

EVALUATION OF THE WORLD BANK GROUP'S ACTIVITIES IN THE EXTRACTIVE INDUSTRIES

Background Paper

Papua New Guinea Country Case Study



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Document of the Operations Evaluation Department

This report was prepared for OED by Sunil Mathrani (consultant). The views expressed herein do not necessarily represent the views of OED or the World Bank.

Currency Equivalents (annual averages)

Currency Unit = Kina (K)

1993	US\$1 = K0.98	1997	US\$1 = K1.43	2001	US\$1 = K3.37
1994	US\$1 = K1.00	1998	US\$1 = K2.06	Nov. 2002	US\$1 = K4.00
1995	US\$1 = K1.28	1999	US\$1 = K2.54		
1996	US\$1 = K1.32	2000	US\$1 = K2.76		

Abbreviations and Acronyms

ADB	Asian Development Bank
CAS	Country Assistance Strategy
DF	Development Forum
DOM	Department of Mining
DPE	Department of Petroleum and Energy
GTA	Gas to Australia Project
GOPNG	Government of Papua New Guinea
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion Report
ILG	Incorporated Landowners Group
IRC	Internal Revenue Commission
IOC	International oil company
LNG	Liquefied natural gas
MIGA	Multilateral Investment Guarantee Agency
MOA	Memorandum of Agreement
MOP	Memorandum of the President
MRDC	Mineral Resources Development Company
MRSF	Mineral Resources Stabilization Fund
OED	Operations Evaluation Department
PD	Petroleum Division
PPAR	Project Performance Assessment Report
PNG	Papua New Guinea
SAR	Staff Appraisal Report
TA	Technical assistance
TCF	Trillion cubic feet

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Preface

This case study was prepared as part of an Operations Evaluation Department assessment of World Bank Group activities in the extractive industries sector. The larger study is available on the Internet: <http://www.ifc.org/oeg/EIEvaluation/eievaluation.html>

In Papua New Guinea (PNG), the Bank has been involved in the oil sector for more than 20 years and has made three technical assistance loans to the government during this period. Bank assistance to the mining sector is more recent and also takes the form of technical assistance and advisory services. MIGA issued two guarantees for a mining project in the late 1990s. Papua New Guinea was selected as an example of a small, less-developed country whose government is heavily dependent on revenues from extractive industries and faces the challenge of managing these resources for the general economic development of the country. It is also an unusual example of direct sharing of resource rents with local communities in the mining and oil producing areas.

This case study was prepared by Sunil Mathrani (Consultant) under the supervision of Andres Liebenenthal (Task Manager). It is based on a review of Bank project files, economic and sector work, interviews with Bank staff, industry representatives, and government officials in Papua New Guinea, and on the findings of a mission to the country in February 2002. The latter also carried out a Project Performance Assessment of two petroleum technical assistance projects, which was issued as a separate report (No. 24405) in June 2002. It contains complementary information on World Bank involvement in the hydrocarbons sector. (Also available on the Internet: <http://www.ifc.org/oeg/EIEvaluation/eievaluation.html>)

The case study first presents a brief description of PNG's extractive industries, followed by a more detailed account of World Bank Group involvement in them. The main issues confronting the petroleum and mining industries are then presented, followed by an evaluation of the Bank Group's assistance. The report concludes with some suggestions that merit further reflection by GOPNG and its development partners.

Following OED procedures, the draft of this Country Case Study was sent to GOPNG for comments before finalization, but no comments were received. The author wishes to thank Graeme Hancock, Salah Khwaja, Michael McWalter, John Strongman and Kathy Whimp for their thorough reviews and extensive comments on draft versions of this report.

1. Macroeconomic Context

1. Papua New Guinea is a resource-rich country of over 5 million people with a dual economy and low human development indicators. In rural areas, where 80 percent of the population lives, the main activity is subsistence agriculture. Almost 99 percent of the land area is under customary (collective) tenure and only a tiny proportion is held privately or by the State. As a result, land cannot be easily bought or sold as a commodity, which is a constraint on many economic activities, including plantation agriculture. PNG exports coffee and oil palm grown by smallholders, but is a net importer of food crops such as rice.

2. The formal sector of the economy is heavily based on extractive industries—gold, copper, oil, and timber, which still depend on foreign capital and expatriate management. Mining and petroleum account for more than a quarter of GDP but operate essentially as enclaves, with a high proportion of imported inputs. Virtually all the production of these sectors is exported and they account for about 70 percent of PNG's total exports. Once the construction phase is over, they employ relatively few workers and in recent years total employment by the oil industry has shrunk.

3. The mining and petroleum industries in PNG are now mature and no longer experience the rapid growth of the past two decades. Despite very substantial unexploited resource potential, both industries could go into serious decline within the next five years. At the time of this review in early 2002, exploration for both oil and minerals had virtually come to a halt and appeared unlikely to resume without significant improvements in the investment climate.¹

4. Since independence in 1975, real annual average GDP growth of about 2.4 percent has barely exceeded population growth. In recent years growth has slowed further and now fails to keep pace with the increase in population. Most of the economic growth has been due to the extractive industries, which employ only about 5 percent of the formal sector labor force. Consequently, the bulk of the population has experienced declining per capita real incomes. During the 1990s, economic growth averaged 4 percent annually, much higher than in the 1980s due to sharply increased mineral and oil production. GOPNG has come to be heavily reliant on these sectors for its revenues: in 2001 the petroleum sector directly contributed over US\$100 million to state coffers, or about 17 percent of total government revenues. The mining sector contribution to GOPNG's revenues in 2001 was about \$125 million. The national budget is also dependent on aid grants, which contribute an additional 20–25% to its GOPNG's revenues.

5. Despite the higher economic growth in the 1990s and the inflow of resource rents to GOPNG, poor utilization of these funds meant that key social indicators of development barely improved during the past decade. Total employment outside oil and mining declined, while about 50,000 people enter the labor force each year. PNG's social indicators remain well below those of middle-income countries with a similar per-capita income.² Even the prime minister described the 1990s as a “lost decade” of development for PNG. Macroeconomic performance was also poor, with alternating cycles of expansion and contraction, persistent high inflation and a depreciating currency during the past decade. Real growth was negative in the past three years, (2000-02). As indicated in OED's Country Assistance Evaluation,³ “the inability to generate a supply response in the non-mineral sector remains a critical failure in PNG's development efforts to date.” The rising unemployment problem exacerbates an already poor law and order situation, with high levels of crime in many areas.

1. Changes introduced in the November 2002 budget significantly restored the attractiveness of PNG's fiscal regime for mining and petroleum. This has already resulted in an increase in mineral exploration licensing and exploration activity during 2003.

2. Adult literacy stagnated at about 52% and life expectancy was only 58 years, below the average for low-income countries. Infant mortality, at 79 per 1000 live births, is also high.

3. Report # 20183, March 2000.

The Mining Sector

6. Large-scale mining has a long and checkered history in PNG, which began in the mid-1960s with the Bougainville copper project. Major deposits of gold, copper, and nickel were discovered in the 1970s and 1980s and the country still has considerable undiscovered potential. Five substantial mines are in operation today, Ok Tedi (copper), Porgera,⁴ Misima, Lihir, and Tolukuma (gold), but all except Lihir are expected to shut down within the coming decade as reserves are depleted. However, three new gold mines were at the advanced feasibility stage in mid-2003. The Bougainville copper mine closed in mid-1989 due to civil strife and has never reopened. A nickel-cobalt mine project is at an advanced stage of preparation, but has not reached financial closure.

7. Copper exports in 2000 were about 130,000 tons and gold exports about 73 tons, representing US\$900 million in value. Total mining exports were about US\$1100 million in 2001. Mining accounts for nearly 20 percent of GDP, but direct employment by the large mines is small—they only have about 7,000 workers, about 3 percent of all formal sector employees. However, the indirect employment impact of these mines is substantial in logistics, transport, supply and other support services. A further 50,000 people are estimated to be involved in small-scale, informal mining activities, albeit some on a part-time basis only. Health hazards arising from the handling and disposal of mercury by artisanal miners are being addressed by a project funded by AusAid.

8. The Ok Tedi mine, the largest mine in PNG, has been plagued by environmental issues ever since it went into production in 1984 because of the massive discharge of tailings and waste rock into the Fly River system. These discharges are expected to continue until production ceases in 2010. The largest investor⁵ in the project, BHP, wrote off its investment and pulled out in February 2002, largely because it no longer wished to be involved in a project with such widespread and serious environmental impacts. Its 52 percent interest in Ok Tedi was transferred to an independent trust, the Sustainable Development Program Company, which will use its dividends from the continued operation of the mine for long-term development activities. Despite the continuing environmental damage, GOPNG decided that the social and financial consequences of immediate mine closure would be too severe and that the next eight years should therefore be devoted to establishing other sustainable economic activities to replace the mine after 2010.

9. Despite attractive geology, mineral exploration activity in PNG was at an all-time low in 2002, for several reasons. Foremost of these was the perceived unattractiveness from a financial point of view, as indicated by an ADB-financed review of taxation,⁶ which stated, “the fiscal regime has become uncompetitive, confidence in fiscal stability has been sharply eroded and the regime has become less transparent.” However, the poor operating environment for investors, worsening law and order problems, and frequent incidents with landowners also act as deterrents to new investment. The 15 percent rate of return threshold for the imposition of an Additional Profits Tax (in effect a “super profits tax”) was too low, given that many international firms expect a minimum post-tax rate of return of at least 15 percent. PNG’s attractiveness to external investors has therefore declined in relation to its major competitors for fresh investment in mining. In an attempt to turn around the fall in exploration, several improvements in incentives were announced in the budget for 2003, most crucially the abolition of the additional profits tax.

4. One of five largest gold mines in the world.

5. Inmet Mining (Canada) has 18% of the equity, GOPNG 15%, Western Province 12.5%, and the mine area landowners 2.5%.

6. Review of the fiscal regimes for mining and hydrocarbons, October 2000.

The Petroleum Sector

10. The first commercial oil discovery in PNG was in the Southern Highlands Province in 1986. Oil production began in 1992 in the Kutubu area of the Southern Highlands, about 500 kilometers northwest of Port Moresby. Peak production of 150,000 barrels per day (b/d) was achieved in 1993. For a brief period in 1996–97 oil overtook minerals as PNG’s largest export and it still accounts for over 25 percent of export earnings and about 12 percent of GDP, despite declining output (to less than 60,000 b/d in 2001).⁷ Oil continues to make a significant contribution to government revenues. The state received US\$108 million in taxes and royalties⁸ from the sector in 2001, and has grown heavily dependent upon these oil revenues during the past decade. No other sector is capable of making up for the anticipated shortfall in the coming years as oil production continues to decline.

11. While PNG was perceived as an attractive home for petroleum investment in the late 1980s and early 1990s, its image has changed in recent years and it is now seen as a difficult and unattractive environment. Major companies have withdrawn,⁹ and exploration has almost ceased. As in the mining sector, it suffers from several handicaps in attracting foreign companies to explore for oil, at a time when other countries (competing with PNG to attract foreign investment capital) have improved their fiscal regimes and opened access to new resources.¹⁰ Unless quickly reversed, the fall in exploration will have serious consequences for GOPNG’s medium-term revenues and for public spending in general.

12. PNG’s proven and probable gas reserves (about 15 trillion cubic feet) are about seven times as much as oil in energy terms, and are expected to increase. Virtually all associated gas is currently reinjected into the oilfields because of the lack of a sufficiently large domestic market to justify the construction of a pipeline. A small amount of non-associated gas has been produced from the Hides field since 1991 to generate power for the Porgera goldmine. However, a major (US\$3.5 billion) export project via a submarine pipeline across the Torres Strait to Queensland, Australia, is being prepared by a consortium of private investors. GOPNG is also likely to take a significant equity stake in the project. Over a 30-year period, about 5 trillion cubic feet (TCF) of gas is expected to be exported to Australia through a 3,200-kilometer-long pipeline system. About two-thirds of the investment would take place in PNG, making the Gas to Australia (GTA) project the country’s largest-ever industrial development.

13. GTA is a crucial project for both the sector and the national economy. While its initial contribution to government revenue will be modest, there will be secondary effects through the enhanced attractiveness of exploration and the development of gas related industries. It will also provide a breathing space for diversifying the productive base of the PNG economy away from its over-dependence on petroleum.

14. In comparison with mining, the environmental impact of petroleum development in PNG has been small. Extraction and processing facilities require much less land and fewer access roads have had to be built through forests. Numerous well sites in mountainous terrain resemble “islands” and are accessible only by air. There is no problem of major waste or tailings disposal and no gas is flared.

7. Production in 2002 is expected to be about 50,000 b/d.

8. Royalties are fully disbursed to landowners and provincial governments and therefore do not appear as revenues in the central government budget.

9. Such as BP, Shell, Mobil, Amoco, BHP Petroleum.

10. In the late 1990s, even India, one of the fiercest champions of exploration by its national oil corporation, sought bids from international oil companies for exploration in new areas under more attractive fiscal terms.

2. History of World Bank Group Involvement

Mining

15. The World Bank Group¹¹ did not have an explicit strategy for mining in PNG in the 1990s. The implicit strategy appears to have been to leave sector development entirely to the private sector and to focus on advice to GOPNG to better manage and supervise mineral development. The management and utilization of revenues generated for GOPNG by mining projects was outside the ambit of the WBG's sectoral assistance strategy. Even though the sole Bank lending operation in the mining sector, a US\$10 million TA project¹² to strengthen the Department of Mining, was not approved until mid-2000, the Bank was actively involved in an advisory capacity, although often only on an informal basis. The mining TA project is still under implementation and aims to strengthen GOPNG's capabilities to administer, regulate, and audit mineral exploration and mining so as to improve sector performance in environmental, safety, and social matters. Sustainable development, mine closure policy and planning are also to be addressed, given the short remaining life of most of PNG's major mines. Improved availability of geological data and better sector policies and regulations to make PNG more attractive to potential investors are also planned. These would help to increase exploration activity, essential for maintaining the sector's long-term prospects.

16. The need for the project had been heightened by the decline in the government's own administrative budget in the wake of the macroeconomic crises of the late 1990s in PNG and the related loss of specialized management capability. Expatriates employed by the Department of Mining left and were not replaced either by qualified nationals or by other expatriates, resulting in a weakening of its capacity. Good results achieved in the petroleum sector in the mid-1990s by the Bank's TA project (para. 71) also provided a model that merited emulation in mining, an equally crucial sector.

17. MIGA provided guarantees totaling nearly US\$77 million to the shareholders and lenders to the Lihir gold project in 1996. On the other hand, there has been no IFC involvement to date in either mining or petroleum.

18. Despite its late start on lending in the mining sector, the Bank had been closely following the development of the sector since the mid/late 1980s. In a five-year period from the late 1980s through to the early 1990s, the Bank produced an annual economic report on PNG that always reviewed developments in petroleum and mining. This was the Bank's initial entry point to the mining sector and was followed by informal assistance to GOPNG to assist it in developing financial models of each major mine, thereby enabling the Treasury to make revenue projections for budgetary planning purposes. The Bank's focus during the 1988–93 period was primarily the management of the resource flows to GOPNG, including the sterilization of surpluses via a stabilization fund, the risks of PNG suffering "Dutch disease" and the macroeconomic consequences of the minerals boom in PNG at that time (para. 25). Several of these concerns soon turned out to be non-issues as declining overall government revenues¹³ combined with rising expenditures put paid to the expected surpluses. Distributional issues surrounding the division of resource rents had not yet reached the prominence they have today and were given scant attention by the Bank. Since 1993, economic reports (CEMs)

11. The World Bank Group includes the International Development Association (IDA), the International Bank for Reconstruction and Development (IBRD), the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA). In this report, the combination of IDA and IBRD are referred to as "the Bank."

12. Mining Sector Institutional Strengthening TA Project (Ln. 7018-PNG).

13. In part due to the closure of the Bougainville copper mine.

on PNG are no longer produced annually and the extractive industries received much less coverage in the two subsequent CEMs.

19. The Bank undertook a review of environmental issues in the mining sector in 1992¹⁴ that provided GOPNG with specific recommendations for improved legislative, institutional, and monitoring arrangements for environmental matters. It did not identify any serious concerns regarding impacts in highly sensitive protected ecological areas. However, it did raise concerns about the environmental impacts of the Ok Tedi mine and recommended a reconsideration of all options for waste and tailings disposal. A similar review was carried out again in early 2000 as part of the preparation of the mining TA project and served to provide input to the design of the project. Apart from Ok Tedi, the review found that environmental performance at all the large projects was generally satisfactory.

20. A conference on Mining and the Community for Asian and Pacific nations was co-sponsored by the Bank in 1998¹⁵ to address social and community issues. It is widely seen as having had an important impact on the awareness of these issues, both in PNG and in the region. PNG's approach to revenue sharing with local communities and their participation in the project approval process via development forums (para. 37) emerged as progressive and innovative examples for other mining nations. The conference also served as a trigger for the Bank to commit itself to a more substantive involvement in the sector through a lending operation that followed in 2000. The Lihir gold project was also reviewed in detail in 1998 as part of a wider Bank study¹⁶ of social issues in extractive industries.

21. In 1999, the prime minister of PNG requested the Bank to review technical studies on waste management at the Ok Tedi mine to assist GOPNG in dealing with the social and environmental tradeoffs involved in a decision on the long-term future of the mine. GOPNG was faced with the option of closing the mine immediately on environmental grounds¹⁷ and forgoing 10 years of operating profits as well as incurring major social and economic costs relating to closure. Despite no prior involvement with the project and a general reluctance to involve itself in potentially sensitive relations between governments and private investors, the Bank accepted the request. The Bank's internal review of the studies found that insufficient attention had been paid to the social aspects of mine closure and recommended the preparation of a mine closure strategy and plan with the full involvement of the stakeholders.

Petroleum

22. The Bank's involvement with the petroleum sector in PNG dates from 1980, when GOPNG first sought its assistance. This led to the approval of a Petroleum Exploration TA Credit (Cr. 1279-PNG) in mid-1982, a project that provided the technical basis for the exploration promotion of PNG's sedimentary basins. The integration, analysis, and interpretation of geological and geophysical data of the four principal sedimentary basins in PNG provided an excellent basis for promoting them to international oil companies for exploration. Twenty-eight new petroleum prospecting licenses were quickly awarded and the rapid commercial discovery of oil at Iagifu in the Southern Highlands occurred in 1986. Thus the WBG was directly implicated in the birth of PNG's oil and gas industry.

14. Environmental Aspects of the Mining Sector, September 1992 (unpublished, but made available to GOPNG).

15. Held in Madang, PNG, with participation from other Asian mining countries.

16. "Integrating social concerns into private sector decisionmaking: A review of corporate practices in the mining, oil and gas sectors" by K. McPhail & A. Davy, Discussion Paper No.384.

17. Given that the waste discharges in to the Fly River far exceed its carrying capacity, closure was the best environmental option, especially as impacts are likely to worsen in the future.

23. A second operation¹⁸ followed in mid-1993 to help GOPNG manage and supervise a nascent oil production industry. The project had a major institutional development impact by successfully trained Papua New Guineans to take over all senior management positions in the ministry, thereby enabling the phase out of expatriates from line management. The project was also instrumental in the formulation and drafting of an extremely important piece of sectoral legislation, the 1998 Oil and Gas Act.¹⁹

24. Finally, a third project, the Gas Development and Utilization TA project,²⁰ was approved in 2000 and is still under implementation. It is designed to help GOPNG develop the necessary capabilities to supervise and manage the development of the country's substantial gas resources. The project is providing valuable assistance to GOPNG in finalizing the necessary agreements with the developers of the GTA project. As was the case for mining, none of these hydrocarbons projects addressed the broader issues of the management of resource rents. The latter formed part of the Bank's overall policy dialog with GOPNG on macroeconomic issues, as well as an element in the formulation of the Bank's assistance strategy (CAS) for PNG.

3. Economic Benefits and Distribution

Management of Resource Rents

25. The initial expectation in the late 1980s/early 1990s on the part of GOPNG (as well as the Bank and other informed observers) was of large budgetary surpluses in the mid/late 1990s. Therefore, much effort was devoted to mechanisms to manage them, including proposals for their "sterilization" in foreign currency held abroad. A Mineral Resource Stabilization Fund (MRSF) had been set up by law in the mid-1970s with a view to insulating public expenditures from large annual swings resulting from unstable mineral revenues. But subsequent legal amendments permitted GOPNG to make large drawdowns from the fund and as well as increase its borrowings in the capital markets against the MRSF reserves. Thus, the maintenance of surpluses in the MRSF did not curtail excessive public spending or increases in the money supply. Nor did the MRSF help smooth government revenues over economic cycles, which was one of the purposes of setting it up.²¹ Finally, since the fund was invested locally rather than offshore, it did not earn PNG any interest payments in foreign currency, which could have enhanced its value considerably in local currency terms, given the weakness of the Kina and the relatively high interest rates that could be earned on dollar deposits in the 1990s. The MRSF, which peaked at about K700 million was wound up at the end of 1999, when the remaining balance in the fund was used to retire about a quarter of GOPNG's high-cost, domestic short-term public debt, which had reached K2.5 billion, or about 25 percent of GDP.

26. In addition to a series of macroeconomic crises (para. 5), the 1990s in PNG were characterized by a decline in the quality of public administration and governance, especially regarding the use of public monies. Both the Bank and the IMF have expressed concerns about the quality of public financial management. PNG has adequate legal instruments and regulatory procedures for public spending, its accountability and reporting, as well as penalties for non-compliance. An independent auditor general audits all government accounts, albeit with some delays. But observance and enforcement were weak

18. The Petroleum Exploration and Development TA Project (Ln 3670-PNG).

19. See the PPAR (Report 24405) of June 2002 for this project.

20. Ln. 7019-PNG.

21. According to the PR for the Governance Promotion Adjustment Loan (para. 49), "the resources from this Fund have allegedly been subjected to considerable diversion and abuse."

and control over budget and public expenditure in general became lax in the 1990s. Non-compliance with legal requirements is still a significant governance issue. Checks and balances that exist such as the Parliamentary Public Accounts Committee were ineffective or fell into disuse.²² The latter had not met for three years, but has become much more active since mid-2002 when a new government came to power. The central government has difficulty keeping track of expenditures by subnational governments due to limited reporting by the latter, despite the legal requirement to do so. Much remains to be done to improve fiscal transparency.

27. There is widespread agreement that the government has made poor use of the resource flow to it from both the petroleum and mining sectors.²³ A large proportion of these revenues are consumed by non-productive sections of the society, such as the triple layer of government.²⁴ Revenues that have flowed to provincial governments have had little developmental impact due to weak institutional capabilities to manage these resources for the collective interest.²⁵

28. In effect, PNG's non-renewable resources are being depleted to finance current consumption rather than investment. Matters are made worse by the very poor returns on public investments, examples of which have been well documented in many other reports.²⁶ Many instances of outright leakages from misappropriation of funds or padding of public contracts have also been publicly reported.

29. The 1995 CAS and CEM both highlight the excessive level of current spending at the expense of capital expenditure and the declining quality of public services, but appear to have had little impact on GOPNG policy. On the contrary, a 1995 constitutional amendment devolving significant powers to the provinces for projects and services exacerbated the problem by weakening expenditure controls without any improvement in local level implementation capabilities. Accountability and transparency both suffered as a result of this major political and legal change to the balance of power within the State. Under the 1997–99 administration, corruption worsened and the civil service became politicized to an unprecedented extent. Much damage was wreaked upon the economy as well as on PNG's external image by the mismanagement and corruption of that administration.

30. Considerable efforts were made by the 1999–2002 Morauta government to rectify the shortcomings in fiscal management, improve transparency, and restore expenditure controls. These efforts have received considerable donor support, including from the IMF, ADB and the Bank in the form of the Governance Promotion Adjustment Loan (GPAL), approved in mid-2000.²⁷

22. Sources: The President's Report for the Governance Promotion Adjustment Loan, IMF report on Fiscal Transparency practices in PNG, October 2000.

23. A recent analysis of revenue flows from mining projects to various stakeholders (central government, provincial government, local government, landowners and employees) is contained in background papers to the GOPNG Green Paper dated 1st February 2003 on sustainable mining policy. These papers are online at www.consultpdm.com/pngmines

24. PNG has national, provincial, and local levels of government.

25. In Kutubu, although large sums of money flowed from Chevron to the provincial government to support investments in infrastructure and services, there is little to show for it because the provincial government failed to carry out its responsibilities (from "How oil, gas and mining projects can contribute to development," K. McPhail, Finance & Development, December 2000).

26. One such report, "Western Province, PNG, Development Status & Prospects," AusAid, October 2000 states in the summary "The majority of the population receives few obvious benefits from the province's income...while financial resources are considerable, little tangible has so far been achieved in terms of infrastructure or service delivery."

27. However, by September 2002 when the new government took over, the projected deficit had expanded to around K800 million (8% of GDP), following significant unbudgeted spending by the outgoing Morauta government in the lead up to the 2002 election.

31. GPAL was a fast-disbursing adjustment loan of US\$90 million in three tranches, linked to the completion of a number of actions designed to strengthen economic management and to improve governance. These included the establishment of integrated payroll and human resources records management, repeal of the Mineral Resource Stabilization Fund, the creation of a debt management office in Treasury, publication of budget reconciliation and projects, strengthening of the Auditor General's Office, Ombudsman Commission and the Parliamentary Public Accounts Committee, and strengthening of the central government procurement system, the completion of audits for public companies to internationally accepted accounting standards and the implementation of recommendations to the Government by the Commission of Inquiry into the National Provident Fund. The GPAL has been disbursed, albeit with some delays due to difficulties in full compliance with the tranche release conditions relating to privatization of SOEs.

Resource Rent Sharing

32. In the late 1970s and 1980s, the distribution of benefits from mining projects was essentially a tussle between the national and provincial governments, most particularly over the benefits from the Bougainville copper mine. The national government asserted that revenues from mining should be used for the benefit of the population as a whole and that it was best placed to ensure the most effective utilization of these rents. Nevertheless, the Organic Law on Provincial Government was passed in response to secessionist pressure from Bougainville leaders. It entitled provincial governments in mining areas to receive all mineral royalties (fixed at 1.25 percent). They had been excluded from the bilateral agreements between GOPNG and the developers of the Bougainville, Ok Tedi, and Misima mines. The provincial governments argued that they deserved a much bigger share of the revenues in compensation for the disruption and loss of non-renewable resources. At that stage, the rights of the people directly affected by mining projects (often referred to as landowners) to also receive a share in the benefits do not seem to have figured in this debate. It was as a result of lobbying of GOPNG by provinces seeking an increase in the *rate* of royalties and an increased role in the negotiation of projects that the Development Forum process (para 37), came in to being.

33. The fundamental question is whether subsurface natural resources belong to the State. Some argue that the PNG Constitution says they do, although this is not explicitly stated.²⁸ But Section 53 of the Constitution does state, "possession may not be compulsorily taken of any property...unless it is required for a public purpose" and that "just compensation must be made on just terms by the expropriating authority." Another interpretation is that natural resources were already appropriated by pre-Independence legislation before the Constitution came into effect and therefore no compensation is due.

34. If all petroleum resources do belong to the State as explicitly stated in the 1977 Petroleum Act and its 1998 successor Oil & Gas Act, then the State can decide how much of the rent from exploiting them it will give away, in what form and to whom. But this is a premise that few citizens accept, believing that what lies under their land is also their property.

35. Yet Section 6 of the 1998 Oil & Gas Act explicitly states:

(1) Subject to this Act, but notwithstanding anything contained in any other law or in any grant, instrument of title or other document, all petroleum and helium at or below the surface of any land is, and shall be deemed at all times to have been, the property of the State.

28. The directive principles of the Constitution include: "We declare our fourth goal to be for Papua New Guinea's natural resources and environment to be conserved and used for the collective benefit of us all, and be replenished for the benefit of future generations."

(2) Nothing in Subsection (1) shall be construed as an additional acquisition of property in relation to Section 53 of the *Constitution* beyond that which prevailed under the former Act and all previous Acts.

36. Regardless of the constitutional ambiguity and which legal argument is ultimately upheld, landowners in PNG do not accept that “their” resources can be appropriated without compensation, and given the weak capacity of the State and its lack of reach into rural areas, it is the power of veto over access to resources that really counts, not the legal ownership. No developer of an extractive industry project in PNG would proceed with a major investment in the absence of landowner approval. Hence the importance of good local community relations (especially benefit sharing arrangements), for project developers and GOPNG. The argument for a legal entitlement to a share of benefits has been lent some weight by Section 98 of the 1995 Organic Law on decentralization, which provides that developers shall pay “landowners benefits in respect of natural resources obtained.” These are later referred to as “royalties, land owner premiums, compensation and other assistance,” but without the rate or nature of these payments being specified.

37. This message was emphatically brought home to GOPNG in mid-1989 when civil strife on Bougainville led to the closure of the copper mine with severe macroeconomic consequences. Even though GOPNG had just adopted a pioneering consultative process called the Development Forum (DF) for the Porgera gold mine, it did not apply it retroactively to Bougainville. The DF process ensures that local community (landowner) and provincial government interests are represented alongside the national government in the process of granting approval for extractive industry projects. It was formalized in the 1992 Mining Act and is also used for petroleum projects.

38. Development Forums serve as a venue for (a) project developers to share information with the stakeholders on the nature, scope, and impact of the project, and (b) stakeholders to agree on how the project benefits are to be shared. These agreements are then recorded in a series of Memoranda of Agreements (MOA) between the different parties,²⁹ which spell out the commitments by the two governments to provide infrastructure and services to the landowners, as well as the respective shares in project equity and royalty payments. In return, the landowners commit themselves not to disrupt the project. Finally, all parties agree to an ongoing consultation process throughout the life of the project. The MOAs thus provide a transparent, formal record of commitments of all parties that can later be independently verified for compliance.

39. Following the success of the Porgera DF, retroactive MOAs were negotiated for the Misima and Ok Tedi mines, with the landowners receiving a benefits package similar to Porgera. However, more generous packages were agreed under subsequent projects, particularly in oil and gas.³⁰ In general, there is strong grassroots pressure and a noticeable trend toward a rising share of benefits for landowners (at the expense of GOPNG) in each successive project. The State clearly lost out in this competition over the distribution of resource rents, but the Treasury has now begun to claw-back funds through tax changes introduced in the November 2002 budget.³¹ Whether these rents are used more effectively for economic development when in state or private hands is a moot point. To date neither side has demonstrated effective use of these resources in the pursuit of sustainable development.

29. The project developer was not a party to these MOAs prior to 1994. Since then mining developers have become signatories to MOAs in the interests of transparency and accountability for all parties.

30. In addition to GOPNG transferring all royalties to landowners and provincial governments, it also pays out to these latter (from its own revenue share of projects), a Special Support Grant equivalent to 2% of the export value of the minerals or oil.

31. GOPNG reduced the flow of Special Support Grants to mining provinces by 75%, (partly in recognition that they were not generating the desired outcomes), and reduced the Infrastructure Tax Credit Scheme from 2% to 0.75% of assessable income for a mining company.

40. Filer³² points out that in PNG there is a “popular perception that equates development with the collection of resource rents and that there is a real historical tendency for an ever-increasing proportion of that rental income to be obtained in this form—and an ever-diminishing portion of that rent to be available for ‘rational investment’ on the part of the State or in accordance with national and provincial development plans.” This also has the perverse effect of making GOPNG less inclined to devote effort and resources to economic development in mining/petroleum areas, thereby putting the project developers under ever more pressure from local communities to make up for the shortcomings of the state in the provision of infrastructure and services.

41. The development of oil and gas resources in PNG during the 1990s has been relatively benign from a human perspective, even if the impact on traditional society in project areas has been enormous. Coming after the closure of Bougainville and the establishment of the Development Forum process, the rights of local communities to a direct share in the rents was accepted from the start. No forced land acquisition or expropriation took place, and confrontations between the oil industry and landowners have not degenerated to the point of violence. The environmental “footprint” of oil and gas exploration and development has been much smaller than that of mining, so the traditional lifestyles of fewer people have been affected. Nevertheless, the indirect social impact of a petroleum project can be larger than that of mining because the benefits are distributed among all the landowners within the petroleum license areas, which are usually much larger than mining tenements. There is also a lot less ‘rationality’ in the link between the receipt of a benefit and the imposition of an environmental impact – because many benefit recipients (for example, at the extreme edge of a license area, or a long way from any drilling or well head), may be quite unaffected by the physical presence of the project.

42. During the approval process for the Kutubu oil project GOPNG accepted demands from landowners affected by the project for a share in the *benefits* to be received by the state, even though the 1977 Act only entitled them to compensation for deprivation and damage resulting from the project. Ultimately, GOPNG yielded 30 percent of its equity in the Kutubu project to landowners and provincial governments in the two affected provinces. The principle of sharing royalties with the local community was also accepted at the same time.

43. For new projects, the 1998 Oil and Gas Act³³ formally reserves an equity and royalty benefit for project area landowners, as well as local and provincial governments not exceeding 20 percent of the total net benefit to the State from petroleum projects. This was a way of safeguarding the interests of the rest of the PNG population and of future generations while explicitly recognizing the rights of the people living in areas where natural resources are extracted. An entitlement to benefits depends on whom the Minister of Energy determines³⁴ are landowners, following (a pre-project) investigation process known as social mapping to identify local social structures, landownership and to demarcate boundaries, culminating in the formation of incorporated land groups.³⁵ Many of these resource developments occur in remote areas that are sparsely settled and where there may have been longstanding disputes that have gone unresolved, but have not really been an issue because no one is living on the land under dispute. However, if large sums of money are at stake, it becomes much more important to establish genuine “ownership.” Project development proposals in PNG almost always lead to conflicts over landownership.

32. C. Filer, in “Compensation for resource development in PNG,” by S. Toft (ed.) 1997.

33. Assistance in drafting this Act was provided under the Bank’s second petroleum TA project (para. 23).

34. Under the Land Groups Incorporation Act.

35. The main purpose of most ILGs today is to manage the distribution of benefits from extractive projects and to provide a means of selecting community leaders to interact with GOPN and project developers (from K. Whimp, “Law and Policy of Landowner Organization and Representation,” 1998)

44. Given that GOPNG policy accords great importance to landownership as the criteria for receiving benefits, the mechanisms by which land ownership disputes are settled needs to be improved. However, since the events of 1994–95,³⁶ donors have shied away from aiding the land dispute settlement or land ownership decision-making processes, with the consequence that they are deteriorating faster than many other parts of the bureaucracy.

45. It can be argued that the present distribution of resource rents in PNG has gone too far in favor of present landowners within license areas and insufficient provision is made for future generations³⁷ in project areas as well as for other areas of the country. It also favors specific landowners and their leaders disproportionately over all project-affected persons (PAPs), but in the present political environment, GOPNG could not switch to a system in which benefits were tied to impacts rather than land ownership.³⁸

4. Environmental, Social, and Governance Issues

Environmental Issues

46. Most environmental complaints have focused on PNG’s mining industry, rather than its oil and gas industries. All mines in Papua New Guinea currently treat mine tailings and then dump them into the rivers and ocean, with varying impacts on local ecology. Riverine disposal has been highly problematic due to siltation, flooding of cultivable land and contamination from toxic chemicals and heavy metals. However, marine discharges from other mines at considerable water depths have been much less environmentally damaging. All large mining projects are subject to specific contractual and regulatory environmental performance requirements. However, the Ok Tedi and Bougainville mines predate the general environmental legislation and are covered by specific Acts of Parliament. They are subject to lower environmental standards than subsequent projects. A recent review of environmental issues undertaken by a consultant to the Bank as part of preparation of the Mining Sector TA project concluded that PNG’s existing environmental legislation is generally adequate, but that there is considerable scope for improving the institutional capabilities of the Office of Environment and Conservation as well as for better monitoring and enforcement.

47. Environmental damage caused by the Panguna copper mine in Bougainville was one of the contributory factors to the secessionist struggle there that led to the permanent closure of the mine. The Ok Tedi gold mine, turned out to be irremediably damaging to the Fly River system, but GOPNG, which was also a shareholder in the project, granted it waivers to enable production to continue, despite the environmental damage from the annual discharge of tens of millions of tons of mine waste. This has created a vast floodplain downstream that destroys forest and agricultural land. In early 2000, the Bank’s review (para. 21) reported, “from an environmental standpoint, the best option is to close the mine immediately” but took note of the need for a mine closure plan that would deal with the social and economic consequences of closure, which would have been massive, given Ok Tedi’s direct

36. There was a major public outcry against efforts to introduce registration of customary land under the Bank-funded Land Mobilization Project, even though it was an attempt to ensure that the “real” owners of forest land benefited from logging.

37. The Kutubu petroleum project has a provision to pay 30% of landowner royalties into a future generations trust. This was not done in the most recent petroleum project (Gobe), but is widely used in mining projects.

38. The recently negotiated OK Tedi mine continuation agreements are a move in this direction as they providing benefits and compensation to previously excluded communities much further downstream the Fly River.

contribution to GDP of around 9-10%.³⁹ In addition, 90% of the total expected environmental impact had already occurred or was inevitable at the late stage of the closure decision. The history of Ok Tedi also shows how the State was not able to defend the public interest from an environmental standpoint because of conflict of interest between the State as shareholder and as regulator.

48. There are few specific environmental provisions in the 1998 Oil and Gas Act.⁴⁰ The important environmental and safety impacts of future oil and gas developments and export pipeline projects need to be addressed,⁴¹ particularly in the light of the importance and uniqueness of PNG's biodiversity and virgin tropical forest cover.

Social Impact on Local Communities

49. Dividends on equity and royalty payments are predominantly disbursed in cash to local landowners, usually via ILGs, with profound effects on socio-economic behavior in what were mainly subsistence economies prior to the resource project.⁴² There is little evidence that these cash payments have led to improvements in living standards but have increased social inequality, both within beneficiary groups as well as between beneficiaries and those excluded by geography.⁴³ The basis for entitlement to benefits is usually land ownership by clans rather than project-affected persons. Other civil society representatives within beneficiary clans, such as church groups, are also excluded from the distributive mechanism. In practice benefits are received by relatively few,⁴⁴ who are overwhelmingly men. However, Papua New Guinean culture does not necessarily consider social equity to be important.⁴⁵

50. The negative effects of cash handouts on traditional communities in PNG have been well documented. Some beneficiaries have abandoned their traditional pursuits and have come to depend entirely on these handouts. Such people face a difficult future when cash incomes dry up at the end of the project. In some project areas in PNG there has been a marked increase in population due to inward migration from other areas and an accompanying rise in alcohol and drug use, gambling, and polygamy. Inevitably the cash is almost always spent rather than saved or invested. Many recipients lack understanding of basic concepts like banking, interest rates, or investment and there are no programs to educate or assist them in alternatives to spending their cash incomes. However, the level

39. Ok Tedi also makes a substantial indirect contribution to the national economy, with a multiplier effect on employment of about 3 (KPMG estimate).

40. However, license holders are required to lodge security deposits for compliance with conditions relating to the protection and restoration of the environment in any law dealing with these matters.

41. The operational regulations flowing from the Environment Act of 2000 may deal with these, but have yet to be published.

42. The Bank was not involved in decisions on royalty disbursements and has done little socio-economic analysis of their impacts on local communities.

43. The concentration of benefits around projects such as Ok Tedi gives rise to demands for assistance from those just outside the defined project boundaries.

44. For example, only about 1,000 project landowners receive royalties from the Lihir gold mine, although equity ownership is spread more widely among the Lihir islanders.

45. The Dept. of Mining pointed out that this section relates predominantly to the petroleum sector and does not accurately describe how the mining sector operates. The DOM views the approach taken by the DPE to use ILG's as being inadequate in terms of the requirements of the mining industry. The DOM uses agents appointed under the Lands Act following the preparation of a Land Investigation Report under the Lands Act. This approach has worked successfully and with substantially less problems than those faced by the DPE. There is more distribution of cash benefits to the grass roots and substantially less opportunity for personal appropriation by the representatives of the beneficiaries. All payments are made publicly in the presence of representatives of the clans and the payments published so that everyone is aware of what their customary share should be. For example on Lihir, there is clear ownership of land by individual families and compensation and other payments are made directly to the individual family owning each block.

of cash payments in existing resource extraction projects cannot now be reduced, despite their undesirable side effects. New projects are likely to reserve a higher proportion of benefits for local (non-EI) sustainable development projects and for future generation trusts.

51. In the case of petroleum projects, it has also been observed that often a small minority (known as “big men”) who were important in traditional clan power structures often make decisions in their own favor instead of taking matters back to the members of the ILG. Many have become urbanized and consume conspicuously, thanks to their control over funds that they spend on themselves rather than sharing out to other clan members. Filer (ibid.) adds “The remainder [of resource rents] accrues to a motley band of customary landowners whose consumption of the proceeds may or may not leave a surplus which may either pay the price of their admission to the...’national bourgeoisie’...through the purchase of urban real estate, or the formation of joint ventures with foreign entrepreneurs,—or else be stolen from them by the fraudulence of their leaders...”

Managing Relations with Local Communities

52. Despite the existence of MOAs agreed between the various PNG parties at the conclusion of the development forum, in reality the national and provincial governments have a poor record for meeting their obligations to landowners. While some local development projects were included under political pressure without study, design, or costing, and so would probably never have been executed, weak planning, management, and administrative capacity, especially at provincial level are a major cause of the failure to implement many other projects. Corruption is another significant factor. Furthermore, there is a lack of governmental transparency and accountability for the use of funds that has added to landowner discontent over the failure of the national and provincial governments to abide by undertakings given in the MOAs.

53. Developers almost always have more staff and infrastructure than state bodies in project areas and they become the focus of dissatisfied local people seeking redress. As a result, the oil and mining industries have had to shoulder a large part of the responsibility for provision of rural infrastructure and social services in the project areas as an unavoidable cost of obtaining the goodwill of the local community in order to run their operations smoothly. Perversely, their ad hoc assistance only reinforces the perception that they can be an effective alternative to publicly provided services. Provincial governments are happy to let project developers ease the pressure on them to deliver.

54. Part of these capital expenditures can be offset against taxes⁴⁶ and in general infrastructure projects undertaken by developers have a good record in terms of successful completion. However, there are numerous cases of wasted or underused facilities like schools and dispensaries because of the subsequent lack of provincial government funding to cover operating costs such as staff salaries. There are also major emerging issues about the sustainability of some of project-funded infrastructure after project closure. Some of these can be addressed by sufficiently long-range forward planning and the setting aside of benefits in investment trusts to pay for operation and maintenance after closure, but provision for this has generally not been made in projects nearing closure such as Misima, where the local community is likely to lose its access to electricity when the mine closes.

55. The consortium operating the Kutubu oilfields recently decided to reduce its involvement in social activities that are external to its core business. In 2001 it set up a non-profit company, the Community Development Initiatives Foundation, to run its development projects at arms-length and

46. The infrastructure tax credit scheme allowed 2% of the assessable taxable income of firms to be exempt from taxation if spent on community infrastructure projects. This ceiling was recently lowered to 0.75%.

to assist in creating sustainable non-oil activities that will create employment opportunities in the future. The operating budget for the first three years will be fully met by the consortium. The CDI Foundation will attempt to work more closely with local and provincial governments and to assist them to improve their service delivery performance.⁴⁷ In the medium-term it will also devise and implement oilfield closure plans. A significant number of oil company community development staff transferred to the CDI Foundation.

56. In a similar move, an OK Tedi Development Foundation has also recently been set up to take over and expand the social and economic development programs previously administered directly by the mining company. Its stated goal is “to promote equitable and sustainable social and economic development in the Western Province.” There is an appropriately strong focus on the development of sustainable post-mining activities. The foundation potentially has access to very substantial financial resources since the transfer of the 52 percent equity share of BHP to the Sustainable Development Program Company. The latter is envisaged as an independent⁴⁸ investment vehicle whose dividend earnings are expected to exceed US\$200 million over the remaining life of the mine. Two thirds of these dividends are to be invested in a long-term development fund to be depleted over 40 years after mine closure. However, the remaining third will be available for annual development expenditures in PNG, with Western Province⁴⁹ entitled to a third of these funds.

Governance issues in extractive industries

57. By both international and local standards, mining and petroleum operations in PNG observe good norms of transparency and governance. The development forum process prior to award of licenses to project developers ensures that stakeholders have an adequate opportunity to obtain extensive information on the nature and impact of the proposed project before license award. The forum is also an ongoing consultative mechanism during normal project operations among the main parties implicated.

58. All the extractive industries projects in PNG publish audited accounts and annual reports. They are generally careful to be in compliance with local legislation on environmental and safety matters and fulfill reporting requirements to GOPNG. The PNG branch of Transparency International considers the mining and petroleum industries to be among the “cleanest” in the country. There are evident shortcomings in monitoring by GOPNG, but these are due to the budgetary squeeze on the concerned departments and the insufficient number of qualified personnel posted close to projects.

59. Taxes from mineral and petroleum companies due to GOPNG are paid to the IRC and thereafter deposited in the Consolidated Revenue Account of GOPNG and thereafter fully accounted for in GOPNG’s budget. Even though company tax payments are not published by the IRC, there is little scope for under-recording of such revenues in order for them to be diverted to non-transparent off-budget accounts. The quality of and details provided in tax filings to the IRC by the oil industry was significantly improved under the first Bank-funded petroleum TA project, with a positive impact

47. The mission statement of the CDI Foundation states that it “will serve the needs of rural communities by fostering self-sufficiency and facilitating long-term improvements to the capacity of social service providers.”

48. Of both BHP and GOPNG.

49. A reviewer of this paper argued that the application of yet more money to projects in Western Province may be part of the problem rather than part of the solution. On a per capita basis, the Western provincial government is the richest provincial government in the country. Its operating budget is greater than that of the national Police Department (yet it fails to provide sufficient funding for basic health services, schools or road maintenance). Furthermore, 70% of its operating funding (excluding staff salaries) comes from mining revenues. A significant expansion of infrastructure may prove to be quite unsustainable in the long term, since it is clear that even those services that are currently in place do not currently receive adequate operational funding.

on tax receipts. Tax audits of mining and petroleum companies are to be funded under the ongoing mining TA project. A further improvement would be to amend the Oil and Gas Act to require publication of taxes and royalties paid annually by each licensee.

60. The position as regards mining royalty payments, dividends on public equity holdings in both mining and petroleum companies and transfers of royalty and dividend to provincial governments is much less transparent and somewhat unsatisfactory. In the case of the Mining Projects, the companies pay the royalties direct to the landowners, making them hard to monitor. However, in the case of petroleum, all royalty is payable to the State and is deposited in trust accounts established under the Public Finances (Management) Act. These Trust Accounts are part of the GOPNG budget and receipts and payments estimates are contained in the annual budget submission to Parliament.

61. The dividends on public equity holdings in both mining and petroleum companies are a less transparent area. They are received and then disbursed to the ultimate beneficiaries by MRDC and do not appear in the National budget. Reporting by MRDC is inadequate and as a statutory authority, it is subject only to loose, arms-length control by GOPNG.

62. Finally, the receipt of benefit funds by the provincial governments is also hard to track. They tend to be recorded as ‘own source revenue,’ which is not subject to any regular scrutiny by the Department of Finance. It is not only possible but likely that there has been substantial under-reporting of mineral revenues and that substantial gaps in the adequacy of public financial management systems at the sub-national level have allowed these funds to be diverted into private hands without any significant risk of detection. This may partly explain why so many provinces with very substantial mineral revenue flows still appear unable to find the minimal resources to run basic services such as health facilities and schools.

5. Assessment of World Bank Interventions in PNG’s Extractive Industries

63. OED’s overall review of Bank assistance to PNG in the 1990s,⁵⁰ concluded that it was unsatisfactory, the institutional development impact was modest and sustainability uncertain. There was little progress in helping PNG diversify its economy away from an over-dependence on extractive industries. Yet, as the ensuing paragraphs demonstrate, the Bank’s interventions in petroleum were highly successful in improving sector management. Progress was also achieved in the mining sector, although on a more modest scale. But due to poor macroeconomic management and the poor quality of governance, these techno-centric sectoral efforts ultimately contributed little to sustainable economic development in PNG.

64. Aid donors (including the Bank) could have been more forceful in attempting to influence the composition of the public expenditure during the 1990s. Due to the macroeconomic imbalances, GOPNG and donor attention was understandably focused on the overall level of public expenditure and less on the composition of spending and the quality of the public expenditure program itself. Only since 2000 has there been a concerted effort by GOPNG to redirect recurrent expenditure to development projects. In late 2002, the Bank also began a public expenditure review to address these concerns and improved governance is now at the heart of its assistance strategy for PNG.

50. Country Assistance Evaluation, Report # 20183, March 2000.

65. The attention given to governance issues is relatively recent, reflecting greater receptiveness and commitment of the Morauta government (1999-2002). The GPAL sought technical reforms that are highly relevant to PNG's governance challenges, but they are unlikely to improve the efficient use of government revenues if core governance issues are not resolved. These include social norms that prioritize duties to *wantoks* (or clans) over legal norms, the demand for private goods from government, problems stemming from the electoral system, and multiple conflicts of interest.

Mining

66. *Relevance:* The Bank's assistance to GOPNG in better managing the mining sector during the 1990s was certainly relevant, despite the modesty of its formal involvement. The objectives of the mining TA project are highly relevant, given the weakness in such a key department; if anything the project should have started 3 to 5 years earlier, when budgets began to be cut and departing senior staff were not replaced. However, the project does not make any provision for increased recruitment of professional staff or contain any loan conditionality for a concomitant increase in the DOM's operating budget, which is vital for the success of the project. Initially, the project did not address the poor incentive framework to encourage exploration, (even though it seeks to raise the volume of exploration through the introduction of better policies), because the issue was being addressed with ADB assistance. When it became clear that the ADB tax review (para 9) had failed, the TA project recruited a consultant to undertake training of Treasury, IRC and DOM staff on mining taxation and incentives. Out of this came the positive changes to the fiscal regime introduced in late 2002.

67. *Efficacy & Efficiency:* These criteria are generally not applicable to the type of advisory assistance given by the Bank to GOPNG prior to the Mining TA project. As regards the latter, it is premature to make an assessment of these indicators since the project is still under way.

68. *Institutional Development:* The Bank's AAA services to GOPNG during the 1990s had a negligible effect on capacity building. Results under the TA project have yet to be obtained, so an assessment of its ID impact is not possible at this stage. Nevertheless, the project is supporting the creation of a statutory authority for the minerals sector to replace the DOM. This would help to ease the current budgetary squeeze on DOM and the problem of low salaries.⁵¹ However, as designed, the project does not address the pressing need to recruit and train qualified local staff for line positions in the DOM.⁵² A program to hire professionals to progressively replace the expatriate management of the Department of Mining by PNG nationals is also absent from the project.

69. *Sustainability:* The long-term prospects for mining in PNG are unclear, given that until very recently the mining industry was not showing signs of interest in new ventures and GOPNG was unconvinced of the need for measures to boost exploration. The DOM's budget is highly inadequate

51. A reviewer pointed out that this study does not question the rationale for creating a statutory authority. However, the proliferation of statutory bodies in the PNG public sector has had some negative impacts, the full extent of which are only now being realized. These include (i) the hypothecation of revenues, which weakens the capacity of the Treasury both to manage cash flows and to apportion scarce resources in line with the overall priorities of government; (ii) increased salary costs, but without the benefit of increased flexibility in removal of staff because public service regulations are still applied to employees of statutory bodies; and (iii) reduced accountability, as these agencies are removed from the ambit of central control of tenders, oversight of expenditure through central accounting systems, budget controls over expenditure etc.

52. The DOM commented that the right to hire public servants is the sole prerogative of the Department of Personnel Management and beyond the control of the Department of Mining or the TA project. The TA project has a major capacity building and training focus. The building of skills in the national workforce to replace expatriate workers is implicit, if not directly stated in the project documents.

for it to perform its role and in the absence of new recruitment, the impact of the Bank's training and TA efforts may be blunted.⁵³ For these reasons, sustainability appears *uncertain*.

Petroleum⁵⁴

70. *Relevance:* The relevance of the Bank's assistance to the petroleum sector over the past 20 years was and still is *high*. The initial focus on improving the geological database and promoting PNG to the oil industry responded to the 1980 oil crisis and the high cost of oil imports. Thereafter, attention switched mainly to capacity building, given the absence of any national expertise in petroleum matters in GOPNG at that time. The strategy essentially consisted of (i) separating petroleum sector management and policymaking from mining, which still dominated the activities and mindset of the combined Department of Minerals and Energy, (ii) improving the legal and regulatory framework, and (iii) providing a major injection of technical assistance for a transitional period to enable local professional staff to acquire the skills and experience to replace expatriates in line management. Great strides have been made in the past decade (para. 71), but the ongoing gas TA project is still needed to address the remaining shortcomings, at a time when gas development dominates the sectoral agenda and will require intensive attention from GOPNG in the next few years.

71. However, the Bank's assistance would have had even greater relevance had it given more explicit attention to the social and political aspects of natural resource extraction in PNG. The project design was overwhelmingly technocentric, in part due to little realization at the time that these aspects would quickly take on great prominence. Yet it should have been apparent at appraisal that complex community and land-related issues would need to be addressed as part of the PD's supervision of oil production. In practice they did become a prominent feature of the PD's activities during the project period and came to be included in the scope of the policy formulation activities supported by the project. Managing community relations in the coming years will be an increasing part of the PD's workload as the gas industry is developed.⁵⁵

72. *Efficacy:* The two completed Petroleum TA projects exhibit a *high* level of efficacy because they successfully met virtually all their objectives. As a direct result of the basin studies (which are still in use today) and promotional efforts to the oil industry, GOPNG received numerous bids for exploration blocks that led to the rapid commercial discovery of oil in the Southern Highlands. This acted as spur to further exploration. Further information on the achievements of the two projects is provided in the PPAR.

73. *Efficiency:* Measuring efficiency of TA projects is difficult. Nevertheless, in the case of the first Petroleum TA project in PNG, which directly contributed to the first commercial oil discovery, the financial return to the country has been many times the modest expenditure incurred on the project. The impressive results in capacity building under the second project (para. 71) also indicate that the returns to GOPNG in terms of better supervision and management of the sector have been considerable. Overall efficiency is therefore assessed as *high*.

53. The DOM commented that the assistance provided by the TA project to convert the Department of Mining into a Statutory Authority will provide it with more secure funding arrangements and flexibility with respect to terms and conditions of employment. This objective has been further reinforced by the European Union Sysmin project which makes the provision of a large proportion of the grant funding conditional on the DOM being converted to an Authority.

54. A more detailed evaluation of the Bank's involvement in the hydrocarbons sector is given in the PPAR (Report # 24405), June 2002.

55. The subsequent gas TA project also appears to have underestimated needs in this area and a new TA operation specifically to deal with social issues of petroleum development is under preparation.

74. *Institutional Development:* Capacity building was (and remains) at the core of the Bank's involvement in the petroleum sector. Today the Petroleum Division has 5 specialized branches with nearly 60 PNG nationals working as professionals. The replacement of expatriate managers by local staff was successfully completed several years ago, with the active support of the Bank. The DPE is now much better equipped in skills and resources, has become more assertive and decisive in carrying out its work, and its staff have matured and gained confidence to deal with senior oil industry managers. DPE's views are influential in determining GOPNG policies, and it is a key participant in the PNG team responsible for negotiating the GTA project. The institutional development impact of the Bank's interventions in the sector is assessed as *high* because of the extent of progress in the DPE's capabilities in all key disciplines during the past decade and because of the improvements in the legal framework and community participation resulting from the passage of the 1998 Oil and Gas Act. The latter is a comprehensive document that supercedes the incomplete legal instruments and ad hoc Cabinet-approved arrangements previously governing the sector. It also broke new ground in (i) formalizing the principles for revenue sharing among the different branches of government and landowners, (ii) setting out the process of consultations with stakeholders on new projects, and (iii) determining landowner beneficiaries by means of obligatory ex-ante social mapping and landowner identification studies. The Act is generally viewed as a good basis for future sector development, despite the need for greater precision on a number of issues relating to landowner benefits and their administration.

75. *Sustainability:* As a result of access to resources from the Gas TA project,⁵⁶ the DPE will be able to protect itself to a considerable degree from the government's budgetary squeeze during the next 2 to 3 years. However, it will be increasingly difficult to preserve it as an "island" of excellence in an unfavorable economic environment unless it obtains a degree of financial autonomy. The sustainability of the benefits from the Bank's interventions in the petroleum sector is considered to be *likely*, but the risk of the industry going into decline if exploration does not resume is nevertheless significant. This would endanger sustainability, as would the non-implementation of the GTA project.

6. Conclusions and Recommendations

76. It is widely acknowledged that no other sectors offer the potential to replace GOPNG's dependence on natural resource extraction over the next 20 years. Nevertheless, until recently it appeared that the Treasury Department had a poor understanding of extractive industry realities and did not appreciate what has to be done to sustain the resource rents it is so reliant on. This indicates a failure on the part of the sectoral departments as well as the Bank to get across the message that exploration must be boosted if GOPNG wishes the current level of resource rents are to be prolonged beyond 2010. Higher levels of exploration in both petroleum and mining cannot be achieved without Treasury acceptance of the need to improve the fiscal terms for these industries to overcome the other handicaps faced by potential investors. The 2003 budget shows belated recognition by the Treasury of need to reverse the fall in exploration through better incentives for investors.

77. However, it is equally important that the unsatisfactory use of resource revenues to date should provoke a debate on the value of further resource extraction. The majority of PNG's population has gained little from nearly three decades of revenues flowing from exploitation of the

56. And the related GOPNG counterpart funds.

country's natural resources. A decline in such rents is unlikely to have much impact on their lives either, but would be painful for the state apparatus and the urban population.⁵⁷

78. The challenge facing PNG today is better governance and more effective use of the diminishing resource rents. Encouraging more exploration so as to sustain oil and minerals production beyond the end of the decade can only be justified if there is a concerted effort to improve the composition and quality of public expenditure, including less costly and more effective delivery of essential services such as health and education. *Increased investment in PNG's extractive industries is unlikely to have a positive development outcome unless it is preceded by improvements in governance and fiscal management.*

79. The key to better results from public spending by provincial and local authorities is local community development. This will raise public awareness, impose checks on leaders who have been misusing development funds or appropriating them for personal use (paras. 27-28) and improve the accountability of public officials. Potentially much can also be achieved in service delivery by newly created organizations such as the CDI and Ok Tedi Foundations, but they have yet to demonstrate their capabilities.

80. As described earlier (Section 5), the overall impact of Bank assistance was to improve the supervision and management of extractive industries by GOPNG. However, this was a necessary but insufficient condition to ensure that extractive industries contributed to PNG's sustainable economic development during the past decade. Mismanagement of the resource rents and poor governance undermined the sectoral benefits of the Bank's interventions.⁵⁸ *The lesson for the Bank is that its technical and capacity building interventions in extractive industries need to be better integrated with the management of resource rents and policies to improve governance.*

81. There is a need for the Bank to look more deeply at the political economy of PNG's governance issues, to help identify future points of intervention. While addressing some of the issues—such as problems linked to the electoral system—is clearly outside the Bank's mandate, the Bank should consider their impact in defining its future assistance strategy for PNG. Only then can the Bank take a strategic decision to devote resources to reforms that may be necessary, but not sufficient, conditions for reform.

82. The Bank and other donors need to provide more assistance in key governance areas upon which many sectors depend: in particular the departments of Justice and Lands (para 44). Aid donors are reluctant to tackle land issues because of their political sensitivity in PNG, but it is only a partial solution to tackle weaknesses in the line ministries like Mining and Petroleum. Under-resourcing (in terms of skills and budget) of key GOPNG departments is a serious constraint on the development cycle of new extractive industry projects.

83. As regards the sharing out of resource rents, future natural resource projects could be structured differently to spread benefits more widely among a larger group of PAPs as well to reserve a portion of benefits for future generations (para 45). To mitigate the adverse impact of direct

57. The DOM commented that there is no other sector of the economy which has the potential to generate an equivalent amount of revenue for GOPNG in the medium term. If the mining and petroleum sectors are not supported and ultimately go into decline, it is not apparent where funds will come from to maintain even the current inadequate levels of basic public services.

58. Bank project staff pointed out that the alternative of not providing TA to the extractive industries 'would imply (a) that we did not think the present and any near-term, future governments would improve governance; (b) that it would be better for the oil, gas and mining sectors to be destined for steady contraction at least for the next decade.' These are views that they reject.

payment of cash payments (para 50), non-cash, non-infrastructure benefits, such as education and training benefits should be included in future project arrangements.

Annex A: Statistical Tables

PNG Oil Production, Price, Tax, and Royalty (US\$ million)

<i>Financial Year</i>	<i>Oil Production (million barrels)</i>	<i>Oil Price (US\$/barrel)</i>	<i>Total Value Production</i>	<i>Tax US\$ million</i>	<i>Royalty (US\$ million)</i>
1991	0.158		0	0	0
1992	19.314	21.034	406.25	41	4.0
1993	45.884	18.082	829.67	152	9.0
1994	44.008	16.199	712.89	180	8.4
1995	36.344	17.729	644.34	128	7.5
1996	39.018	21.183	826.52	225	4.5
1997	28.183	20.715	583.81	228	5.1
1998	29.480	13.394	394.86	93	8.3
1999	32.020	18.566	594.48	79	3.1
2000	25.082	28.983	726.95	124	9.6
2001	20.800	27.000	561.60	101	7.4
Totals	320.21		6281.37	1351	69.9

Note: 1991 production start up was for project construction fuel requirements only.

Source: Petroleum Division, GOPNG.

Gross Domestic Product (GDP) and Petroleum Export Earnings (Million Kina)

<i>Year</i>	<i>GDP Total</i>	<i>Petroleum Contribution to GDP</i>	<i>Petroleum % Contribution to GDP</i>	<i>Total Exports</i>	<i>Petroleum Contribution to Exports</i>	<i>Petroleum % Contribution to Exports</i>
2001	9983	1115	11.2%	6084	1889	31.0%
2000	9855	1802	18.3%	5518	1743	31.6%
1999	9103	1382	15.2%	4909	1397	28.5%
1998	8901	705	7.9%	3678	813	22.0%
1997	6859	728.5	10.6%	3059	852	27.9%
1996	6914	636	9.2%	3314	1073	32.4%
1995	6309	620	9.8%	3399	827	24.3%
1994	5441	629	11.6%	2662	702	26.4%
1993	4922	746	15.2%	2527	817	32.3%

Sources: BPNG & Dept. Finance & Treasury, DPE estimates.

Annex B: World Bank Group Operations in PNG's Extractive Industries

Petroleum Exploration Technical Assistance Project, (Credit 1279-PNG), approved 1982, SDR 2.7 million, closed 1988.

Petroleum Exploration And Development Technical Assistance Project, (Loan 3670-PNG) approved 1993, US\$11 million, closed 2000.

MIGA: two contracts of guarantee (totaling US\$76.6 million) to R.T.Z. Overseas Holdings Limited and to a syndicate of lenders represented by Union Bank of Switzerland for their investments in **Lihir Gold Limited** in 1996. Coverage was issued against the risks of transfer restrictions, expropriation, and war and civil disturbance for up to 12 years. The guarantees were cancelled by the guarantee holders in 2000 and 2001.

Gas Development And Utilization Technical Assistance Project, (Loan 7019-PNG), Approved 2000, US\$7 million, ongoing.

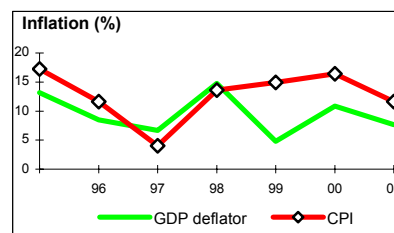
Mining Sector Institutional Strengthening Technical Assistance Project, Approved 2000, US\$10 million, ongoing.

Annex C: Papua New Guinea at a Glance

Papua New Guinea

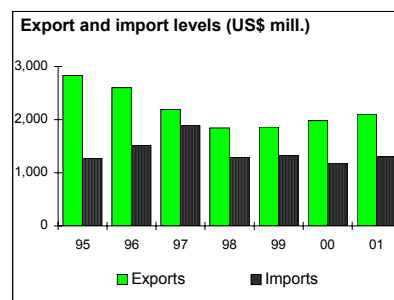
PRICES and GOVERNMENT FINANCE

	1981	1991	2000	2001
Domestic prices				
<i>(% change)</i>				
Consumer prices	..	7.0	16.4	11.6
Implicit GDP deflator	-1.3	7.0	10.8	7.7
Government finance				
<i>(% of GDP, includes current grants)</i>				
Current revenue	..	31.1	24.1	26.0
Current budget balance	..	2.4	1.8	3.2
Overall surplus/deficit	..	-1.8	-7.6	-4.8



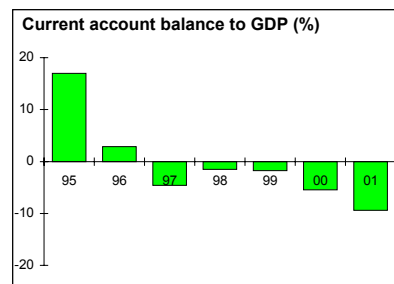
TRADE

	1981	1991	2000	2001
<i>(US\$ millions)</i>				
Total exports (fob)	..	1,482	1,982	2,105
Gold	..	694	627	627
Copper	..	337	281	281
Manufactures
Total imports (cif)	..	1,766	1,178	1,299
Food	..	223	250	293
Fuel and energy	..	148	124	132
Capital goods	..	836	499	524
Export price index (1995=100)
Import price index (1995=100)
Terms of trade (1995=100)



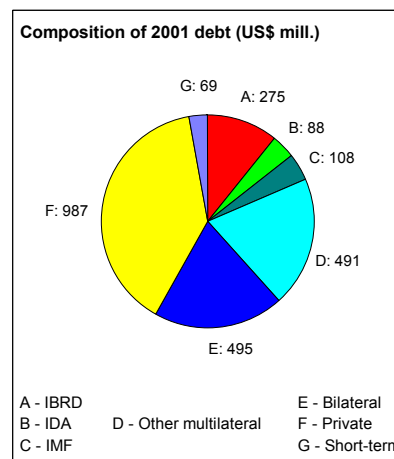
BALANCE of PAYMENTS

	1981	1991	2000	2001
<i>(US\$ millions)</i>				
Exports of goods and services	925	1,786	2,517	2,594
Imports of goods and services	1,438	1,946	2,407	2,591
Resource balance	-514	-161	110	2
Net income	-162	-250	-313	-293
Net current transfers	154	-64	13	13
Current account balance	-521	-475	-190	-277
Financing items (net)	470	390	331	315
Changes in net reserves	51	85	-141	-38
Memo:				
Reserves including gold (US\$ millions)	361	442
Conversion rate (DEC, local/US\$)	0.7	1.0	2.8	3.4



EXTERNAL DEBT and RESOURCE FLOWS

	1981	1991	2000	2001
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	1,185	2,774	2,599	2,513
IBRD	53	275	244	275
IDA	65	114	92	88
Total debt service	184	505	305	274
IBRD	7	33	44	39
IDA	1	2	3	4
Composition of net resource flows				
Official grants	294	269	98	..
Official creditors	34	129	109	65
Private creditors	303	-33	-51	-71
Foreign direct investment	86	117	130	..
Portfolio equity	0	0	48	..
World Bank program				
Commitments	0	51	132	0
Disbursements	11	49	43	66
Principal repayments	3	16	31	29
Net flows	9	33	12	37
Interest payments	4	19	16	14
Net transfers	4	14	-4	23



Andres Liebenthal

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