty alleviation (Box 2.2).

Box 2.2: Forestry In Papua New Guinea – Poverty alleviation: an opportunity being lost?

Papua New Guinea is blessed with extensive areas of natural forest which have the potential to be managed for a sustainable yield of timber, and thus to underpin a sustainable timber industry and provide a sustainable source of income for forest landowners. The potential for sustainability was recognized by the PNG Government in the early 1990's when it adopted the National Forest Policy 1991, and implemented the policy by enacting the Forestry Act 1991. Management of the natural forests as a renewable resource for the benefit of future generations is also required under the Constitution.

The forests of Papua New Guinea represent one of the most important rainforest ecosystems left in the Asia Pacific region, and are a vital part of peoples lives and the Nation's economy. Forests provide the basis of livelihood and cultural life to the more than 80% of Papua New Guineans who still live in rural communities and forests generate much needed export income.

In 1998 a Commission of Inquiry concluded that PNG's forests had been extensively damaged and destroyed by poor logging operations and widespread corruption. Since then, some progress has been made to improve the overall situation of the sector, but it was also recognized that much more remained to be done and this led to the Forestry and Conservation Project (45% loan, 45% grant and 10% Government funded) which was agreed in December 2001.



The project comprises three components related to the management and conservation of forests as well as the greater involvement of landowners in this process. A fourth component relates to the establishment and management of a Conservation Trust Fund as an endowment fund to support, conservation and ecoforestry development options by landowners in forest areas.

Disbursements under the project, which was declared effective in June 2002, were suspended in August 2003 due to four areas of non-compliance with the Forestry Act specifically with respect to timber harvesting allocations. At the present time the project remains suspended as two Timber Permits still fail to comply with the National Forest Policy 1991 and the Forestry Act 1991 although the Government and the Bank are working to resolve these issues to allow the suspension to be lifted and project implementation to proceed.

While the project has considerable potential to contribute towards poverty alleviation, this has not been achieved to date, due in large part to the suspension of disbursements. Nonetheless, a review* of current logging projects operating in PNG was conducted under the FCP, as this was not subject to the suspension. This review is a PNG Government response to its concern to “ensure that the forest industry is moving satisfactorily towards a sustainable harvest yield basis, environmentally acceptable logging practices and is providing meaningful long term benefits to landowners”. The review has found that ;

“Logging has..... little long term beneficial impact on landowners, although they bear the environmental costs. Personal income is directed to immediate consumption, and community income tends to be squandered by so-called land owner companies who purport to represent the landowners. Whilst new large scale sustainable logging projects may offer the opportunity for landowners to receive a sustainable income, the level of income under current arrangements is generally too small to impact significantly on rural living standards. It is evident that in general landowners are not able to manage their affairs in the democratic way they are expected to with regard to their organization, and the management of cash flows from logging projects for long term benefits”.

Successful implementation of the project therefore becomes ever more critical as these and other related issues are to be directly addressed through the project. While both the Government and the Bank are committed to addressing the situation, resolution of the issues at hand is a very real test of governance for the Government itself, and for the institutions of Government. Without the support provided by implementation of the project and the political will required to do this, a significant opportunity for poverty alleviation and income generation will be lost.

*Note: * Towards Sustainable Timber Production – A Review of Existing Logging Projects --- Draft observations and recommendations report (prepared for stakeholder and wider public consideration and comment) May 2004.*

Incorporated land groups in the resource sectors

2.9 The experience of the forestry sector (Box 2.2) also underscores the poor performance of incorporated land groups (ILGs) in securing wider distribution of rents from resource-rich environments amongst landowning populations. The problems with ILGs are highlighted by a recent study for the petroleum sector, though their relevance extends to resource sectors more generally. Key problems include the following:¹⁷

- *Leadership struggles.* Landowner associations in recent times have become the focus of major political wrangling amongst landowners, mostly amongst different factions of the same ethnic group vying for leadership positions and ultimately access to huge sums of money directly or indirectly controlled by these associations.
- *Unlawful and unfair sharing of benefits.* ILG leaders have often diverted resource rents (in exchange for favors) to people who are either not members of ILGs or are members but have been allocated more than their allocated share. There is also fragmentation of existing ILGs and proliferation of new ones, in some instances leading to intentional incorporation of ‘ghost’ groups.
- *Misuse of funds by ILG leaders.* There are frequent cases of the ILG leaders using their constituents’ monies for personal use.
- *Lack of representation and responsibility of ILG leaders.* Examples of this include failure to provide financial reports to ILG members, failure to convey government information to ILGs, poor or mis-representation of ILG wishes to government and companies, and the lack of ILG general meetings.
- *Political alliances as a means of greater rent seeking.* Alliances forged between ILG leaders and politicians are used by ILG leaders to compel the relevant department to concede their demands. Such alliances are often financed from ILG funds, and involve some reciprocity, for instance, financial assistance for election campaigns.
- *Inability of ILGs to solve their problems internally.* Disputes within ILGs have led to litigation resulting in monies due to members being diverted to pay high consultant fees and legal bills.
- *Failed landowner business enterprises.* Corrupt practices have resulted in numerous failed business activities undertaken by landowners in the project areas. Business directors often disappear from project area and slip away to Port Moresby to ‘partake of the good life’. Unqualified company directors avail themselves of extravagant salaries and expenses. Frequently, the end result is the failure of landowner business.

2.10 In view of all these factors, it is not surprising a joint government-industry submission to the National Executive Council recently concluded that “...[the] present regimes and procedures associated with the ILGs now pose unacceptable risks for equitable distribution of benefits amongst project area populations, and for ongoing and future resource developments.”¹⁸

¹⁷ The following discussion is based on Koyama (2004).

¹⁸ A joint Government-Industry submission to NEC on petroleum ILG reform, 25 July 2002, Department of Petroleum and Energy, cited in Koyama (2004).

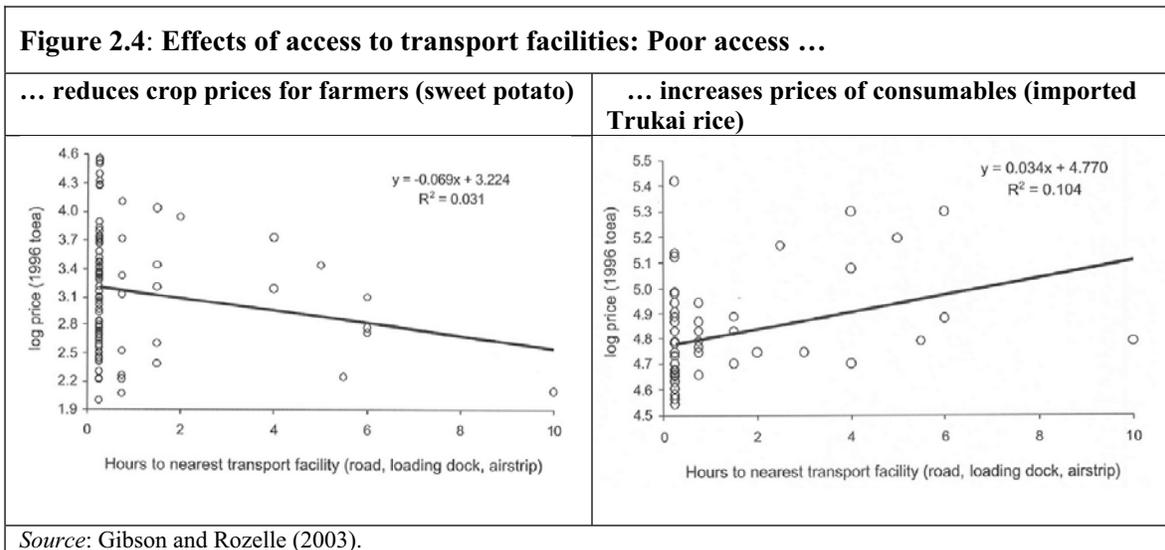
2.11 This points to the need for ILG reform or developing alternative mechanisms for the distribution of resource rents. It also reinforces the need to shift away from a resource-sector dominated growth strategy.

INFRASTRUCTURE

2.12 It is almost pedestrian to emphasize the role of infrastructure development for both fostering economic growth and ensuring service delivery. Yet it bears reiteration, for the infrastructure in the country is in a state of increasing disrepair. For instance, the Participatory Poverty Assessment noted that in the last 5 years in rural areas “services and roads, school facilities and aid posts have deteriorated (ADB, 2002).”

The biggest problem people cited was the need for safe drinking water; the second was lack of usable roads. One interviewee Taluat village said, “...just get us a road ...and see what we can do.” (ADB, 2002)

2.13 Using data from the 1996 NHS, a recent study indicated significant poverty reduction impact of improved access to roads. Cutting the travel time to the nearest road by 2 to 3 hours can cut down the incidence of poverty by 6-12% (Gibson and Rozelle, 2003). This is achieved in part through the effect of better access to transport facilities on higher prices for crops produced by farmers, lower prices of key (non-local) consumables and greater diversification of income earning opportunities for households (Figure 2.4).



2.14 The poor (and by some accounts deteriorating) state of infrastructure also has implications for food security:

It is safe to say that about half of all feeder roads in the country are now impassable to any vehicle carrying significant loads. Airstrips, navigation aids and small wharves have suffered a similar fate due to lack of funding and maintenance. This means that many people can never get produce to market or access food if there is a problem. The massive food distribution during the El Nino drought of 1997 would have been impossible without the assistance of Australian airforce and its helicopters. (Manning, 2001)

2.15 Thus, investment in new and maintaining existing infrastructure remains an increasingly important priority. But spending on infrastructure is significant for an additional reason too. Most of the poor live in infrastructure-poor environments, and thus spending on infrastructure could be an effective way of targeting resources to the poor. This is especially important in the context of PNG where the scope for successful implementation of targeted cash/in-kind transfer programs for the poor remains limited because of capacity and implementation constraints.

2.16 Infrastructure spending could thus be a feasible means of reaching the poor. The benefits to the poor could be further enhanced if infrastructure projects were implemented through labor-intensive public works programs. As is well-known, public works programs can be self-targeting in that the poor would select themselves to be participants in the programs for an appropriately determined wage rate.

“LAW AND ORDER”

2.17 Social conflict and criminal activity have been on the rise in country. Port Moresby already has the dubious distinction of one of the most dangerous cities in the world, and there are indications that crime has also spread to rural areas. Even if triggered by proximate factors such as vendettas or “paybacks”, disputes over access to land or resources, ethnic rivalries (especially in urban settlements), or alcoholism and drug use, PNG’s serious, and by many accounts worsening, “law and order” situation is fundamentally tied to its pattern of economic and social development - in particular, to the limited and declining economic opportunities, poor delivery of basic social services, and an environment of weak governance.

2.18 The lack of employment and income-earning avenues is especially important for the youth (15-29 years) whose ranks swell at about 3% per year, or about 50,000 persons every year, an increasing proportion of whom are in no position to find an entry into the tiny formal sector. Their only recourse is to depend on the informal sector, the largest segment of which (estimated to be as high as half in urban areas) comprises of ‘illegitimate’ activities. It is estimated that the ‘crime industry’ accounts for 15% of all

urban employment.¹⁹ The link between crime and lack of economic opportunities comes through in participatory as well as other assessments (Box. 2.3).

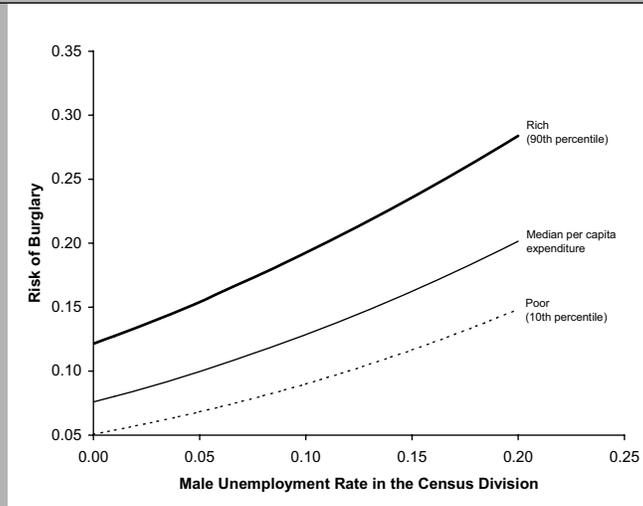
Box 2.3: It is difficult to find work ...and there is so much crime

“Between 1998 and 1999, I had no work and moved to Papini, Koropa, and Port Moresby. I was in bad company in Tete; sometimes I accompanied boys on break and enter raids. I was always afraid. ... I did have some paid work in 2000, as a security guard and then in a supermarket. However, I have no regular job and mostly sit around all day in the Gerehu market with my friends. Sometimes I still accompany friends on break and enter raids. I usually get a small share of the takings.”

“I see a hard future ahead. I will continue to have no money for food, clothes, or travel. It is difficult to find work in the city. I have no skills and there is so much crime. Many of my friends have been killed in their struggle to survive, either by the police or in fights. My father-in-law and I have discussed the possibility of me getting a job in one of the mine sites. I want my daughter to go to school. This however will not happen unless my life changes.”

Jobless youth (20-year-old male) reported in ADB (2002)

Effect of male unemployment on risk of burglary for households at different income levels



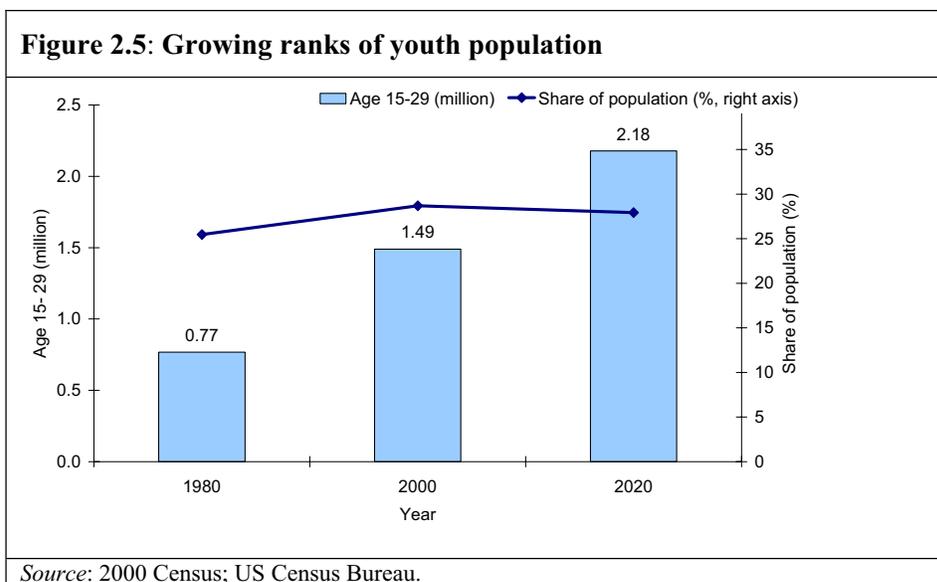
Source: Gibson, 1999.

2.19 Apart from the direct social costs, particularly for women, the economic costs of crime have been enormous. Crime has been disruptive of economic activity (particularly detrimental to coffee production), has undermined investor confidence (leading to loss of production opportunities, such as, for the tourism industry) and has increased the cost of

¹⁹ A survey in Port Moresby estimated that 18% of the Port Moresby population rely on crime as their principal source of income, making *raskolism* the largest occupational category in informal urban economy. See Levantis and Chand (1997), Levantis (1998) and Dinnen (2001).

doing business. According to estimates from a recent survey, security costs and those due to theft amounted to 15% of turnover in agriculture, forestry and fisheries, 15% in hotels and restaurant sector and 12% in building and construction. While large (mostly foreign-owned) firms are able to mitigate the burden of the ‘crime tax’, small-to-medium sized firms spend about 12% of their gross income on security (Chand, 2004).

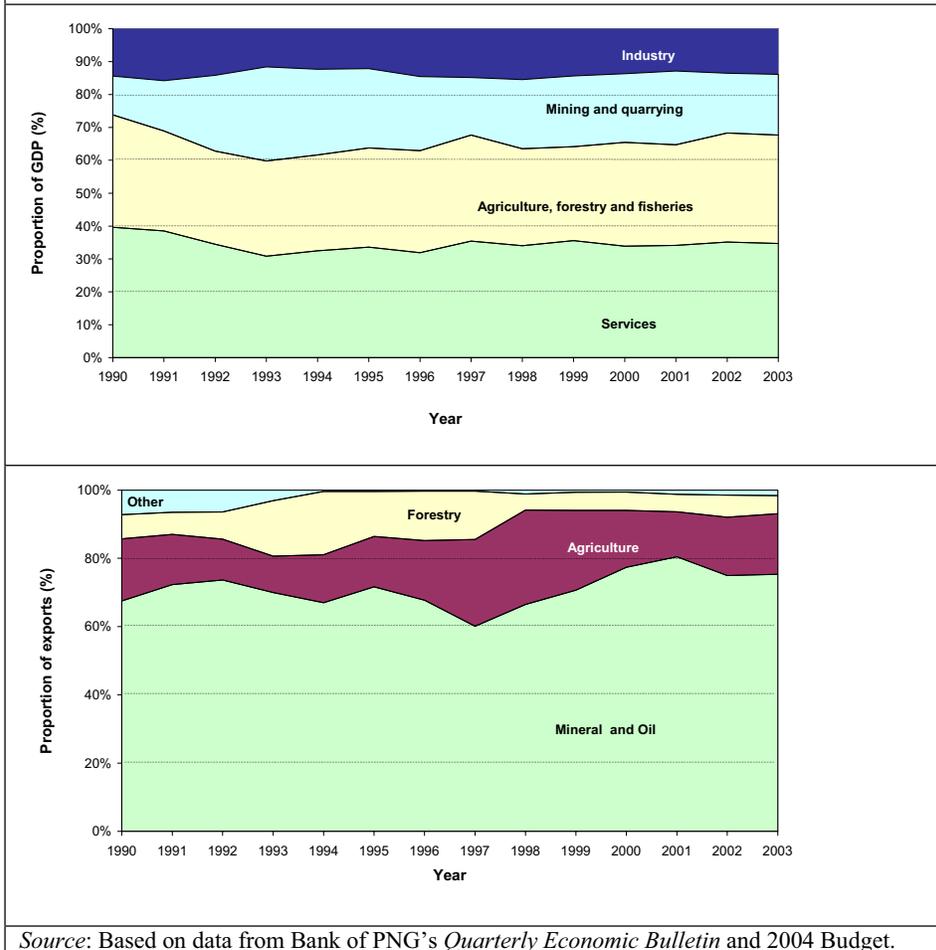
2.20 PNG’s “law and order” problem has thus become a serious development challenge, and the problem may worsen as the ranks of the youth population continue to swell rapidly (Figure 2.5). While extra policing and strengthening of the law and justice system will help, a significant element of an enduring solution, as the discussion above suggests, will lie in development itself, in particular through the creation of viable employment opportunities.



THE NON-MINERAL ECONOMY: THE DOG THAT WAGS THE TAIL?

2.21 The broad (sectoral) structure of PNG’s economy has not changed much since the early 1990s (Figure 2.6). Currently, the mineral sector accounts for about 20% of GDP. The non-mineral economy comprises of: agriculture – about 30% of GDP; non-mineral industry – about 15% of GDP; and services – about 35% of GDP. The mineral sector makes and will continue to make an important (albeit declining) contribution to government revenues and exports (about 30% and 70% respectively in recent years). However, there is an important sense in which the contribution of mineral sector to economic activity can be exaggerated by its share in GDP or exports. Because capital in the sector is predominantly foreign-owned, it is estimated that after discounting returns accruing to foreign capital and purchases of intermediate imported inputs, net output of the sector accruing to the PNG economy is about one-third of its gross output (Chand and Levantis, 2004).

Figure 2.6: Composition of GDP and exports



Source: Based on data from Bank of PNG's *Quarterly Economic Bulletin* and 2004 Budget.

2.22 Thus, as argued above, while the mineral sector is likely to remain important in the medium term as a source of revenue, a bankable strategy for future growth and poverty alleviation will need to increasingly focus on the development of the sectors within the non-mineral economy. The discussion in the rest of this Chapter highlights some further issues relevant to the development of PNG's non-mineral economy, beginning with the agricultural sector.

ROLE OF THE AGRICULTURAL SECTOR

2.23 The country's agricultural sector comprises of the food and cash crop sub-sectors, while the food crops themselves are produced for own consumption as well as the market.

2.24 **Cash crops.** The main cash crops are: coffee, cocoa, coconut and copra, and oil palm, mainly produced for the export market. These four commodities account for 80%

of all agricultural exports (not including forest products).²⁰ A significant proportion of the rural population are engaged in the production of these cash crops. According to the 2000 Census, 47% of rural households are engaged in the production of coffee, 36% in coconut/copra, 17% in cocoa, although only 2% in oil palm (Table 2.2). According to one estimate for 1996, these four crops account for 58% of all cash income from agricultural sources in rural areas (Allen, Bourke and Hanson, 2001), and about 36% of the population and 43% of the poor live in households whose heads' main source of cash income is from these tree crops (World Bank, 2000).

Crop/product	% of households producing ___ crop/product	Proportion producing for own use (%)	Proportion producing for cash (%)	Proportion receiving any cash income from ___ crop/product (%)
Cocoa	17.1	4	96	
Coffee	47.0	4	96	
Coconut/copra	36.2	65	35	
Palm oil	2.2	22	78	
Rubber	1.3	27	73	
Foodcrops	79.4	85	15	67
Betelnut	40.6	66	34	83
Livestock	47.0	83	17	44
Poultry	23.9	76	24	
Fishing	18.5	82	18	56

Note: The second, third and fourth columns report the proportions amongst households producing a particular crop.
Source: Census 2000.

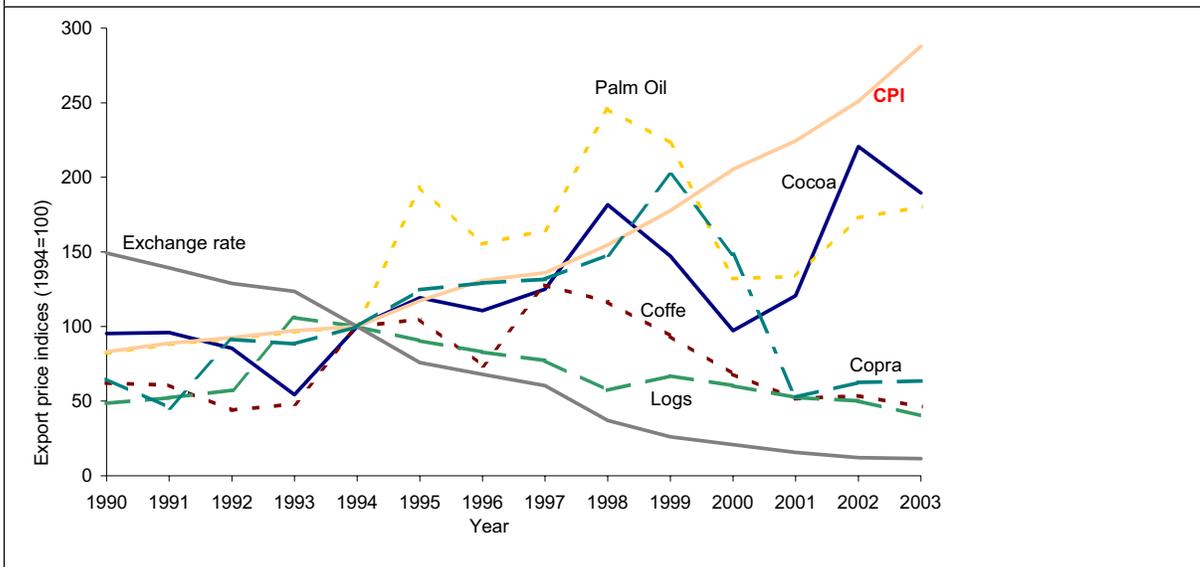
2.25 While the cultivation of these cash crops for an export market makes an important contribution to the livelihood of the rural population as well as the rural poor, the cultivators remain vulnerable to an exposure to periodic terms of trade shocks. Figure 2.7 shows the export price indices for these crops normalized by the CPI. As the Figure shows, since about 1997 the price indices for these commodities (with the exception of cocoa) have declined significantly.²¹ While PNG, being a small open economy, is a price-taker in the external market, there is a case for greater diversification of the production of export crops to mitigate the risks for the rural farming population.

2.26 Several of the other significant issues relevant to the development of the cash crop sector are similar to those for the food crops sector (discussed below).

²⁰ Average for 2002-03 based on the *Quarterly Economic Bulletin*, (Bank of PNG).

²¹ The nominal export price indices have declined too, though the decline is less sharp when they are not normalized by the CPI.

Figure 2.7: Export price indices for key agricultural exports



Note: The figure shows real export price indices and the real exchange rate (normalized by the Consumer Price Index).
 Source: Bank of PNG, *Quarterly Economic Bulletin*.

2.27 Food crops. While subsistence agriculture is important, its importance can sometimes be overstated. For instance, according to the 2000 National Census, 79% of rural households are reported to be engaged in producing food crops, and 85% of the food crop producers grow them for their own use. However, many of those who grow food for self-consumption also engage in selling food.²² Taking that into account, about two-thirds of all households producing food crops also get at least some cash income from their sale (Table 2.2). A similar point also applies to betel nut, livestock and fishing. Estimates for 1996 indicate that fresh food, betel nut and pepper account for about 30% of total rural cash incomes from agricultural production.

2.28 However, the development of the food crop sector and the agricultural sector in general is limited by a number of factors.

- *Limited access to markets and inputs.* Largely due to poor infrastructure, access to markets as well as inputs is limited and expensive. In many cases, this effectively limits the size of the market for smallholder agriculturists; producing for anything farther than the local market is often not profitable. The problem is significantly compounded by the poor law and order conditions.
- *Inadequate extension services.* With the move to decentralization, the responsibility for agricultural extension shifted to provincial and local-level governments. It has been observed that provincial extension services have been deteriorating on account of “dearth of experience, a lack of finance, poor planning, inadequate organisational

²² In the national accounts, the share of the market (as opposed to the non-market) sector within agriculture is estimated at about 54% in recent years, virtually unchanged since the early 1990s. However, based on data from the 1996 National Household Survey, Gibson (2001b) argues that the national accounts underestimate the size of the non-market sector (by as much as half).

structure, poor information, inadequate links with research and insufficient training” (Kagena, 2001). The problem is more severe for food than for export crops; in the latter’s case, extension services have been largely assumed by industry corporations with varying degree of success. With regards to the ‘industry corporation’ model, there remain doubts about its profitability and replicability on a wider scale. Concerns of wider replication also apply to the involvement of non-governmental organizations in extension work.²³

- *Inadequate finance.* Rural financial services have not been able to meet the credit needs of most agricultural producers as well as small non-farm businesses. This is a difficult problem since neither the public, the private nor micro-credit approaches have appeared to be promising: the Rural Development Bank has not been able to establish agricultural lending on a profitable or sustainable basis (despite several capital injections); no private financial institution has shown any interest in lending to locally owned medium or larger-scale agricultural enterprises (not to mention smallholder agriculturists); and many of the micro savings and loans societies in rural areas have collapsed (Anderson and Parker, 2004). A possible solution may be a public-private model that combines limited public subsidies (to offset costs and risks of doing business in an environment where concepts of collateral and foreclosure are hard to enforce) with the greater efficiency of the private sector as a contracted deliverer of financial services on behalf of the state.

- *Land tenure.* The credit issue is also linked to customary land tenures which limit the use of land as acceptable collateral. With growing population pressure and the resulting intensification of agriculture, the customary tenure system is arguably becoming an increasingly insecure form of land tenure, and investment in agriculture will be ultimately limited by the lack of secure tenure. Land tenure arrangements also have significant implications for the management of non-agricultural natural resources, as noted above. The issues raised by the reform of land tenure systems are challenging as well as of a long-term nature. A full examination of these is beyond the scope of the present discussion, but it is important to place the issue on the current agenda for development policy. And in thinking about policy options, it will also be important to draw upon the rich historical experience of a wide array of alternative mechanisms for improving security of land tenure, including a variety of leasehold arrangements.

IMPEDIMENTS TO SMALL AND MEDIUM ENTERPRISES

2.29 The size of the formal sector in PNG is small. While reliable statistics are not available, formal sector employment is estimated to be about 135,000 jobs of which about 70,000 are in the private sector, as against a working age population of about 2.6 million. Formal sector employment has been virtually stagnant since 1990; the increase

²³ See Anderson and Parker (2004).

over 12 years between 1990 and 2002 was by 3.5%, and since 1996 there has been a *decline* of 2.5%.²⁴

2.30 The private sector in general, and small and medium enterprises (SMEs) in particular, have a potentially important role in generating income-earning opportunities both in the formal and informal sectors. However, in addition to the constraints imposed by deteriorating infrastructure and increasing crime, the development of SMEs is further hampered by a number of factors. Prominent amongst these are: lack of access to affordable finance, legal restrictions, difficulties in accessing traditional land for commercial activities and the lack of an educated work force.

2.31 For instance, according to a recent survey in 3 provinces (Milne Bay, Madang and Eastern Highlands), SMEs in the informal sector depended entirely on non-commercial sources for start-up capital: 61% depended on own savings; 20% on contributions from families and friends; and 19% from other sources such as gifts, compensation, royalties and bride price. 43% of the informal SME respondents had completed primary education, while only 2% had a tertiary education. The survey provided no evidence that informal sector activity easily evolves into formal sector activity. In the formal sector, 28% of the SMEs were owned by foreigners. About half the SME's borrowed from commercial sources, but against significant collateral requirements (20-25% and going up to 70%) and at high rates of interest (Kora, 2004). Domestic interest rates are high reflecting in part the risky business environment, but also on account of a high level of public debt of the government. A similar set of problems are highlighted by another recent survey of the urban informal sector (see Box 2.4).

Box 2.4: A recent profile of the urban informal sector

A recent study of the urban informal sector (IS) in PNG conducted a survey of 1,265 respondents from the 5 cities of Port Moresby, Lea, Mt. Hagen, Rabaul and Madang. The survey provides the following profile of the urban informal sector:

- 58% of the survey respondents reside within the urban centers where they operate their IS activities while the rest reside outside the urban centers.
- On average, respondents have been living in their current residence for over 10 years though the answers vary significantly (with a standard deviation of 6 years).
- 42% of IS participants were grade 1 to 6 school leavers, while 32% had no formal education.
- The vast bulk of the IS activity is in petty trading, accounting for 82% of IS activities of all respondents. The manufacturing sub-sector accounts for 14%, while the service sub-sector accounts for just 4%.
- The majority (67%) of the respondents pay market fees to local authorities. 28% who do not pay anything are those selling on the streets and other un-prescribed areas where no one collects fees, while 2% pay for a business license (for selling cooked food for example).
- 64% of IS respondents rely on assistance from other members of the household; only 8% employ paid workers.
- Two major sources of initial capital for IS activities are: contribution from families, wantoks, etc. cited by 81.5% of respondents, and own savings cited by the rest. On average, the initial capital is about K131.

²⁴ Bank of Papua New Guinea, *Quarterly Economic Bulletin*, December 2003.

- The three main sources of raw materials or goods for IS activities are formal sources (shops), own garden and other informal sector sellers.
- The main problems of starting IS business are start up capital/money; finding the right place to do business; and securing permits.
- The most frequently cited problems in running or operating IS business in order of importance are: market problems and poor sales; high market fees; police cleanup, harassment /restrictive laws.
- Only 5% of respondents receive any assistance in the form of training, loan/credit, legal aid/advice, marketing and extension services. 32% of the assistance is received from provincial/national government, 14% from churches.
- Six most cited suggestions for government assistance ranked in order of importance are as follows:
 - ❑ Build more markets (24%)
 - ❑ Give out loans (21%)
 - ❑ Build street stalls and register them (16%)
 - ❑ Assist sellers to form association (13%)
 - ❑ More training (13%)
 - ❑ Stop police harassment (10%)

Source: Institute of National Affairs (2001).

THE CHALLENGE OF IMPLEMENTATION

2.32 It is not that these problems have gone unnoticed by the government. Many of the issues discussed above are, for instance, noted in the government's recent Medium Term Development Strategy for 2003-2007 (see Box 2.5). What remains unclear, however, is whether there will be a sharp focus and decisive commitment that is needed to translate these noted concerns into policy actions that can be sustained over a period of time.

Box 2.5: The Medium Term Development Strategy: 2003-2007

The MTDS is a general, medium-term policy framework for development in PNG. It has three broad roles. It articulates the Government's agenda for recovery and development, identifies the broad policy initiatives necessary for achieving this agenda, and aims to strengthen the Public Expenditure Management (PEM) system.

The core goal of the MTDS is "export-driven growth, rural development and poverty reduction, including through good governance and the promotion of agriculture, forestry and fisheries on an ecologically sustainable basis". The Government believes that a development strategy aimed at promoting primary industry (with development of mining and manufacturing as secondary objectives) is suitable given PNG's demography and natural endowments.

Rural development and poverty reduction are to be achieved through pro-poor growth strategies. Papua New Guineans will be empowered to drive this development process, with government assistance on a "help-out, not hand-out" basis. In addition, governance will be improved through a public sector reform program and possible changes to the Organic Law. These initiatives are intended to strengthen the decentralized system of government, increase public sector efficiency, and improve fiscal management.

Expenditure priorities for 2003-07 are identified in four key areas:

- transport infrastructure rehabilitation and maintenance,

- basic education and primary healthcare,
- law and justice, and
- programs directly promoting income-earning opportunities, especially in rural areas (e.g. extension services, rural credit and promotion of nucleus agro-enterprises).

The MTDS provides only a broad framework for policy in these areas; specific initiatives will be designed and implemented by the relevant agencies (with the exception of agricultural policy, given its central role and the lack of a national agriculture development plan). The annual budget will be the principal vehicle for implementing strategies in the MTDS.

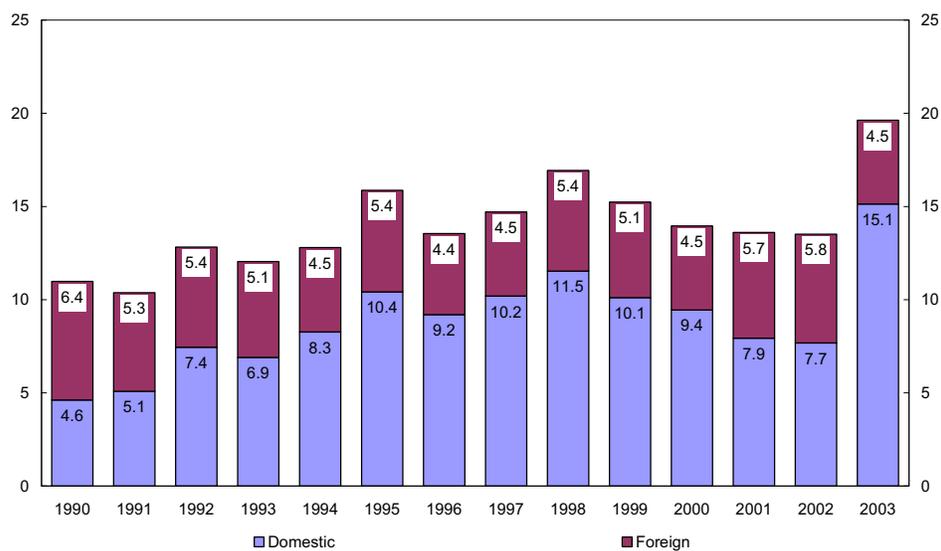
Finally, the MTDS aims to improve the system of public expenditure in PNG's budgetary process. The report identifies three ways of improving the PEM system: improved fiscal discipline, involving a 'hard' budget constraint; strategic prioritization of resources, reflecting a clear and consistent development strategy; and cost-effective implementation of priority programs, through public sector reform and strengthened systems of service delivery.

Source: DNPRD (2004).

2.33 The challenge of implementation is more than just a matter of resources, although the resource environment has become more stringent in recent years. With a rising trend in public debt,²⁵ interest payment on this debt (both external and internal) have risen sharply and now claim about 20% of total revenues; of this, interest payments on domestic debt (which incurs higher interest rates) are about 15% of total revenues (Figure 2.8). This high level of debt servicing places a substantial extra burden on the financing of public spending critical for restoring growth and maintaining service delivery. For instance, for 2003 the interest payments on debt, of K723m, are more than 60% of the entire development budget for that year, and are about 90% of the development budget for infrastructure, education and health combined. There is a danger that if nothing is done, debt servicing costs could crowd out other expenditures threatening both growth and poverty reduction at a time when needs have increased due to rising poverty. The fiscal situation is all the more pressing as mining revenues are expected to decline in the coming years, which further underlines the important issue of the productive utilization of resources.

²⁵ Public debt to GDP ratio in the country has climbed to upwards of 70% in recent years. A little under two-thirds of this debt is external. The major external creditors are the Asian Development Bank, Japan, World Bank, International Monetary Fund, European Union and Australia.

Figure 2.8: Interest payments to total revenue: external and domestic debt, 1990-2003



Source: Quarterly Economic Bulletin, December 2003; Budget Papers 2004.

2.34 The recent Public Expenditure Review and Rationalization (PERR) spells out a number of things that could be done in this difficult fiscal context. The PERR agenda includes: (i) civil service size and payroll reform, (ii) measures to restore the integrity of budget institutions and systems, (iii) improving provincial spending, budget management and accountability, and (iv) adjustment and prioritization of expenditures.²⁶ At one level this is a public expenditure management agenda, but given its potential implications, this is also a growth and poverty reduction agenda. The next Chapter will return to several of these issues in its discussion of public expenditure and service delivery in the specific context of the education sector. As the Chapter will try to illustrate, what is needed is more than just resources, although the resource requirements themselves, with a rapidly growing population and PNG's growing development deficit, should not be underestimated.

²⁶ Each one of these involves more specific measures; see World Bank (2003c) for further details. This is a demanding agenda, as the PERR itself notes: "What is required is a will to reform and set things right. Without leadership at both ministerial and senior bureaucratic levels, reform will not happen."

3. THE CHALLENGE OF SERVICE DELIVERY

3.1 This Chapter presents a summary of findings from a study of Public Expenditure and Service Delivery (PESD) in PNG that was undertaken as a part of the work for the PNG Poverty Assessment. The detailed results are presented in a companion report (World Bank, 2004c).

3.2 The PESD study focused on the education sector (in particular on the primary education sector) though its findings have broader relevance. The problems that plague the education sector have close parallels in other sectors. The PESD study also presents some illustrative data for the health sector for which a limited amount of primary information was collected, but the study's inquiry into conditions promoting or impeding effective service delivery in education has broader relevance for other sectors in PNG, and arguably beyond that for other countries too. A focus on the education sector is also timely as the Government prepares its next National Education Policy.

SETTING THE CONTEXT

3.3 The education sector in PNG has had some notable achievements since independence. Of a total of 5.2 million persons in 2000, PNG has a school-age population of 1.5 million in the age-group 7-19 years, that has been growing at about 3% per annum. In 2002, there were about a million students enrolled in the PNG education system at all levels. The education sector thus caters directly to nearly one-fifth of the country's population. The size of the sector has grown substantially since independence. During 1992-2002 itself, the number of schools has increased by 175%,²⁷ enrolments have doubled, and the number of teachers has increased by 70%.

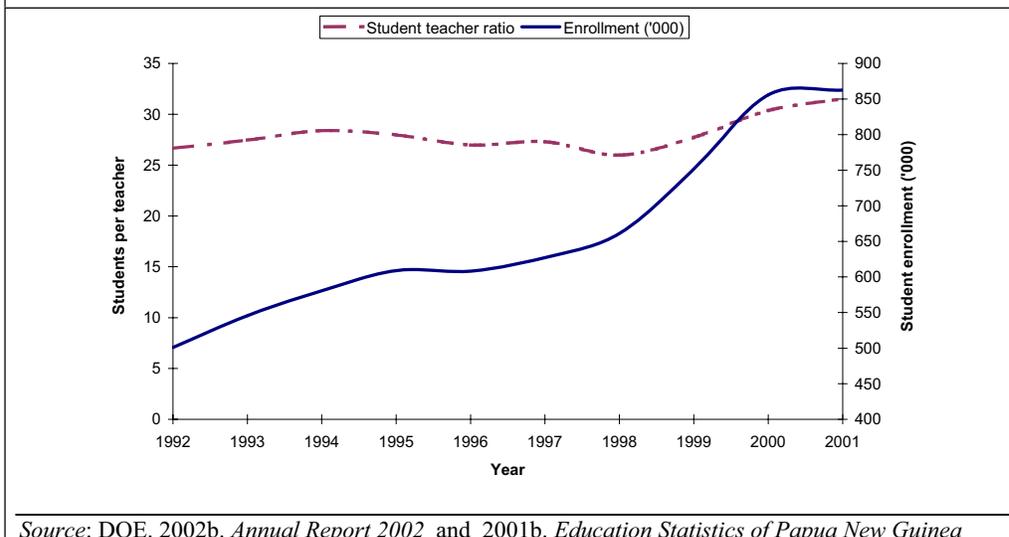
3.4 Government expenditure on education (mostly by the national government²⁸) has been around 5% of GDP and about 15% of the national budget in recent years – these levels are not low relative to international standards and compare favorably with other countries in the region. Government spending is supplemented by contributions from

²⁷ Most of the increase in the number of schools is on account of elementary schools (since the start of the education reforms of 1993). Elementary schools go up to grade 2, and are relatively small schools with about 68 students and 2.4 teachers on average in 2001 (DOE, 2001b).

²⁸ Spending by provincial governments out of their own resources is very limited; see World Bank (2004c), Chapter 4 for further discussion.

donors and parents; the relative shares of the three sources in overall education spending are about 70, 20 and 10 percent respectively. The basic education component – comprising of elementary (up to grade 2) and primary (grades 3-8) – is the largest, accounting for about 93% of schools, 87% of students, 83% of teachers, and about 60% of the national budget. Teacher salaries are about half the Ministry of Education budget, and there has been some concern with the growth in this expenditure. However, while the number of teachers has increased rapidly over the years, it has barely kept pace with the growth in enrolment (Figure 3.1). The student-teacher ratio has not changed much over the last decade; if anything, it has increased a little in recent years, in line with the expectation of cost saving from the education reforms since 1993.²⁹ As noted in Chapter 1, access, retention and quality remain the main policy objectives as well as challenges for primary and post-primary education in PNG.

Figure 3.1: Student enrolment and student-teacher ratio, 1992-2001



3.5 With regards to the basic education sector, data gathered through the study highlights a number of significant problems related to school facilities and environment, school finances, teacher and student performance, and the administration of education. A brief summary of the main difficulties and concerns in each of these areas is discussed below.³⁰

SCHOOL FACILITIES

3.6 **School facilities are deficient in many respects**, including: physical infrastructure (condition of classrooms, administrative block, specialist classrooms,

²⁹ Nor is there any evidence of an increase the average teacher salary in real terms; on the contrary, real salaries have declined in recent years.

³⁰ The rest of this Chapter is an expanded version of the Executive Summary of the PESD report (World Bank, 2004c).

sports equipment, school vehicle, clear radio reception), school utilities (electricity, water, sanitation), access to other amenities (stores that sell basic school materials, post offices, banks, police stations, paved roads or public transport, and access to secondary or high school), and resources for teaching (textbooks for students, library, staff room). School closure and security issues are also a significant factor for many schools. Box 3.1 gives an illustrative example of a community school in Tewae-Siassi district in Morobe Province.

Box 3.1: Surur Community School

Surur Community School serves one big village called Masele. It has a population of well over 600 adults. The school is located on top of a hill. The school is far away from Lablab Station for any services such as transport to Lae or health services. Bank facilities are not available either at the station or in the few shops around Lablab station.

There is no water available either at the school or at the village. Students carry water for teachers from creeks for cooking, washing and drinking. There are three roads that lead to the school. All of them are unsafe to travel on during the rainy season.

There is one double permanent classroom building and one single classroom of bush material. The double classroom is quite new. The bush material classroom needs replacement. The toilets are pit type and all need replacement. The students use the bush, which is very unhealthy.

All the teachers are new to the school with the exception of the headmaster. He has been in the school for one year. The attendance books have been kept up to date since the beginning of the year. Grade 2 has no Maths books while other Grades from 1 to 6 have from 5 to 60 books.

Source: Extracts from field notes, PESD 2002 survey.

3.7 While conditions vary across schools, Surur Community School in Tewae-Siassi district in Morobe Province is not an uncommon example of the many respects in which the facilities and environment at PNG schools leave a lot to be desired (Box 3.1). The school is located in an area that is poorer but less remote than the average school.³¹ It is a relatively small government school (established 1991) with 66 students (35 girls). Neither of its two classrooms has a chair and a table for the teacher or electricity that works. There is no staff room, no sports area or equipment, no agricultural area, not to mention a library or any specialist rooms. While the school has easy access to a working telephone and trade store, the nearest town/station, postal service, police station and secondary school are all more than 2 days away. Water availability is such a significant constraint that lack of water led to a closure of the school for 61 days in 2001.³² Such conditions clearly inhibit the quality of education the school is able to offer to its students. Surur community school is unfortunately not unique in this regard.

³¹ It has a remoteness index of 0.215 (below the median value of 0.299 across all sample schools) and a poverty rate of 36% (above the average value of 29.7%).

³² Lack of water was also noted by the parents to be a major problem facing the school.

3.8 **Poverty and remoteness matter, but not all the time.** Some facilities are clearly worse for schools in poor or remote areas, especially those related to the classroom environment and access to other amenities, but this is not unilaterally so for all facilities.

3.9 **Agency type does not matter, but financial resources available to schools do.** Differences between church and government-operated schools are often not significant, but facilities tend to be better at schools that have greater financial resources (in particular, higher levels of non-grant revenues per student).

SCHOOL FINANCES

3.10 **There are substantial gaps in financial data available at the school level,** which possibly reflect both limited accountability as well as low incentives for regular record keeping. The head teacher's tenure at the school and his/her willingness to stay at the school next year tend to promote better financial record keeping. The available information nonetheless provides a detailed picture of school finances. Table 3.1 shows the revenue and expenditure statement of the average school in 2001.

Table 3.1: Revenue & Expenditure Statement of an average school, 2001

(kina per student per year)

<u>Revenues</u>		<u>Expenditures</u>	
Fees		Cash Expenditures	
School	24	Maintenance	16
Project	12	Infrastructure	12
Other	1	Basic Material & Textbooks	20
Sub total	37	Equipment & Transport	6
		Others a/	13
		Sub total	67
Subsidies		Subsidies	
Monetary	17	In-kind	4
In-kind	4		
Sub total	21		
Total	58	Total	70
Teacher salaries ^{b/}	299	Teacher salaries ^{b/}	299
Total including teacher salaries	357	Total including teacher salaries	370
(Grants - median	25)		
Revenue deficit (+) / surplus (-)	-12		
Grand total	345	Grand total	370

Note: Calculations based on schools with positive spending and revenues (62 schools)

a/ Others include consumables/expendables items, extra staff and other b/ Teacher salary figures from PESD survey, using average annual teacher salary 11370 kina and student teacher ratio 38.

Source: PESD 2002

3.11 Subsidies, fees and grants are the three main sources of revenue for schools, while teacher salaries are directly paid by the national government. Education subsidies are paid on a quarterly basis in support of operational (non-teaching) expenses at the school level. They could be in cash or kind, and have national and provincial government components. Fees comprise of school fees and project fees collected from parents. Grants could also be in cash or kind, and come from both government and non-government (mostly donors and private business) sources.

3.12 Grants are not a dependable source of revenue for the vast majority of schools. Grants from both government and donor/business sources are often sporadic in nature, and their distribution across schools is highly skewed. A very small number of schools account for most of the grants, while the vast majority receive little or nothing. For instance, one-third of the schools received no grants at all in 2001, while the top one-third accounted for 94% of all grants (Table 3.2). There is no systematic pattern to the distribution of grants in terms of school characteristics, and they often tend to be a one-off event making them a highly unreliable source of finance for the vast majority of schools.

Table 3.2: Distribution of grant revenue per student, 2001

Grant revenue/ student (Kina)	%age of schools	%age of total grants	Mean (Kina)			
0	34	0	0		Government	90
0 - 50	34	6	18		Donors	121
>50	33	94	267		Private business	46
Total	100	100	103		Other non-government	10

Source: PESD 2002.

3.13 Subsidies are prone to the problems of uneven distribution. While more evenly distributed than grants, there is still a wide variation in the amount of per student subsidy received across schools that is not explained by student composition, given that per student subsidy rates are fixed by grade, at least in principle. In practice, there are gaps between what schools should receive and what they actually receive.

3.14 Subsidy leakage. For 2001, our estimates of subsidy leakage, defined as the difference between budget disbursements and actual reported receipts at schools range between 16 and 29 percent (depending upon alternative assumptions on how much of the provincial education subsidies are allocated to the primary sector); see Table 3.3.

Table 3.3: Leakage of subsidies, 2001 and 2002

Subsidy leakage		
	2001	2002
What the school should have received (Kina/student):		
Budget disbursement b/ <i>Estimate I</i>	25	90
<i>Estimate II</i>	29	
What the school actually received (Kina/student):	21	84
Leakage rate (%), based on:		
Budget disbursement b/ <i>Estimate I</i>	16	7
<i>Estimate II</i>	29	

Note: The estimate for 2002 is likely to be an overestimate since there were some schools that had not yet received their subsidy payments at the time of the survey
Source: PESD 2002.

3.15 Delays and uncertainty. Delays in the receipt of subsidies at schools are as, if not more, serious a problem as leakages. In 2001, the average quarterly subsidy was delayed by nearly 3 months, though the length of delay varied both across schools, and by quarter (Table 3.4). Delays go hand in hand with uncertainty about the timing of subsidy receipts (in cash or in kind). Thus, there is considerable uncertainty at the school level: they do not know how much subsidy they will get, when will get it, and whether it will be in cash or kind. This plays havoc with operational planning and management at the school level, often leaving the schools to their own devices to meet their needs for basic supplies or school maintenance.

Table 3.4: Delays in receipt and use of subsidies, 2001 and 2002

	Quarter 1		Quarter 2		Quarter 3		Quarter 4	
	Schools receiving positive subsidies (%)	Total delay (weeks)	Schools receiving positive subsidies (%)	Total delay (weeks)	Schools receiving positive subsidies (%)	Total delay (weeks)	Schools receiving positive subsidies (%)	Total delay (weeks)
2001	82	9	58	14	36	14	37	15
2002	97	5	73	3				

Source: PESD 2002.

3.16 There is considerable tolerance for non-payment of fees. In practice the system handles non-payment of fees with considerable flexibility. The consequences of non-payment are not necessarily an expulsion from school or withholding of promotion to the next grade. “Allowed to pay according to ability” is the most common response. Together with fee exemption, this accounts for three-quarters or more of all schools

(according to responses from head/grade-5 teachers); see Table 3.5. At one level this practice erodes the direct accountability of schools to parents, but at another level it also achieves a degree of needs-based targeting. One should however bear in mind, this does not include parents who either do not take the initial step to enroll their children in school or let them drop out of school because they are discouraged by the prospect of unaffordable fees.

Table 3.5: Consequences of not paying school fees					
Consequence of not paying school fees (% of schools)					
	Exempted	Allowed to pay according to ability	Must leave school	Not allowed to go to next grade	Other
Response by					
... head teacher	10	77	5	1	7
... grade5 teacher	6	67	10	0	18

Source: PESD 2002.

3.17 No clear or consistent policy on fees. The lack of a clear or stable policy on school/project fees is best illustrated by the short-lived “free” education experiment during the election year of 2002. The Government increased the subsidy allocation 2.5 times. All subsidy payment were to be made directly to schools in cash (through checks) bypassing the provincial budget processes. But, there was lack of clarity on whether parents were required to pay any fees at all.

3.18 The experiment with “free” education in 2002 had some positive effects. There was a substantial increase in enrolments – a positive outcome from the perspective of universal primary education. The amount of subsidies received at primary/community schools increased nearly four-fold, leakage virtually ceased to be a problem on account of the direct payment system, and delays in the receipt and use of subsidy at schools were drastically reduced (to one month relative to 3 in the preceding year). There was even an attendant increase in the share of basic education in the aggregate subsidy budget which should have rendered it more pro-poor.

3.19 ... but it also exposed systemic problems. A key problem related to the financial sustainability of the policy in tight fiscal environment. The schools’ response to “free” education further illustrates the problematic environment of education finance in PNG. In response to the free education policy, the average fee set by schools declined from K84 per student in 2001 not to zero but to K46 in 2002 – about half the level in 2001.

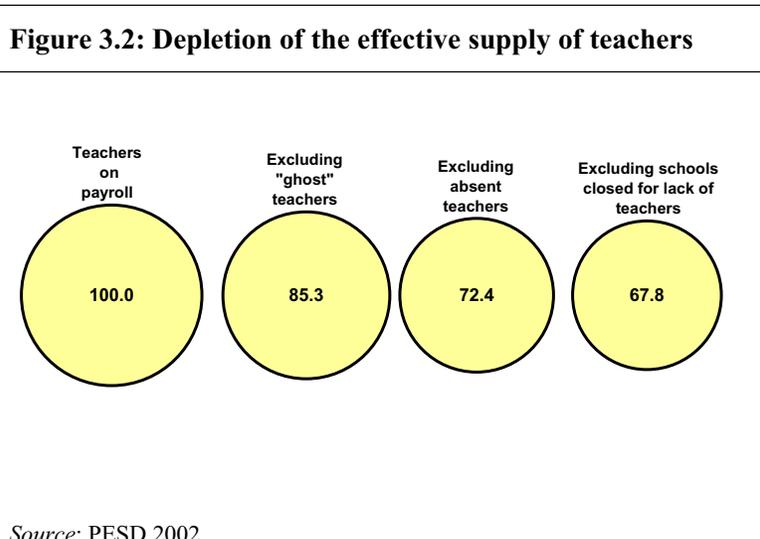
3.20 The schools did not give up on raising resources from parents. *First*, there was **uncertainty** – validated by hindsight – about how long the policy would last. *Second*, the **delay** though reduced was nevertheless excessive for some schools given their virtual lack of working capital in relation to their immediate operational needs. *Third*, the increase in enrolments (including that due to the return of earlier drop-outs) **enhanced schools’ needs**, while the subsidy payments were based on previous enrolment levels.

This was sought to be corrected later in the year, but the initial lag created serious operational difficulties for many schools. *Fourth*, there was a lot of **confusion about what the national policy really was**, and politicians and bureaucrats played their role in leaving behind a trail of conflicting messages. The **tension between different layers of government** also played out in the relay of conflicting messages. Provincial administrations on occasion appealed to decentralization under the Organic Law to defend their right to raise parental contributions.

TEACHERS

3.21 **The effective supply of teachers is eroded by ghost teachers.** It is estimated that about 15% of teachers – or one in every seven teachers – are on the payroll for the school, but are not on the school roster. Thus, against the average of 7.5 teachers per school on the payroll, only 6.4 teachers could be found on the school roster, implying on average one extra “ghost” teacher in every school (Annex Table A2.1).

3.22 **Teacher absence.** The teacher absence rate (the percentage of teachers who are on the roster but were absent on the day of interview) is estimated to be about 15%.³³ A quarter of those absent were absent for more than one week. The problem is compounded by teachers taking up their teaching post well into the academic year. Delayed start averaged about 10 days for all school, and about 17 days for very remote schools. About 13% of school days were lost due to the combined effect of late start and cumulative absence. And the combined effect of ghost teachers, teacher absence, and schools being closed due to lack of teachers is that starting with a 100 teachers on the payroll, the effective supply of teachers is reduced to 68 (Figure 3.2).

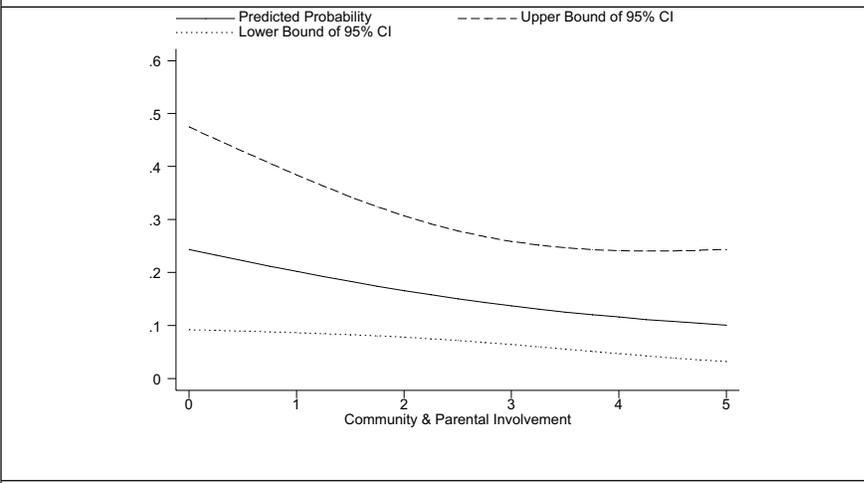


³³ See Annex Table A2.1.

3.23 Absence of teachers partly reflects poor incentives. There is some evidence that delays in payment of teacher salaries encourage greater absence, and the number of textbooks per student is associated with lower teacher absence which suggests that more complementary teaching inputs improve teacher motivation by creating an easier teaching environment.

3.24 But parent and community participation significantly reduces teacher absence. The more actively parents participate in school affairs, and the more schools and community are linked, the evidence shows that the less teachers are likely to be absent. The association is of a significant magnitude: an increase in parent and community participation from about one standard deviation below mean to one standard deviation above the mean reduces the probability of teacher absence from almost 20% to almost 10% (Figure 3.3). This salutary effect of parental involvement and community participation on curtailing teacher absence also holds controlling for a range of school input variables.

Figure 3.3: Predicted teacher absence at various levels of parental participation and community and involvement

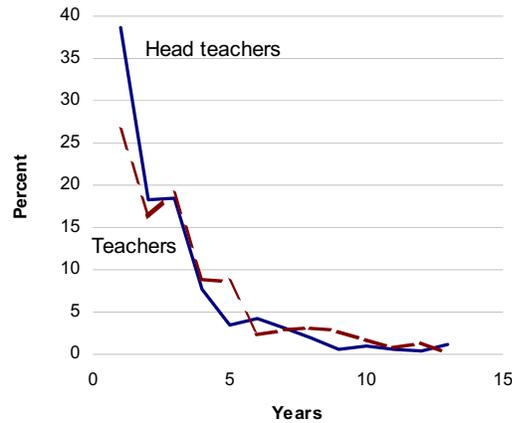


Source: PESD 2002

3.25 Poor teacher motivation is also reflected in high teacher turnover and teacher shortages especially in poor or remote regions. Large fractions of teachers report that they have little or no say in teacher deployment and career management. Perhaps both as a cause and as a consequence of the lack of say that teachers feel they have in determining their own careers, there is a very high level of teacher turnover in schools (Figure 3.4). In 2002, the typical survey school had over two new teachers. This corresponds to almost 40% of teachers being newly appointed to the schools in which they are working. High turnover is related to the problem of teacher shortage which is more severe in remote areas. While there is a policy in place for Disadvantage School

Allowances to encourage deployment in remote areas, a significant fraction of teachers report not receiving this and other allowances despite being eligible for them.

Figure 3.4: Percent of teachers and head teachers by years working at current school



Source: PESD 2002.% of valid responses.

STUDENTS

3.26 Parent and community participation and better school facilities improve student attendance. Overall, about 85% of students attended school on the day in question, that is a student absence rate of 15% (Annex Table A2.1). The rates are similar for male and female students, but there is variation across schools. Schools with greater parental and community participation have higher attendance rates. Student attendance is also influenced by school facilities and teacher absence: **better school facilities promote higher student attendance while teacher absence has a negative effect.**

3.27 The evidence on correlates of Grade 8 test scores suggests that **better school facilities also have a positive influence on student performance.**

3.28 ... and fees set by schools have a positive effect on student performance. The analysis of test scores indicates that total fees per student set by the school has a significant positive effect on test scores. Fees set by schools may be partly a measure of the parents' ability to pay and hence of their level of living (to the extent that is not reflected in the local poverty rate which is also controlled for). In that case, the result is indicative of a **parental income effect** on student performance. Alternatively, schools that set higher fees are likely to feel more obliged to deliver better performance,

indicative of a **market-based accountability mechanism**. The result probably has elements of both.

EDUCATION ADMINISTRATION

3.29 Provincial and district-level education administration fails to play an effective role. A potentially important layer within the decentralized system of education management in PNG is the provincial and district-level administration, operating in part through the offices of Provincial Education Advisors (PEAs) and District Education Administrators (DEAs). The wide-ranging (financial as well as operational) responsibilities of provincial and local-level governments within the national education system are spelt out under the *National Charter for Reconstruction and Development 2000-2002*. However, in practice, these agencies do not appear to function very successfully in ensuring effective delivery of education services. Their relatively ineffectual role is illustrated with regards to the management of subsidy payments. For instance, information collected through the study suggests that PEAs do not seem to keep good records of their accounts. This is reflected by their lack of knowledge of the total amounts of subsidies received by schools in their provinces. On comparing the budget disbursements of education subsidies the figures obtained from the PEAs, we can hardly find any match at all for any province or quarter. Similarly, the qualitative study gives several accounts of the disconnect of the provincial and district-level administration with schools and their local communities; for instance, the following .

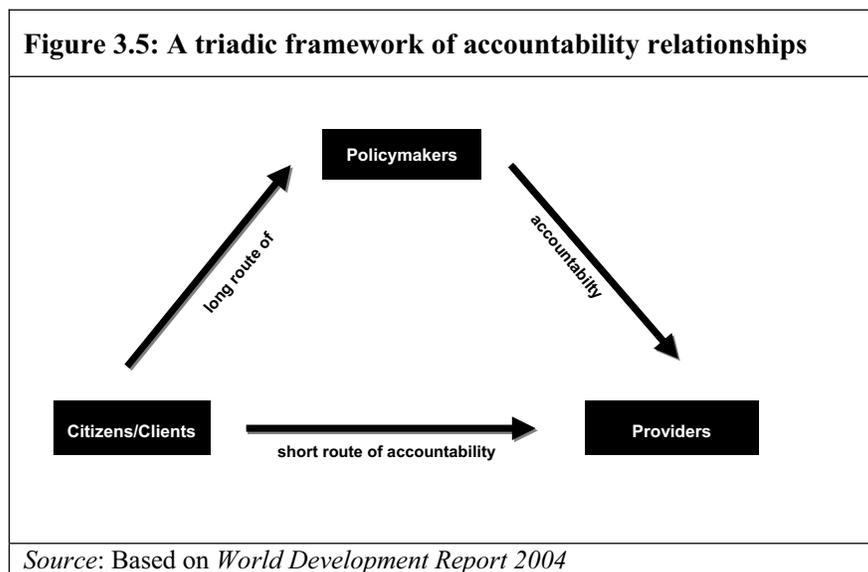
The government officers at the district level in these communities are very isolated from the people whom they are meant to serve. A common remark that is made by the community is in a question form — “Em husat ol lain ya, mipela i no save long ol”, which, in English means, “Who are these people, (district workers) we do not know them.”

We learn who the DEA is when he is introduced as an invited guest speaker on speech days’ ... We do not know what his role is in education. (teachers) [NRI. 2003b, p. 85, 133]

3.30 The inspection system is inadequate. Inspectors are entrusted with the important task of providing advisory services to teachers, schools and provincial administration, inspecting teacher performance and school operations, and recommending teachers for eligibility for promotions. However, for many schools they are nowhere to be found. In 2001 areas over 40% of schools in remote areas had received no visit from an inspector. But it is not only the extremely remote schools that weren’t visited: in accessible areas the average was just under 30. When inspectors visit schools, their visit usually involves only meeting with the head teachers and other teachers. For example, 93% of schools that had a visit in 2001 or 2002 report that the inspector met with the head teacher, 84% report that the visit included a meeting with teachers. Few visits involve any meetings with the Board of Management, fewer still with the PNC. Given the high importance that all respondents gave to the role of inspectors in assessing teachers, a fairly high share—almost 44 percent—of inspector visits did not include classroom observation.

OVERALL MESSAGES AND POLICY IMPLICATIONS

3.31 **These can be examined within the framework of client-provider-policymaker relationships.** The analysis of effective delivery of basic services is a complex issue. For organizing the overall messages and policy implication emerging from this study, the framework recently developed in the *2004 World Development Report* can be utilized. According to this framework, the service delivery chain can be unbundled into the relationships between three sets of actors: the policymakers; the frontline providers of services; and the clients or citizens who are both the source of demand for services as well as their final destination as consumers. The relationships (Figure 3.5) amongst three sets of actors are important for understanding delivery of basic services.



(a) Client-provider relationship

3.32 **Parental participation and community involvement contributes to better service delivery.** The evidence summarized above indicates it does this by inducing lower teacher absence, lower leakage and higher student attendance.

3.33 **Non-governmental agencies such as the church are unable to guarantee more effective service delivery.** The analysis in this report however is indicative of the relative absence of striking differences between church-operated and government schools for a range of indicators. Only in a few cases does the “altruistic” motivation seem to deliver better outcomes. The reason is not hard to guess. Church schools are operating in an overall financial and administrative environment that is fundamentally no different to that faced by the other schools.

3.34 While there are impediments to the operation of the “market” link: the short route of accountability. The direct “market” link of accountability of schools (provider) to parents and students (client) is broken because of the system of subsidized education in PNG. Even setting aside the free education experiment, education in PNG – not unlike many other countries at a comparable stage of development – is heavily subsidized once publicly-paid teacher salaries are taken into account. The “market “ link is further eroded by the absence of a clear policy on school and project fees, and frequent changes in that policy, resulting in an environment where roles, responsibilities and entitlements are often poorly defined and understood.

3.35 ... there is a role for the “market” link: the short route of accountability. There is some evidence on the parents’ willing to pay for education. For instance, only about 20% of the parents interviewed in 2002 (the year of the free education policy) said that the government should pay for the cost of education; the rest (80%) thought the parents or parents and government together should bear the cost.

3.36 But the trade-off with equity would have to be directly faced. Evidence also shows that despite the subsidy, the income effects on primary enrolment are significant and positive (World Bank 2000, Gibson 2000). As also illustrated by the experience of 2002, enrolments did expand elastically to the substantially higher subsidies offered during that year. Thus, while there is evidence of willingness to pay for education on the part of parents, reductions in subsidy can be expected to have negative effects on enrolments. On the other hand, conditional transfer programs, like the Progresia in Mexico, are likely to defy successful implementation in PNG’s context, where delivering subsidies to schools itself has proven to be extremely challenging.

3.37 There is a case for experimentation with greater flexibility in fee setting at the school level, on a pilot basis (not for cost recovery but as an accountability mechanism). While the subsidy element at least for basic education would need to be maintained in the interests of ensuring wider access to education by PNG’s population, the policy on user fees could be liberalized, not so much as an instrument for cost-recovery but primarily as an accountability device. The liberalization could take the form of letting the schools (rather than the PEBs or the national government) decide through the institutions of BOMs and PNCs how much fees to charge. There is evidence of the parents’ willingness to pay for education which the schools and the local community are best positioned to harness. Some **regulation of maximum chargeable fees** will perhaps be necessary, the enforcement of which itself would be a challenge. However, the evidence on the tolerance of non-payment of fees suggests that there do exist some local limits on the exercise of monopoly power by schools, and the de facto trade-off between accountability and equity need not be as sharp as it seems. Overall, there is thus a case for experimentation with school-based liberalization of fee setting, while maintaining a high aggregate level of subsidies together with a mass information campaign on resources available at the school level (see below).

(b) Policymaker--provider relationship

3.38 There is evidence that delivery of financial resources is worse under decentralized setting. The evidence from the experimental policy of 2002 indicated that a direct cash payment system – from the national Department of Education to the schools – works much better in preventing leakages and equally damaging delays. In 2002, the 3-4 times larger than the usual quantum of subsidy was delivered to schools with minimal leakage and reduced delays. The evidence also indicates that the PEAs and DEAs fail to play an effective role and the inspection system is inadequate.

3.39 There is a case for direct cash-based subsidy system. Thus, with regards to subsidies there is a case for direct cash delivery to schools through bank deposits or checks. Other subsidiary reforms, such as subsidy payments on a 6-monthly rather than quarterly basis to reduce transaction costs, and a front-loading of the subsidy payments in view of the larger (and immediate) needs of schools at the beginning of the school year, may also be worth considering in this regard.

3.40 ... that can be allocated on a more progressive basis (without reducing the overall level of education subsidies for the primary sector that is likely to have a negative impact on enrolments). Education subsidy policy in PNG has traditionally allowed for uniform per student subsidy rates across schools for given grades. The principle of uniformity has an element of built-in progressivity; the uniform amount translates into a higher proportion of per capita incomes in poorer areas. However, there is some scope for introducing greater progressivity by allowing the policy to offer higher per student subsidy rates for schools located in poorer or more remote areas, that may also face higher unit costs for comparable levels of education services.

3.41 A case for grants from government sources to be consolidated under subsidies. For government grants, there seems to be a case for consolidating them under subsidies rather than operating them as a separate channel of financial transfers to schools. This could contribute to a simpler and more transparent system. At the provincial level in any case the evidence suggests that there is not much additional spending on education beyond the revenues budgeted for teacher salaries and education subsidies.

3.42 ... and better coordination of grants from donors. The distribution of the donors' component, which accounts for about 70% of all non-government grants, primarily reflects placement decisions related to individual donor-supported projects. There is scope here for better coordination of donor projects with a view to achieving a more equitable distribution.

3.43 Significant cost-savings are possible through elimination of ghost teachers, but danger that the problem may reemerge. With respect to ghost employees, there is an effort already underway to cleanse the payroll system. Important as this effort is, the challenge will be that once this cleansing is completed, the problem does not recur.

3.44 The scope for cost-savings through higher pupil-teacher ratios or a squeeze on teacher salary levels is limited (without affecting quality of services). This is in a context where teacher salaries have been declining in real terms in recent years, and average student-teacher ratios are on the high side (about 38 students per teacher).

3.45 There is no effective alternative to centralized payment of teacher salaries ... With regards to teacher absence and teacher performance more generally, payment of teacher salaries by the national government subverts accountability at the school level. There is little local authority (with the head teacher/BOM) to take disciplinary action against teachers (or against head teachers). However, given the problems associated with decentralized delivery of financial resources (illustrated plainly in the case of education subsidies), there may be no viable alternative to a centralized payment mechanism. There may be a need thus to look elsewhere for avenues to improve teacher performance.

3.46 ... but payment of teacher allowances needs to be improved to mitigate high turnover and shortages. Based on the analysis in the study, a more promising approach may have to rely on improving teacher motivation and promoting stronger parental and community involvement. The former points to measures such as better provision of textbooks and teaching materials for students, reducing salary payment delays, fuller payment of allowances (and perhaps their consolidation under salaries as a means of ensuring fuller and more timely payment).

3.47 The inspection system needs to be better resourced, and there is a case for the provincial/district administrations to be more closely involved in this function.

(c) Client-policymaker relationship

3.48 There is a need for consistent, more stable and clearly-communicated policy. An unstable policy environment – itself the product of an unstable political environment – can have a corrosive effect on short chain of accountability. For instance, during the “free” education experiment, the lack of a clear policy on fees at times placed schools in an antagonistic position vis-à-vis the parents who wondered why they should pay any fees if their fees had already been paid by the government.

3.49 ... a role for information that can be linked to actions. Successful delivery of funds (if, for instance, accomplished through direct subsidy payments to schools) needs to be followed up by responsible utilization of funds at schools. The role of information can be potentially important here, as illustrated by the successful example of Uganda. Measures such as a mass information campaign by the central government on the transfer of funds to districts led to a large improvement in the receipt of funds at Ugandan schools. In the PNG context, the policy of direct subsidy payment to schools could be supplemented with an information campaign – through the print, electronic media (radio and TV) and mandated postings at school notice boards – on the amount of subsidy payment per student delivered to individual schools. This information could empower the local community not only in the setting of appropriate school fees (as discussed above) but also in monitoring the utilization of resources at schools.

3.50 **But there are limits to the effectiveness of the long route of accountability under the current political system ...** There remain some serious constraints to the long chain of accountability (operating through the clients influencing policymakers who in turn influence providers) that are embedded in the political reality of unstable governments in PNG that are propped up by a complex system patronage of heterogeneous (mostly clan-based) interest groups. While there is an electoral reform process underway, including the introduction of a system of proportional representation, this reality is unlikely to change appreciably in the near future. **This reinforces the case for exploring some form of market link and strengthening the hand of the client.**

4. POVERTY MONITORING AND EVALUATION

4.1 The state of poverty data in PNG is weak. Interpreting poverty broadly, as we have done in this report, to encompass both the income and non-income dimensions, such a statement can be argued to apply to both dimensions. A false sense of data adequacy is sometimes created by a tendency – not uncommon in data-poor settings – to find statistics appearing and reappearing in a variety of documents and reports whose original sources are often dubious or dated or simply hard to pin down. Widely quoted numbers can thus acquire an exaggerated sense of authenticity and recentness in these circumstances. Another version of a false sense of data adequacy sometimes takes the form of the view: “Things are bad and have remained so for a long time, nothing has really changed, so why do we need new data?” The discussion in Chapter 1 on recent changes in income and non-income dimensions of poverty (however imperfectly gleaned from available data) should however put to rest the notion of a static, unchanging reality in PNG.

4.2 This final Chapter offers a brief review of the key lacunae in the currently available poverty-related data for PNG from the joint perspective of monitoring as well as evaluation functions of such data. By the monitoring function, we refer to activities that allow tracking progress in a set of indicators appropriate to the goal of poverty reduction, while evaluation refers to activities that help assess the impact of specific programs, policies or events on poverty. Thus, while both monitoring and evaluation (M&E) may deal with outcome/impact and input/output indicators, the object of monitoring is tracking progress in the indicators while for evaluation the attribution of progress to particular policies, programs or events is important. Unfortunately, the “E” in M&E has remained highly underemphasized in most official/policy discussions on the topic.

4.3 From such a perspective, the following types of data can be deemed relevant to the monitoring and evaluation of poverty.

- *Census and survey data.*
- *Administrative data.*
- *Participatory assessments/qualitative data.*
- *National accounts and macroeconomic data.*
- *Government finance data.*

CENSUS DATA

4.4 PNG has had three censuses since independence: in 1980, 1990 and 2000. The 2000 National Census was the first time the entire population was enumerated using a single uniform questionnaire that included some basic fertility and mortality questions (NSO, 2003). Previous censuses adopted a two-track approach using a short-form for the entire population, and a longer form for a smaller sample. As already utilized earlier in this report, the census data are a vital source of information on the most basic demographic indicators such as: age distribution of the population and its growth rate, life expectancy, infant and child mortality, fertility, migration, literacy and enrolment. However, the following issues are notable with regards to census data in PNG.

- Indispensable as they are, census data are not a substitute for other survey-based data at least for two reasons: their relative infrequency (once a decade relative to data from surveys that at least in principle ought to be conducted more often) and the relatively limited coverage of topics and variables on which they canvass information (while surveys can exploit their more limited sample coverage to collect more detailed information on a wide range of topics and variables).
- While there is improvement over time, there have been some issues with the quality of census data that could be illustrated with two examples.
 - Based on the counts from the three censuses, the rate of population growth appears to have accelerated from 2.2% per year during 1980-1990 to 3.2% per year during 1990-2000. Such acceleration however is unlikely since there is no evidence of an appreciable increase in fertility or decline in mortality (at least during 1996, the year of the DHS, and 2000), and recent estimates of the rate of natural increase (estimated directly from the 2000 census data as the difference between the crude birth and death rates) have put it at about 2.4% per annum (NSO, 2003). The most likely explanation is an under-enumeration during the 1990 census.³⁴ Since the coverage of the 1980 census is believed to have been more complete and the implied growth rate is more consistent with the aforementioned rate of natural increase, it has been considered preferable to use the annual growth rate of 2.7% based on a 1980-2000 comparison. However, this has left a measure of uncertainty with regards to the true population growth rate.
 - Data from the censuses of 1971, 1980, 1990 and 2000 are suggestive of a stagnant or even *decreasing* share of urban population, the shares from the four censuses being 11.1, 13.1, 15.4 and 13.2% respectively. The apparent “ruralization” between 1990 and 2000, however, is inconsistent with the higher urban rates of natural increase and the information on rural-to-urban migration. In part, this reflects the differential under-enumeration of rural and urban populations. It also

³⁴ The results of a post-enumeration survey carried out after the 1990 census have not been available.

reflects the fact that there has been no major revision of urban boundaries since 1980, while many erstwhile rural areas (especially those adjacent to urban centers such as Goroka, Lae and Mount Hagen) have become increasingly urban in character, introducing an element of rural bias into the recent census results (NSO, 2003).

- The analysis and dissemination of data from the 2000 census remains to be completed. While a certain amount of analysis and dissemination has been carried out especially during 2003, more remains to be done including production of provincial census reports, the social and economic conditions study (SECS), detailed thematic studies and monographs. The slow progress reflects limited resources for this activity (initially funded from the AusAID 2000 Census Project) as well as limited capacity at the national statistical agency.

SURVEY DATA³⁵

4.5 Survey-based data are probably the weakest element of the information base for national poverty monitoring and evaluation. The last Poverty Report prepared by the World Bank (World Bank, 2000) was primarily based on Papua New Guinea National Household Survey of 1996, which was also the year the last Demographic and Health Survey was undertaken. At the time of writing of this report eight years later, the 1996 NHS and DHS are still the most recent household surveys available. The situation has created some serious gaps in the availability of up-to-date information on poverty and social statistics. The following additional points are notable with regards to poverty-related survey data.

- For measuring and monitoring income/consumption poverty, there is no good substitute for household survey data. While projections of poverty beyond the survey year (1996) were presented in Chapter 1, by combining survey-based information with post-survey information on the sectoral composition of output and employment growth, these are still projections – a poor second to actual survey, data on the distribution of welfare. Into the eighth year since the last survey over a period when the economy has undergone significant contraction, the need for a new household survey to assess and comprehend changes in household welfare can not be over-emphasized.
- A similar point applies to the measurement and monitoring of non-income indicators, the principal survey-based instruments for which in PNG have been the DHS and the NHS. Prior to the 1996 DHS, the previous two demographic surveys were conducted in 1991 and 1981 as supplements to the censuses of the preceding years. And there was a National Nutrition Survey that was carried out in 1982-83 which collected

³⁵ This discussion focuses on nationally representative surveys. Smaller (more specialized) surveys can not provide the basis for poverty monitoring and evaluation for the country as whole.

anthropometric data for children under 5. As for the NHS that collected data on both consumption and non-consumption indicators, there are no real precursors at the national level. There was an Urban Household Survey conducted in 1985-87 that collected income and consumption data for households in nine urban areas.³⁶ Though utilized for analysis by at least one researcher³⁷, the data from this survey were never processed by the NSO. Thus, there is currently no system in place for periodic survey-based information collection and processing in the country.

- From an evaluative perspective, collecting data on a broad range of variables *for the same set of households* (or alternatively, being able to link different surveys with each other) is of great importance. By observing the range of indicators and variables for the same households, it is possible to examine their (often complex) inter-relationships which is indispensable for sound policy analysis and decision making. Hence, the importance of *an integrated survey*, which is much more than a single tool for measuring many different indicators. The idea of conducting an integrated survey for PNG has been extensively discussed amongst donors and statistical and planning agencies in PNG over the last two years, and it is also referred to as part of the monitoring plan for the National Poverty Reduction Strategy (DNPRD, 2003). However, progress towards implementation has remained illusive, and there is a pressing need now to resuscitate this initiative.
- There is also a significant perceived demand for sub-national (especially provincial) data. This too is reflected in the recent NPRS (DNPRD, 2003). The census is of course a key source of sub-national data, but as discussed above, the coverage of topics under the census is relatively limited for obvious reasons. Other sub-national data collations such as those in the *Papua New Guinea Rural Development Handbook* (Hanson et al., 2001) are based on information that is now getting to be quite dated (some of the information relates to the early 1980s and none is more recent than the late 1990s). Similarly, exercises such as Poverty Mapping (undertaken as part of this Poverty Assessment) which made use of data from the 1996 NHS and the 2000 Census, while useful, are still limited by their reliance on an 8-year old survey. Thus, even for supporting production of sub-national statistics – whether done directly through a survey with a sufficiently large sample size, or indirectly through small-area estimation techniques – the revival of household survey-based data collection is very important.
- Creation of gainful employment opportunities is widely recognized to be an important objective of development policy, but nationwide information on employment is limited to what can be gleaned from the censuses and the occasional NHS/DHS. Bank of PNG publishes an employment index by region and industry based on a quarterly survey of firms in the private sector, but this is primarily confined to the formal sector, and data on wages are virtually non-existent. There is no labor force survey in the country. Looking ahead, such a survey ought to be undertaken, either as

³⁶ The 9 urban areas covered were: Port Moresby, Goroka, Wewak, Ambunti, Kieta, Arawa, Panguna, Lae and Rabaul. Funding difficulties restricted the survey to just 6 of the planned 10 provinces, and delayed surveying in two (Gibson, 1998a).

³⁷ See for instance, Gibson (1998a, 1998b, 2002).

an independent activity or accommodated as a separate module within other household surveys like the DHS or the NHS.

- Besides the DHS/NHS, there are also occasional, more specialized, surveys focusing on sectoral issues; for instance, a survey of the urban informal sector conducted by the Institute of National Affairs in 2001 (INA, 2001), or the Public Expenditure and Service Delivery (PESD) survey for the basic education sector undertaken as part of this poverty assessment (World Bank, 2004c). Facility-based surveys such as the PESD are a useful supplement to household surveys in examining issues relating to the delivery of basic services to the poor and to the population at large. Sometimes, such surveys can also be usefully integrated with household surveys, as in the case of the recent Lao Expenditure and Consumption Survey, and such possibilities are also worth exploring in the PNG context.
- If there is a trade-off between frequency and comprehensiveness of survey-based data collection on account of affordability or managerial capacity, relatively quick monitoring tools such as the Core Welfare Indicators Questionnaire (CWIQ) ought to be considered as a potential alternative for frequent monitoring of a limited number of indicators. CWIQs do not collect information on income or consumption, but use a short questionnaire to collect household data on a limited number of indicators such as consumption of certain goods, ownership of assets, some very basic indicators on education and health, and use of or access to services. CWIQs are not a substitute for regular household surveys, but they can be undertaken more frequently (even annually) while the regular surveys are undertaken on a less frequent basis (for instance, every 5 years if a higher frequency is deemed unaffordable).³⁸

ADMINISTRATIVE DATA

4.6 Administrative data from line agencies are clearly an important source of poverty-relevant information in PNG. *Education Statistics* produced by the Department of Education or the *National Inventory of Health Facilities* by the Department of Health are good examples of this. While PNG has a reasonable level of such information, the following is notable.

- The key point about administrative data is that they are a useful complement to but never an adequate substitute for census/survey-based information. An important reason is that administrative sources mostly provide information on input/output indicators that are critical for sectoral planning and policymaking, but they have little to offer on outcome/impact indicators.
- Administrative data can sometimes also be biased in particular ways. For instance, there can be an urban or more accessible area bias in the statistics on levels and

³⁸ For more information on CWIQ, see <http://www4.worldbank.org/afr/stats/cwiq.cfm>; copies of the questionnaire, brochure, technical notes and handbook can be downloaded from this website.

patterns of morbidity because many sufferers from a particular disease, especially those in poor or remote areas, do not visit a hospital, health center or an aid post.

- There is also an important need to link administrative data with data from other sources such as census and survey-based data. For instance, by such linking of data, performance in family health programs was found to be related to staff-population ratios (Cibulskis and Hiawalyer, 2002). Combined with mapping techniques, such data can be an important tool for intra- and inter-sectoral resource allocation (for instance, where to open, close or upgrade facilities or deploy more staff) and the targeting of poverty reduction interventions.

NATIONAL ACCOUNTS, MACROECONOMIC AND GOVERNMENT FINANCE DATA

4.7 A full assessment of these data is beyond the scope of this Poverty Assessment, and the discussion here is confined to only a few remarks.

- The NSO publishes a Consumer Price Index (CPI) on a quarterly basis, the weighting diagram for which is based on a household expenditure survey of wage earner households in urban areas conducted in 1975-76. The weighting diagram for the CPI is in need of urgent updating. This need itself has now been well-noted for some time, but implementation has been held up for lack of a recent consumption survey.
- The current CPI is an index for urban areas only covering the 5 cities of Port Moresby, Goroka, Lae, Madang and Rabaul. However, estimates of the extent of (and changes in) the urban-rural cost of living differentials are important for a number of reasons – amongst others, for a correct assessment of disparities in real standards of living across urban and rural areas. Thus, when updating the weighting diagram for the CPI, it would be important to consider developing both an urban and a rural CPI.
- One significant issue with government financial statistics relates to provincial budget data. The budget documents give summary figures on provincial revenues and expenditures, but detailed information on provincial expenditures disaggregated by function and category are typically unavailable, leading to considerable unresolved issues with respect to both the effectiveness and incidence of provincial spending,³⁹ not to mention the range of issues related to inter-governmental fiscal relations. The NEFC has recently mounted an effort to construct such detailed provincial budgets for the years 2001-03 which will yield valuable information. Such efforts however need to be institutionalized.

³⁹ For instance, in the companion PESD study, it was not possible to come up with more precise estimates of leakage of education subsidies to primary schools. For lack of detailed information, the estimates had to be conditioned on two alternative assumptions on how the provincial subsidies were allocated amongst the primary and post-primary components (World Bank, 2004c).

PARTICIPATORY / QUALITATIVE ASSESSMENTS

4.8 Qualitative and/or participatory data are a useful complement to quantitative information on poverty. In the PNG context, qualitative/participatory assessments have often been conducted and utilized for examining sectoral issues. For example, recently a qualitative study of 12 primary/community schools was undertaken as part of the work in support of this poverty assessment, which complemented a quantitative survey on public expenditure and service delivery (PESD) focusing on the education sector.⁴⁰ More broadly, a participatory poverty assessment was conducted in 2001 (with support from the Asian Development Bank) which provided useful qualitative data on perceptions of the poverty problem in PNG, some of which have been referred to in the preceding chapters of this report. There will continue to be a role for such assessments undertaken on a periodic basis in the future, and these should ideally be integrated into the overall monitoring and evaluation system.

4.9 A final word on **data dissemination and data use**. In the context of monitoring of PNG's health sector, it has been observed that the ability of information systems to deliver benefits to stakeholders is ultimately critical to their sustainability (Cibulskis and Hiawalyer, 2002). The point applies to M&E systems more generally, and brings up the important issues of data dissemination and data use. As hinted in the preceding discussion, even the limited amount of data produced in PNG have remained substantially underutilized.

4.10 This is both a matter of the supply of and demand for data. On the supply side, more effort needs to go into easing the access and provision of data by statistical agencies; the provision of anonymized unit record data (that is critical for any substantial policy analysis) is consistent with PNG's Statistical Services Act of 1980. Improving data supply will involve strengthening the capacity of the statistical agencies in developing and maintaining their data management systems, which in turn may require upgrading human and financial resources available to these agencies. The agenda on the demand side is mostly long-term in character including measures to strengthen the practice of evidence-based policy making (e.g. training on policy uses of data) and fostering active links between data gatherers and current or potential data users (the academic/research community as well as civil society). There is also a role for aligning the poverty monitoring system directly with the budget cycle such that relevant information can feed into decisions on resource allocation in a timely manner.

⁴⁰ See Chapter 3 above and World Bank (2004c).

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