

Chapter 5

Forestry and mining

5.1 In this chapter, the committee continues its consideration of the sustainable development of the natural resources of Pacific island countries. It focuses on resource management in the forestry sector before examining mining and then the broader issue of managing resources in a region prone to natural disasters and the adverse effects of climate change.

Forestry

5.2 Forests are a vital part of the subsistence economies in a number of Pacific island countries. In particular, the region's forest industries in PNG, Solomon Islands, Fiji, and Vanuatu are important to both their formal and informal economies.¹ In PNG, 80 per cent of the population still live in rural areas and depend heavily on forest areas for their livelihood and culture.² Aside from timber, forests produce a range of goods for domestic use and for sale, among which are fuel wood, game, fruit, nuts, berries, roots and medicinal herbs. Notably, they provide a rich and diverse source of food and materials especially during times of hardship.³

Forests and sustainable development

5.3 All governments in the region have made a commitment to sustainable, multiple-use forestry. Even so, the future of the forests is under threat. In some countries, the forecasts regarding the effects of forest degradation on their economies are dire. DAFF noted:

Unsustainable rates of forest harvesting in many Pacific Island countries have led to a significant reduction in the forest resource and a decline in its productive capacity with potentially major impacts on forest biodiversity and the forest environment. Increasing sustainable forest management is important to address these issues, and to mitigate the impacts of climate change.⁴

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- 1 AusAID, *Pacific 2020, Background Paper: Forestry*, 2006, pp. 4 and 7, http://www.ausaid.gov.au/publications/pdf/background_forestry.pdf (accessed 2 December 2008).
 - 2 World Bank, Report No. 36503, 'Note on Cancelled Operation (NCO)' (PE-4398/GE4345), 13 October 2006, p. 3.
 - 3 AusAID, *Pacific 2020, Background Paper: Forestry*, 2006, p. 7, http://www.ausaid.gov.au/publications/pdf/background_forestry.pdf (accessed 2 December 2008).
 - 4 *Submission 42*, p. 3. See also, Andreas Schloenhardt, 'The illegal trade in timber and timber products in the Asia-Pacific region', *Research and Public Policy Series*, No. 89, Australian Institute of Criminology, 2008, p. 75.

5.4 Forest activity in Solomon Islands in particular has generated considerable disquiet. A number of international organisations have expressed concern about the 'years of unsustainable logging' in Solomon Islands and the 'anticipated depletion of its national forests'.⁵ For example, a 2008 World Bank publication warned that the existing rate of logging in Solomon Islands 'implies a rapid decline in timber stocks ending in depletion by 2015'.⁶ In its submission, Treasury noted that aggressive natural resource extraction, as is occurring in the Solomon Islands forests, 'will present serious adjustment problems as resources are depleted'.⁷

5.5 International organisations have also raised concerns about the use of PNG's forests. A 2006 World Bank assessment noted that 'deforestation and irretrievable loss of forest biodiversity in PNG was, and still is, imminent and severe'.⁸ DAFF informed the committee that many commentators have suggested that the larger forested countries of both Solomon Islands and PNG are 'exploiting resources at such a rate that their foreign exchange benefits will either disappear or be significantly reduced during the period to 2020'.⁹

5.6 The governments of these countries have taken steps to ensure better management of their forests. For example, over the past two decades the PNG Government has moved to exercise greater control over forest areas in order to enhance sustainability and overall sector efficiency. It has updated its Forestry Act, refined the adoption of sustainable forest management practice rules and, in some cases, imposed a moratorium when it was clear that violations needed investigation.¹⁰ The Solomon Islands Government has cancelled the licences of logging companies failing to submit acceptable public environment reports and in some cases has refused applications for new licences. Even so, recently the IMF found that since 2003 logging in Solomon Islands has steadily risen:

In 2007, logging increased by about 25 per cent and accounted for a quarter of real GDP growth, 65 per cent of exports, and almost 20 per cent of tax revenue. The sharp increase in logging activity was in part the result of the issuance of new licenses, re-entry into former logged areas, the approval of tree-felling operations to allow palm oil and reforestation projects to occur,

5 See for example, Asian Development Bank, *Asian Development Outlook 2008*, <http://www.adb.org/Documents/Books/ADO/2008/SOL.asp> 24 November 2008.

6 World Bank, *East Asia: Testing Times Ahead*, East Asia and Pacific Update, April 2008, p. 48.

7 *Submission 59*, p. 4.

8 World Bank, Report No. 36503, 'Note on Cancelled Operation (NCO)' (PE-4398/GE4345), 13 October 2006, p. 3.

9 *Submission 42*, p. 13.

10 World Bank, 'Note on Cancelled Operation (NCO)' PE-4398/GE4345), report number 36503, 13 October 2006, pp. 4 and 17.

favourable international prices, and continued strong demand from major log importers such as China.¹¹

5.7 A country report to the 2008 meeting of the Heads of Agriculture and Forestry Services stated that the Government of Solomon Islands had limited influence over the decisions of customary landowners in the issuing of logging licences. It also stated that 'related efforts to legislate for better forest management had been largely unsuccessful'.¹² The committee now considers some of the major impediments to sound and prudent management of forests in relevant Pacific island countries.

Causes of forest degradation—priorities

5.8 In 2005, participants in a regional awareness raising tour were told that the strong conservation values of Pacific people towards their forests were 'slowly diminishing as the need for money takes priority and as population expands'.¹³ A 2006 assessment for the World Bank expressed similar concerns about the preference given in PNG to short-term gains that produce long-term problems, such as land degradation.¹⁴ It noted that improvements in logged areas are often 'little more than putting in forestry skidding roads, which are then not maintained'. It explained:

Many households in these areas use their temporarily increased incomes to increase their dependency on consumer goods. However, when logging ends, little sustained development or income base remains, so households revert to exploiting the now-degraded land resource base.¹⁵

5.9 This trend persists today. The Prime Minister of PNG explained that the reasons for deforestation were complex but put simply, 'it is driven by the fact that the world values forests more dead than alive'. He indicated that many 'deforest their land so as to trade low-value commodities like timber, beef, palm oil, soy, coffee, and cocoa'.¹⁶ According to the Prime Minister, rural communities must be empowered to

11 International Monetary Fund, 'Staff Report for the 2008 Article IV Consultation', 10 September 2008 in Solomon Islands: 2008 Article IV Consultation—Staff Report; Staff Supplement; Public Information Notice on the Executive Board Discussion, IMF Country Report No. 08/358, November 2008, p. 17.

12 *Report of the 3rd Regional Meeting of Heads of Agriculture and Forestry Services (HOAFS)*, 3–5 September 2008, p. 28.

13 *Investing in Forests and Trees for a Secure Future for our People*, A regional Awareness Raising Tour of Local and Global Importance, organised by the Land Resources Division of the Secretariat of the Pacific Community, 3–6 October 2005, Fiji, p. 5.

14 World Bank, Report No. 36503, 'Note on Cancelled Operation (NCO)' (PE-4398/GE4345), 13 October 2006, p. 4.

15 World Bank, Report No. 36503, 'Note on Cancelled Operation (NCO)' (PE-4398/GE4345), 13 October 2006, p. 4.

16 Prime Minister of Papua New Guinea's Address to the Lowy Institute for International Policy, Sydney, 7 November 2008, http://lowyinstitute.richmedia-server.com/sound/Pacific_regional_challenges.pdf (accessed 12 January 2009).

develop their natural environment without destroying it, thereby 'creating sustainable wealth for themselves and future generations'.¹⁷

5.10 Poor logging practices contribute significantly to the problem of forest degradation. A recent study of forestry in Fiji, PNG, Solomon Islands and Vanuatu was highly critical of harvesting methods. It referred to:

...poor attitudes towards improved logging practices, dismal road construction and maintenance, tendencies to disregard exclusion zones (e.g. buffer strips along streams), high logging intensities that leave severely damaged residual stands behind and training programs that focus on the wrong people and wrong subjects.¹⁸

5.11 Clearly communities must become aware of the importance of sound management of their forests and have the capacity and incentive to work toward sustainable development. Landowners, however, are not the only ones swayed by immediate financial gain or responsible for the health of a country's forests. The promise of short-term rewards combine with other factors to influence the behaviour of all engaged in the forestry industry, notably governments.

Understanding sustainable development

5.12 The recent study of forestry practice in four Pacific island countries noted that 'conflicting political and economic interests often prioritize the liquidation of today's natural forests over their sustainable use'. Although governments have put in place regulations, the study noted poor compliance with, and monitoring and auditing of, the codes of logging practices (COLP) and the short-sightedness that characterises the approach taken toward forestry in these countries.¹⁹ This time the criticism was levelled at all who have a major role in forestry, including governments, land owners and logging companies and operators:

Local people, many of them landowners themselves but without the necessary influence to press for more sustainable management, and officials of respective forestry services have been delegated to a passive-bystanders' role, although this general finding bears out differently in the four countries visited. The result of this secondary role is that a lack of interest in is joined by a lack of enthusiasm for implementing COLPs. On the ground, this

17 Prime Minister of Papua New Guinea, Address to the Lowy Institute for International Policy, Sydney, 7 November 2008, http://lowyinstitute.richmedia-server.com/sound/Pacific_regional_challenges.pdf (accessed 12 January 2009).

18 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, p. 12.

19 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, pp. 13 and 15.

translates into diminished interest in monitoring and auditing COLP provisions, a prerequisite to enforcing compliance with the COLPs.²⁰

5.13 Overall, it found that all stakeholders in PNG, Vanuatu and Solomon Islands had a 'very weak' commitment to, and understanding of, sustainable forest management. In Fiji, it was deemed to be 'weak'.²¹ The study placed a high importance on awareness raising and support for sustainable forest management and the codes of logging practice among policy makers and landowners in Vanuatu and Solomon Islands.

Capacity and resources to manage forests

5.14 Despite the overall poor record of forest management, there are positive cases demonstrating a commitment 'to continue battling for changes in attitudes and practices' in the forestry sector in Pacific island countries.²² ANZ cited examples in PNG where some organisations engaged in the forestry industry 'develop roads and start to build infrastructure for people in outlying areas'. They also build churches, schools, health facilities that 'actually provide a community with social wellbeing that they never had previously'.²³

5.15 Mr Talbot, DAFF, also acknowledged that some forest companies were endeavouring to develop the skills of their workforce and help the local community. Even so, he recognised that some of the problems in the forestry sector stemmed from a lack of technical skills. He informed the committee of the need to build up the technical management skills of people who look after the forests including the 'need to be able to participate in certification schemes'.²⁴

5.16 The study of the four Pacific island countries also referred to the limited financial and human resources in the forestry sector.²⁵ It found 'research in Fiji,

20 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, p. 11.

21 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, pp. 11–15.

22 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, p. 12.

23 Garry Tunstall, *Committee Hansard*, 24 March 2009, p. 64.

24 *Committee Hansard*, 20 November 2008, p. 68.

25 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, p. 15.

Solomon Islands and PNG, to be inadequate'.²⁶ In this regard, both Fiji and Solomon Islands have raised concerns about the lack of an institute for forestry students. Fiji noted that Pacific students currently 'went overseas for forestry diplomas and degrees and it would be advantageous to offer such courses in the region'.²⁷ Solomon Islands has indicated that it requires assistance to determine the best species for reforestation and to develop a long-term forestry policy.²⁸

5.17 A regional workshop for improved forest practices concluded *inter alia* that more effort was needed to develop appropriate silvicultural techniques and advantage should be taken of extension methods being developed to transfer knowledge about reforestation to landowners.²⁹

Reinvestment for sustainable development

5.18 Governments also need the financial management skills and political will to ensure that revenue generated from forest activity and intended for reinvestment is used appropriately. Forestry companies operating in PNG pay a silvicultural levy to the PNG Forestry Authority. According to ITS Global, the levy is intended 'to maximise the probability of the forests regenerating themselves with the same species and as fast as local growing conditions allow'. It noted that the Forest Authority is failing to make those investments.³⁰ The PNG Forest Industries Association maintained that the governance problems in the forestry sector stem from 'institutional arrangements for forestry and the behaviour of those who can access funds'. It asserted that the problem is not between the forestry companies and the government, but:

26 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, pp. 36, 45 and 51. See also, the 2007 Fiji Forest Policy Statement which supports the view that inadequate knowledge of forest resources and research effort is a limiting factor. *Fiji Forest Policy Statement*, November 2007, Summary, p. 2. Although Fiji has carried out a national forestry inventory, it understands that other things need to be done. See *Report of the 3rd Regional Meeting of Heads of Agriculture and Forestry Services (HOAFS)*, 3–5 September 2008, p. 25 and Fiji Government Online, Press Releases, no. 354, 'Department plans to retain forests', 11 February 2009, http://www.fiji.gov.fj/publish/printer_14203.shtml (accessed 26 February 2009).

27 *Report of the 3rd Regional Meeting of Heads of Agriculture and Forestry Services (HOAFS)*, 3–5 September 2008, pp. 25 and 27.

28 *Report of the 3rd Regional Meeting of Heads of Agriculture and Forestry Services (HOAFS)*, 3–5 September 2008, p. 28.

29 A regional workshop found, 'As in most societies, landowners in the Pacific have the dominant say in how land is used. This can lead to conflicts between local preferences and regional or national goals. Participatory land use planning is the current way of tackling this problem but it is hugely costly, both in the resources and in the time needed to carry out planning. More efficient ways of addressing these trade-offs need to be found'. Pacific Islands Forum Secretariat, 'Capacity Building on Restoration, Management and Rehabilitation of Degraded Forests and Deforested Land in the Pacific—A Regional Workshop for Improved Practices Enhancing Forest Functions', Workshop Report, Nadi, 28–31 October 2008.

30 *Submission 63*, p. 5.

...at the next level up the governance chain: where forestry funds do not trickle down' to local people because officials, the well connected and landowner companies take their cut.³¹

5.19 With regard to Solomon Islands, one study noted that the tax regime in Solomon Islands, primarily the tax on log exports, had contributed very considerable sums to government but there had been 'insufficient government investment in the sector to safeguard its future'.³²

5.20 This matter of the prudent use of revenue generated from natural resources for re-investment in sustainable development is again mentioned in the mining context and considered further in chapter 14 covering governance and financial management.

Illegal activities and corruption

5.21 Although illegal logging is not well documented or understood in the Pacific, it is recognised as a problem in some Pacific island countries.³³ A report prepared for the New Zealand Ministry of Agriculture and Forestry identified PNG and Solomon Islands as countries that supply 'suspicious wood'.³⁴ As with the fishing sector, unauthorised activities result not only in a loss of revenue to government but may cause serious long-term damage to the environment.

5.22 With regard to PNG, even though its forestry industry is regulated, issues with illegal and non-compliant operations remain and the underreporting of logging activity could be substantial.³⁵ Moreover, for years the logging industry in PNG has been dogged by allegations of corruption. For example, a World Bank evaluation found that sustainability in PNG's forestry sector had been compromised by major financial and operational malfeasance.³⁶ Also, a 2007 study, commissioned by the Government of PNG, chronicled the findings of various reviews of the logging industry in PNG, starting with the 1987 Barnett commission of inquiry. This inquiry referred to robber barons 'bribing politicians and leaders, creating social disharmony and ignoring laws

31 Appendix to *Submission 63*, p. 24

32 Overseas Development Institute, 'What can be learnt from the past? A history of the forestry sector in Papua New Guinea', *Papua New Guinea Forest Studies 1*, January 2007, p. 14.

33 See for example, Andreas Schloenhardt, 'The illegal trade in timber and timber products in the Asia-Pacific region', *Research and Public Policy Series*, No. 89, Australian Institute of Criminology, 2008, p. 75.

34 James Turner, Andres Katz and Joseph Buongiorno, *Implications for the New Zealand Wood Products Sector of Trade Distortions due to Illegal Logging*, A report prepared for the Ministry of Agriculture and Forestry, SCION, July 2007, p. 21.

35 See *Report of the 3rd Regional Meeting of Heads of Agriculture and Forestry Services (HOAFS)*, 3–5 September 2008, p. 27 and Overseas Development Institute, 'Issues and opportunities for the forest sector in Papua New Guinea', *Papua New Guinea Forest Studies 3*, January 2007, p. 31.

36 World Bank, Report No. 36503, 'Note on Cancelled Operation (NCO)' (PE-4398/GE4345), 13 October 2006, p. 8.

in order to gain access to, rip out and export the last remnants of, the province's valuable timber'. A 2003 review, cited in the 2007 report, found these barons to be 'as active as they ever were'.³⁷ The 2007 study concluded that despite reforms introduced since the mid-1990s, there would 'appear to be continuing significant instances of unlawful behaviour'. In its view, this situation may:

...reflect a more general malaise in Papua New Guinean society that tolerates such behaviour. Finding solutions under such circumstances is bound to take time and requires strong political leadership to carry the reform process forward.³⁸

5.23 A 2008 report published by the Australian Institute of Criminology noted that attempts to establish systems for controlling logging and sustainable development in PNG were often undermined by the national and provincial governments and that the logging industry was 'racked with problems and controversy'.³⁹ Mr John Talbot, DAFF, informed the committee that although PNG was taking some steps to manage the resources:

...at the political level there has also been a number of issues in terms of politicians taking bribes and forests being logged in either an unsustainable or an illegal manner'.⁴⁰

5.24 He stated that, 'Illegal logging is being done under the carpet to actually assist money laundering'.⁴¹

5.25 A report prepared for the New Zealand Ministry of Agriculture and Forestry found that illegal or unreported logging was also a problem in Solomon Islands. It noted that the concentration of economic activity in the hands of a few players requires 'strong institutions and control to ensure logging concessions are properly administered'.⁴² In a paper published by the Australian Institute of Criminology, Andreas Schloenhardt cited reports on widespread corruption in the Solomon Islands'

37 Overseas Development Institute, 'What can be learnt from the past? A history of the forestry sector in Papua New Guinea', *Papua New Guinea Forest Studies 1*, January 2007, p. 19. It should be noted that while the paper had been commissioned by the Government of Papua New Guinea and funded by the European Commission, the views expressed were not necessarily those of the Government of Papua New Guinea nor of the European Commission.

38 Overseas Development Institute, 'What can be learnt from the past? A history of the forestry sector in Papua New Guinea', *Papua New Guinea Forest Studies 1*, January 2007, p. 21.

39 Andreas Schloenhardt, 'The illegal trade in timber and timber products in the Asia-Pacific region', *Research and Public Policy Series*, No. 89, Australian Institute of Criminology, 2008, p. 73.

40 *Committee Hansard*, 20 November 2008, p. 68.

41 *Committee Hansard*, 20 November 2008, p. 68.

42 James Turner, Andres Katz and Joseph Buongiorno, *Implications for the New Zealand Wood Products Sector of Trade Distortions due to Illegal Logging*, A report prepared for the Ministry of Agriculture and Forestry, SCION, July 2007, p. 22.

logging industry and allegations about large Malaysian logging companies exercising influence by paying bribes instead of taxes.

5.26 According to an IMF mission, better monitoring of logging in Solomon Islands:

...would not only generate revenues that could finance much-needed social and development spending (for example, for financing free primary education or for funding more vocational training), but would also encourage sustainable logging activity.⁴³

5.27 It urged the authorities 'to enhance monitoring by employing qualified personnel'. The previously-mentioned study of forest practices in four Pacific island countries also recommended that improvements be made to the monitoring, auditing and control systems.⁴⁴ This suggestion raises the issue of the capacity of Pacific island countries to exercise control over activities in their forests, especially in areas that are often remote and difficult to access.⁴⁵ In relation to fishing, the committee has already drawn attention to the limited capacity of Pacific island countries to monitor their EEZs.

Summary

5.28 An understanding of the importance of sustainable development coupled with the necessary knowledge and skills to manage forests effectively is central to ensure that forests in Pacific island countries are viable and long term enterprises. But education alone is insufficient to address the problem of poor harvesting practices and over exploitation. Appropriate policies, political will, technical capacity to manage forests and adequate resources to enforce compliance with government policies are also needed.

5.29 In this regard, the role of governments in managing forests is critical. Ultimately they are responsible for formulating and implementing policies designed to enhance the sustainable development of their forests. Clearly, helping local communities to manage forests better through R&D, education and technical assistance is central to sustainable development. Government commitment and adequate funding is also required to ensure that those engaged in the timber and logging industry comply with the rules and regulations governing the use of forests.

43 IMF, Solomon Islands: 2008 Article IV Consultation—Staff Report; Staff Supplement; Public Information Notice on the Executive Board Discussions, IMF Report No. 08/358, November 2008, p. 11.

44 Thomas Enters Tan and Associates Thailand, *Independent assessment of the implementation of codes of logging practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu*, Secretariat of the Pacific Community, April 2007, p. 13.

45 Andreas Schloenhardt, 'The illegal trade in timber and timber products in the Asia-Pacific region', *Research and Public Policy Series*, No. 89, Australian Institute of Criminology, 2008, pp. 72–75.

Mining

5.30 A number of Pacific island countries, including Fiji, PNG and Solomon Islands, have rich mineral reserves. A recent report by the Commission on Sustainable Development found that for a few small island developing states, mining operations have contributed meaningfully to the rural economy:

Papua New Guinea has porphyry-copper, silver and gold mines; Fiji is endowed with large porphyry-copper deposits and two gold mines; the Solomon Islands recently opened its first gold mine.⁴⁶

5.31 PNG, in particular, has a long history of mining operations which now form a significant part of its economy, accounting for 85 per cent of exports. Indeed, the mining industry in PNG is one of the largest in the Asia–Pacific region. The major mines are Lihir Gold, Porgea and Ok Tedi. There is also the proposed liquefied natural gas (LNG) project.

Environmental concerns

5.32 The Pacific Islands Forum identified environmental degradation as one of the major challenges facing the mining industry in the region.⁴⁷ Similarly, the University of Queensland's Consortium on Community Building and Responsible Resource Development was of the view that mining operations, particularly large-scale ones, present significant challenges in the region.⁴⁸ It cited environmental pollution and social dislocation as a possible and serious downside to be avoided.⁴⁹

5.33 Indeed, experience shows that over the years poor mining practices have caused 'physical dislocation and environmental degradation in rural areas'.⁵⁰ For example, exploitation has seriously degraded the land in Nauru. In 2003, the UN Department of Economic Development and Environment estimated that, 'by the time primary mining is completed this early 21st century, nearly two-thirds of the island

46 UN Economic and Social Council Commission on Sustainable Development, 'Integrated review of the thematic cluster of agriculture, rural development, land, drought, desertification and Africa in Small Island Developing States', Report of the Secretary-General, E/CN.17/2008/9, 5–16 May 2008, paragraph 31.

47 Pacific Islands Forum Secretariat, 'Forum Outlines Key Challenges to Mining', Press Statement, 28 February 2007, <http://www.forumsec.org/pages.cfm/newsroom/press-statements/2007/forum-outlines> (accessed 21 January 2009).

48 *Submission 6*, p. 3.

49 *Submission 6*, p. 3.

50 See for example, UN Economic and Social Council Commission on Sustainable Development, 'Integrated review of the thematic cluster of agriculture, rural development, land, drought, desertification and Africa in Small Island Developing States', Report of the Secretary-General, E/CN.17/2008/9, 5–16 May 2008, paragraph 32.

will have been converted from a gently undulating, productive forestland to an almost totally unproductive pinnacle and pit topography'.⁵¹

5.34 Located in the Western Province of PNG, Ok Tedi also provides a warning of the damage and dislocation that mining may cause to the environment and to the livelihood and the culture of local communities.⁵² In the past, tailings and rock waste from this mine were discharged into the Fly River and its tributaries causing extensive damage to the river and disruption to the social fabric of local people; a legacy that will continue long after the mine closes. Mitigation and remediation measures are currently in place and a program of community development projects operates to assist local people.⁵³

5.35 Although by its nature mining causes environmental and, in some cases, social disruption, the Pacific 2020 report highlighted the critical role of government in minimising the risk of environmental damage due to the extraction of minerals. It argued that without effective governance, mining 'will not only cause local environmental damage, but also generate prosperity only in the short run and do nothing to lay the foundations for long-term growth'.⁵⁴

5.36 The committee has already raised concerns about the importance of capacity in the governments of Pacific island countries to manage their natural resources in a sustainable and effective way. The mining sector further underlines this now dominant theme.

5.37 For instance, the proposed PNG LNG project highlights the requirement for the PNG Government to have expertise across a range of disciplines to oversee the project effectively. The project involves 'in excess of US\$10 billion for the initial phase' and is 'the largest private sector investment ever contemplated in PNG'.⁵⁵ To start with, the government needs people with the relevant scientific and technical

51 Department of Economic Development and Environment, *First National Report to the UN Convention to Combat Desertification, Republic of Nauru*, April 2003, p. 5.

52 Peter S. Adler, Janesse Brewer and Caelan McGee, *The Ok Tedi Negotiations*, the Keystone Center, 24 August 2007, Executive Summary. See also Glenn Banks, *Papua New Guinea Baseline Study*, International Institute for Environment and Development, October 2001, p. 17.

53 Peter S. Adler, Janesse Brewer and Caelan McGee, *The Ok Tedi Negotiations*, the Keystone Center, 24 August 2007, Executive Summary. See for example, Glenn Banks, *Papua New Guinea Baseline Study*, International Institute for Environment and Development, October 2001, pp.16–17; George W. Pring, University of Denver College of Law, *Mining, Environment and Development*, published by UNCTAD, 2007, p. 23; Department of Resources, Energy and Tourism, May 2008, p. 7.

54 AusAID, *Pacific 2020, Challenges and Opportunities for Growth*, May 2006, p. 13. Also see UNCTAD, *Mining, Environment and Development*, Papers prepared for UNCTAD, n.d., p. 16. It stated that 'with effective planning, modern technology and careful management, much of the degradation historically associated with mining can be avoided and mining can be pursued at an acceptable environmental cost'.

55 *Committee Hansard*, 26 March 2009, p. 38.

skills to assess the environmental implications of this project. According to Mr Peter Graham, Esso Highlands Ltd, the project co-venturers have spent two years developing the environmental impact statement. The document is made up of 'some 5,000 pages and 36 independent studies'.⁵⁶ Even though the co-venturers have published the document on their website and undertaken to provide copies to anyone who asks for it, the Government of PNG confronts the difficult challenge of sifting through and analysing the contents of the document. The magnitude of this project places a heavy demand on the capacity of the PNG Government to supervise it effectively. Should it proceed, the government will have to manage not only environment and social issues, but also the revenue stream created by the project. The way in which governments oversee and support these large projects is discussed further in chapter 14 on governance and financial management.

5.38 The large scale commercial mining operations underscore the importance of governments having the necessary expertise to analyse the environment and social impacts of proposed projects and to manage the revenue windfall from these operations. Donor countries, such as Australia, could assist the governments of the Pacific island countries to build their capacity in these areas.

Summary

5.39 As with agriculture and fisheries, concerns abound about resource management in the forestry and mining sector, including the tendency for short term gains to crowd out consideration of the long term economic sustainability of the economy and the environment. The occurrence of natural disasters and the adverse effects of climate change magnify the importance of sound sustainable development.

Sustainable development, natural disasters and climate change

5.40 To this stage, the committee has considered the major threats posed to the sustainable development of the region's natural resources. The pressure from population growth, the over-exploitation of resources, poor harvesting practices, lax or inappropriate management of resources, and inadequate monitoring of, and compliance with, regulations increase the vulnerability of the region's natural resources. Fragile environments already under strain are less able to withstand the added effects of a natural disaster or changes in climate.

Natural disasters

5.41 In chapter 3, the committee noted the damage caused to the economies of Pacific island countries by natural disasters and the growing concerns about the effects of climate change on economic development in the region. In this section, the committee looks at the measures being taken to minimise the adverse effects of natural hazards and climate change on Pacific island countries.

56 *Committee Hansard*, 26 March 2009, p. 46.

5.42 The natural disasters that strike Pacific island countries have far-reaching effects on land use and serious environmental consequences especially when combined with unsustainable development behaviour.⁵⁷ The committee has noted the over exploitation of trees and poor road construction that degrade the land. These damaging practices also increase the vulnerability of the environment to the effects of weather extremes and highlight the importance of developing and implementing sustainable environmental management regimes.

5.43 Indeed, as noted in a United Nations environment paper 'land use and land cover changes are eroding the natural buffers' that protect communities from serious risk. The resulting environmental degradation 'is known to transform a hazard into a disaster or to increase several times fold the impact of a disaster'.⁵⁸ For example, the Ministerial Conference on Environment and Development in Asia and the Pacific noted that the storm damage caused by Cyclone Ofa, which devastated Samoa, was 'amplified by the loss of resilient traditional housing and farming practices and loss of mangrove areas'. It stated:

Poor logging and farming practices now result in greater flooding and soil loss and these, in turn, cause loss of valuable soil from the land and siltation of coastal coral reef and sea grass communities.⁵⁹

5.44 Clearly, an environment weakened by the pressure from increases in population, by overuse and poor practices is also more susceptible to changes in climate.

Climate change

5.45 Numerous studies identify the lower lying small island states as being among the most vulnerable countries to the adverse effects of climate change.⁶⁰ In some

57 Ministerial Conference on Environment and Development in Asia and the Pacific 2000, 'Review of the state of the environment of the pacific islands', Kitakyushu, Japan, 31 August–5 September 2000.

58 UN Environment Programme, *Environmental Management and Disaster Preparedness: Building a multi-stakeholder partnership*, 2005, p. iii.

59 Ministerial Conference on Environment and Development in Asia and the Pacific 2000, 'Review of the state of the environment of the pacific islands', Kitakyushu, Japan, 31 August–5 September 2000. *Pacific 2020* also noted that the 'environments on which so many Pacific island people depend are arguably being degraded. They are certainly being managed in ways that cannot be sustained, creating significant negative impacts for present and future generations. As well, many of the forest resources are particularly vulnerable to natural catastrophes, especially cyclones. Mangrove forests, for example, can help to mitigate the effect of natural disasters, particularly in small island states.' AusAID, *Pacific 2020, Background Paper: Forestry*, January 2006, p. 4, http://www.ausaid.gov.au/publications/pdf/background_forestry.pdf (accessed 2 December 2008).

cases, changes in weather patterns are already creating problems.⁶¹ The *Garnaut Climate Change Review* noted that small rises in sea level have been associated with saline intrusion into gardens and household water supplies. It cited examples of village communities that have been displaced by the destruction of food and water supplies because of unexpectedly high king tides.⁶² A number of witnesses also highlighted concerns about the damaging effects of changes in climate in the Pacific region.⁶³ The attachment to AusAID's submission, *Pacific Economic Survey 2008*, stated that climate change is 'the biggest long-term threat':

The most recent assessment by the International Panel on Climate Change (IPCC, 2007) highlighted the special vulnerability of small island states to climate change, including changing rainfall patterns and temperature increases, the potential for an increase in extreme weather events, and, in the longer term, rising sea levels.⁶⁴

5.46 Dr Hearn informed the committee that communities experiencing salination and reduced crop yields on previously fertile soils because of changes in climate are 'very concerned and very frightened' by them.⁶⁵ Professor Jane McAdam similarly spoke of dire circumstances where people are no longer able to grow traditional crops with consequences such as increases in diabetes. She noted that as the water starts encroaching on the land and mosquito infestations begin, there have been increases in malaria.⁶⁶

5.47 Despite growing concerns about the effects of changes in climate, a recent UN report described the overall response by Pacific island countries to these changes as 'project-based, ad hoc and heavily dependent on external resources'. It stated that some of the common reasons for such a feeble response include 'competing priorities, lack of national government commitment, limited capacity and the dominance of international priorities over national ones in the climate change agenda'.⁶⁷

60 See for example, Food and Agriculture Organization of the UN, *Climate change and food security in Pacific island countries*, Rome, 2008, p. 5; Ministerial Conference on Environment and Development in Asia and the Pacific 2000, 'Review of the state of the environment of the Pacific islands', Kitakyushu, Japan, 31 August–5 September 2000.

61 See for example, Food and Agriculture Organization of the UN, *Climate change and food security in Pacific island countries*, Rome, 2008; Ministerial Conference on Environment and Development in Asia and the Pacific 2000, 'Review of the state of the environment of the Pacific islands', Kitakyushu, Japan, 31 August–5 September 2000.

62 Ross Garnaut, *The Garnaut Climate Change Review*, Final report, Cambridge University Press, 2008, pp. 149–151.

63 *Submissions 1, 10, 14 and 65*.

64 AusAID, *Pacific Economic Survey: connecting the region*, 2008, p. 4.

65 *Committee Hansard*, 20 November 2008, p. 45.

66 *Committee Hansard*, 24 March 2009, p. 38.

67 Food and Agriculture Organization of the UN, *Climate change and food security in Pacific island countries*, Rome, 2008, p. 14.

5.48 It recognised the critical importance of subsistence and commercial agriculture to local food security and export earning revenues. In its view, the 'implementation of adaptation measures to build resilience of food systems is critical to avoiding enormous economic losses in agricultural, forestry and fisheries'.⁶⁸ The study made a number of observations based on case studies of climate change undertaken in Pacific island countries. They included:

- a clear need to focus on supporting agricultural production in the context of changing climatic conditions and future climate change scenarios;
- the limited human capacity among Pacific island countries which highlights the need to focus on capacity development;
- the potential opportunities for increased food in coastal marine area through mariculture/aquaculture;
- a lack of awareness and information available to governments and communities to enable them to assess the potential of climate change and to make appropriate decisions; and
- real progress can only be made with support from development partners.⁶⁹

5.49 It argued that Pacific island countries should focus on adaptation and, to a lesser extent, on mitigation. It suggested they need to concentrate on:

...win-win measures, such as switching to drought resistance crop varieties, improving climate information dissemination systems and farm level management, strengthening the enforcement of fisheries and forestry legislation and eliminating bureaucratic inefficiencies in government.⁷⁰

5.50 One of the major challenges for Pacific island countries is to find the resources to meet the challenges posed by climate change. Peceli Vocea, Governor of the Bank for Fiji, argued that, because of their greater susceptibility to the adverse effects of changes in climate, poor and developing countries will bear a bigger burden of the adaptation and mitigation costs:

As a result, rehabilitation costs of climatic events are sometimes met at the expense of planned developmental programs, which add pressure to Government finances.⁷¹

68 Food and Agriculture Organization of the UN, *Climate change and food security in Pacific island countries*, Rome, 2008, p. vii.

69 Food and Agriculture Organization of the UN, *Climate change and food security in Pacific island countries*, Rome, 2008, p. 13.

70 Food and Agriculture Organization of the UN, *Climate change and food security in Pacific island countries*, Rome, 2008, p. 16.

71 IMF, Statement by the Hon. Peceli Vocea, Governor of the Bank for Fiji at the Joint Annual Discussion, Boards of Governors Meeting, Press Release No. 49, 13 October 2008, <http://www.imf.org/external/am/2008/speeches/pr49e.pdf> (accessed 14 October 2008).

5.51 The President of Kiribati similarly noted the limited resources available to combat the effects of climate change. He told the United Nations General Assembly that seawall construction was Kiribati's main adaptation measure but that protection was limited to public infrastructure. He stated, 'We simply do not have the resources to extend the protection to private properties.' Ultimately, though, he noted, that low-lying countries such as Kiribati 'will have to face up to the reality of their islands being unable to support life and to plan accordingly beyond existing adaptation strategies'.⁷² According to the President:

While the international community continues to point fingers at each other regarding responsibility for and leadership on this issue, our people continue to experience the impact of climate change and sea level rise. And practical solutions continue to evade us.⁷³



Rising sea levels and flooding cause damage in low-lying islands of the Pacific. Here people in Kiribati are repairing a breakwater damaged by strong currents (image courtesy of the Pacific Calling Partnership at the Edmund Rice Centre).

72 Statement by His Excellence Anote Tong, President of the Republic of Kiribati, General Debate of the 63rd Session of the UN General Assembly, 25 September 2008.

73 Statement by His Excellence Anote Tong, President of the Republic of Kiribati, General Debate of the 63rd Session of the UN General Assembly, 25 September 2008.

5.52 This observation highlights the importance not only of raising the level of awareness and understanding of climate change and its potential threat to sustainable development and food security but also ensuring that these countries have the resources, including human capacity, to meet the challenges. For some low-lying islands, the matter of resettlement is a real prospect.

Summary

5.53 With their small populations and land mass, Pacific island countries are not in a position to make a significant difference to the advent or extent of climate change. Their main efforts focus on adapting to change as best they can and ensuring that human activity does not expose their environment to greater risk from the damaging effects of natural disasters and changes in climate. In this regard, donor countries such as Australia can assist them. Indeed, the potential adverse effects of changes in climate strengthen the need for research into sustainable development, raising awareness of the need for best practice in managing land and marine resources and capacity building covering all facets of resource management. For the low lying small island states, Australia could take a leadership role to find, and help these countries implement, practical solutions to deal with the detrimental effects of climate change.

Conclusion

5.54 The committee has highlighted the importance of agriculture, fishing, forestry and mining to Pacific island countries. It has also noted the critical need to ensure that these resources are used and managed in a manner that does not endanger the physical environment and livelihoods of communities and allows the economy as a whole to benefit. In many cases, the committee drew attention to problems within each sector due in part to inadequate education on, and research and development into, the sustainable development of natural resources in the region. It also identified difficulties with poor resource management practices and attitudes toward sustainable development, the lack of human capacity and inadequate physical resources. Finally, it found that weak political will to manage natural resources effectively and to promote and enforce best management practices compounds the problems. These themes around the importance of research, development, education and capacity building across a range of activities, even at this stage of the report, are firmly established and are key areas in which Australia could have a significant role in assisting Pacific island countries to meet their economic challenges.

