

ENVIRONMENTAL AND SOCIAL SAFEGUARDS ASSESSMENT¹

A. Country context

1. **Population.** The current population of PNG is 7.5 million of which the vast majority (about 85%) lives in rural areas, often in small remote settlements widely dispersed throughout the country's large main island and more than 600 smaller islands and islets. The population density is low with 11.2 persons per square kilometer. Since only one-third of the total land area (463,000 km²) is suitable for agriculture, the distribution of population density is very uneven across the country.

2. **Biodiversity.** PNG is one of the last three major remnant tropical natural wilderness areas on earth, accounting for 5-7% of the world's biodiversity. It ranks among the top five most bio-diverse countries in the world with an estimated 21,000 types of higher plants, 242 species of mammals, and 762 species of birds. It also has one of the highest endemic rates of wildlife anywhere in the world due to the isolation of the island from the rest of the Asian and Australian continents. However, this wealth of biodiversity is threatened by a number of socio-economic factors including large-scale commercial logging; high population growth rates and an ongoing reliance on subsistence agriculture on land; and by overfishing, sedimentation, and pollution in the near-shore and offshore waters.

3. **Land Resources.** PNG has a total land area of 46 million hectares (ha) of which about 58% is subjected to strong or severe erosion, another 18% is permanently inundated or regularly flooded, and up to 200,000 ha are cleared annually for traditional agriculture. Unfortunately, the short-term cash needs of traditional landowners (often met through the sale of timber) have outweighed the long-term needs for conserving their resources for future generations.

4. **Forest Resources.** Forest covers 61% of PNG and 50% of Autonomous Region of Bougainville Province, and about 40% of the country is covered with commercially exploitable trees. PNG has the world's third largest tropical forest but demand for its timber has led to extensive deforestation. Nearly one-quarter of PNG's rainforests were damaged or destroyed between 1972 and 2002; most deforestation occurred in commercially accessible forests, where annual losses of forest ranged from 1.1% to 3.4%. Overall, PNG's primary forest cover fell from 33 million ha to 25 million ha over the 30-year period. With forestry being PNG's third largest export revenue earner, each year 50,000-60,000 ha of forest are cleared totally and permanently: 50% for agriculture, 25-30% for industrial logging, and the remainder for new infrastructure.

5. Apart from contributing to greenhouse gas emission, deforestation threatens the livelihoods of rural residents through the loss of non-timber resources and well-developed road systems, causing soil erosion and contaminating water supplies.

6. **Coastal Resources.** PNG supports a plethora of coastal habitats, resources, and environments, including deltaic floodplains, estuaries, tidal flats, mangroves, beaches, bays, lagoons, sea grass beds, and coral reefs. The mangrove systems associated with the major river systems are extensive and well-developed, and provide a variety of products of direct use to local people, including firewood, building materials, and medicine. Coral reefs cover a total

¹ This assessment updates the findings of ADB; TA 6204-REG: *Mainstreaming Environmental Considerations in Economic and Development Planning Processes in Selected Pacific Developing Member Countries – Papua New Guinea Country Environmental Analysis* (December 2004). This Summary does not include issues related to Climate Change as a standalone Climate Change Mitigation and Adaptation Assessment will be prepared to guide ADB investments and approaches in that thematic area.

area of about 40,000 km² with coral diversity that is typically very high and considered of significant importance to global biodiversity. Kimbe Bay (New Britain) is the largest island in the Bismarck Archipelago, supports more than 820 species of coral reef fish, and is part of the Coral Triangle - the global center of marine biodiversity covering an area of 5.95 million km² of ocean. In general, PNG's coral reefs are relatively unaffected by human activities, but are nevertheless at risk from anthropogenic threats such as unsustainable fishing, sediment mobilization from deforestation, subsistence agriculture and other activities, and the effects of climate change, such as coral bleaching caused by higher sea temperatures and rising sea levels.

7. **Fishery Resources.** PNG's fishing zone of 2.4 million km² is the largest in the South Pacific. PNG's fishery resources consist of a wide variety of lagoons, reefs, deep slopes, pelagic, and bottom species. Prawns, barramundi, lobster, and high-value sedimentary species dominate the commercial landings from the coastal fisheries. There is also small-scale commercial fishing for giant clam (*Tridacna*), green snails, trochus, pearl oyster, and beche-de-mer.

8. Tuna is the main offshore resource, annual catch is in the order of 150,000 metric tons (mt) to 200,000 mt but it is estimated that the resource can sustain much higher annual catches of between 250,000 mt and 300,000 mt. With PNG tuna accounting for about 18% of the world's tuna stock, catch from PNG waters accounts for 20-30% of the regional catch and about 10% of the global catch. The Pacific Tuna Forum estimates the raw value of PNG's annual catch at about US\$1.5 billion per annum and says this figure could more than double if more value-added activities were implemented. Most tuna fishing in PNG has historically been carried out by licensed foreign fishing vessels from the Philippines, Taiwan, Korea, US, FSM, Kiribati, and Vanuatu. Most of the catch is transshipped onto reefer vessels in the PNG ports of Wewak, Manus, Kavieng, Rabaul, Lae, and Madang for shipment to canneries in Thailand, the Philippines, and American Samoa. After many years of foreign domination, local long-liners are now operating in the fishery and landing yellow-fin and big-eye tuna and other large pelagic species. A locally based tuna purse seine fishery has also developed, although operated largely through the charter of foreign vessels by local companies. There is now concern that yellow-fin and big-eye tuna may be nearing an overfished state.

9. **Mineral Resources.** PNG is richly endowed with gold, copper, oil, natural gas, and other minerals. In 2011-2013, mining and oil sector comprised between 15-20% of GDP, and approximately 75% of total export earnings. Government revenues and foreign exchange earnings depend heavily on minerals and oil exports, and indigenous landowners in areas affected by mining projects receive royalties from operators. Copper and gold mines are in production at Porgera, Ok Tedi, Misima, and Lihir. The Ok Tedi Mine (Western Province) contributes around 50% of the country's total export earnings, generating substantial internal revenues, and spin-off commercial activities. With construction commencing in 2010 the PNG liquefied natural gas (LNG) project (developed through a consortium led by Exxon/Mobil) includes gas production and processing facilities in the Southern Highlands, Hela, Western, Gulf and Central Provinces. There are over 700 km of pipelines connecting the facilities, which includes a gas conditioning plant and liquefaction and storage facilities with capacity of 6.9 mt per year. The project is expected to produce first LNG in mid-2014. While exploitation of mineral resources has made significant contributions to the nation's economy, the mining industry has been a major cause of environmental degradation in PNG, in numerous cases adversely impacting on local ecology, polluting rivers and damaging adjacent agricultural lands.

10. **Social Groups and Culture.** PNG is one of the most socially and culturally diverse countries in the world, with about 1000 social groups and about 800 languages spoken. The majority of the people are indigenous Melanesians. People are organized in small, fragmented

social groups, usually based on kinship or clan groups comprised of people who share a common ancestry. The *wantok* system defines reciprocal exchange relationships and obligations between individuals who share a common bond - of language, kinship, geographic area, social association and/or religion. The strongest allegiances of people in PNG tend to be to their local community and land. Community leadership is an evolving process that relies on the identification of leaders on the basis of their achievements and an egalitarian approach to decision-making among adult men. English is the official language; the lingua franca are Melanesian pidgin (Tok Pisin) and to a much lesser extent, Hiri Motu (the language of Papua and the south coast). Most of the population is at least nominally Christian, and there is a plethora of different Christian denominations and sects, adding to the traditional social diversity.

11. Customary Land Ownership. An estimated 97% of land in PNG is customary-land, under some form of collective ownership by local groups or clans. Clan members or “primary right holders” are co-owners, with rights to use but not to alienate land. They own/possess the land as stewards for future generations. Land ownership and use is an integral part of the identity, the sustenance and the social relations of clans; property rights are inherited from ancestors and maintained in trust for future generations. PNG’s Constitution explicitly provides for the adoption of custom as part of the underlying law of the country. The Constitution provides for the customary ownerships of the land as well as protects people from unjust deprivation of their land and property.

12. Deforestation. Although PNG accounts for less than 0.5% of the planet’s land cover it is one of the most forested countries on the planet. A study conducted by researchers at ANU and UPNG compared satellite images taken over three decades from the early 1970s. In 1972 the country had 38 million ha of rainforest covering 82% of the country, about 15% of that was cleared by 2002. Despite an increase in logging concessions, deforestation has not increased significantly since the end of the 1990s. Total forest loss since the 1990s is in the order of 6.6% and while some 4 million ha (13.7%) of primary forest was razed between 1990 and 2005, the annual average deforestation rate has held at about 1% per year. More than 5 million ha of customary-owned land - 11% of the country and more than 16% of accessible commercial forests - have been signed over to unrepresentative landowner companies and foreign-owned corporations for up to 99 years. According to the PNG Forest Authority the total log harvest in 2006 was 3.38 million m³, however in August 2006 the World Bank estimated that illegal logging could account for as much as 70% of logging in PNG, which would fall well outside the official national log harvest figures.

13. The effects of deforestation on the environment are both direct and indirect. Direct effects include: soil degradation; silting of waterways and offshore reefs; loss of wildlife habitat and food resources; loss of tourist potential; chemical pollution of soil and water; and climatic changes. In PNG commercial logging operations result in 22 million tons of carbon being emitted every year and contribute to global warming. Indirect effects include: changes in human demography with increases in local population; overtaxing of food, water, and hygiene resources; dislocation of social and cultural frameworks and social order.

B. Core environmental and social safeguards issues

14. Weaknesses of existing country systems (CSS) for environmental management. As part of a large regional technical assistance (TA) for strengthening application and use of CSS², ADB engaged with Department of Environment and Conservation (DEC) as the national level agency responsible for CSS implementation and PNG Power Ltd (PPL) and Department of

² ADB. 2014. *Strengthening and Use of Country Safeguard Systems: PNG Subproject – Environmental Country Safeguards Systems Review*. Manila.

Works (DOW) as the lead agencies at the sector level (energy and transport respectively) to undertake assessments of (i) the level of equivalence with the scope and principles of ADB's Safeguard Policy Statement 2009 (SPS) and (ii) the acceptability of the implementation practice (track record).

15. The assessment concluded that for DEC there is insufficient systemized record/information documentation on environmental permit (EP) applications, public consultations, and referral/advertisement of the applications, with one of the main deficiencies being the lack of requirement for an environmental management plan (EMP). For PPL a major deficiency was that projects were not being implemented in accordance with the EP requirements, and DOW – which has agreed a code of practice with DEC – struggles for consistency of application across its projects. Both agencies have insufficient capacity to properly monitor compliance and DEC does not have the capacity to audit PPL and DOW projects. Inevitably the workload for DEC will increase and become increasingly more complex as larger more technically complex projects are presented for review. Overall the conclusion of the assessment is that neither CSS procedures nor capacity will meet ADB environmental safeguard requirements without an ongoing and targeted technical assistance program to build capacity and strengthen procedures within DEC and sector implementing agencies such as PPL and DOW along with project-specific support.

16. **Weak implementation capacity for customary land management and implementation of social safeguards.** Several laws have been enacted on land management, including land access for development projects. Land Act (1996) sets out the conditions and procedures for the State to acquire land required for public purposes such as roads, airports, ports and power plants. The Land Disputes Settlement Act (2000) sets out the procedures for resolution of disputes involving customary land. Land Group Incorporation (Amendment) Act (2009) and Land Registration (Amendment) Act (2009) recognize the corporate nature of customary groups and allow them to hold, manage and deal with land in their customary names, and for related purposes. These Acts also facilitate voluntary registration of customary land, to be known as “registered clan land” by local land owners, which makes the land available for development through the use of Incorporated Land Groups.

17. However, the implementation capacity is weak and land management remains problematic. This poses challenges to development project particularly infrastructure-focused that usually require acquisition of or access to land. The following are key challenges on land acquisition/social safeguards that most ADB financed projects in PNG face:

- a. Absence of land titles. Efforts of registration and survey of customary land has not been successful so far. The land title remains mostly unregistered and boundaries unmarked, which makes it difficult for identification of correct land owners.
- b. Ownership disputes. Customary land involves several land groups sometimes with conflicting claims on the same area of land. The land is collectively owned by clans, but it involves diverse users. Resolution of disputes and getting consensus on landowners are time consuming and resource-intensive tasks.
- c. Compensation disputes. Landowners have rising expectation of compensation whenever development projects require their land. On the other hand, the government departments or project executing/implementing agencies (EA/IAs) try to avoid or minimize compensation. Government rates are low and payment of compensation is often delayed. These results in conflicts arising between affected landowners and project implementing agencies.

- d. Weak capacity of Department of Land (DOL) and poor coordination between DOL and project executing/implementing agencies (EA/IAS). The DOL capacity in land administration is weak and there is poor coordination between DOL and EA/IAS. As a result, EA/IAS try to find short-cuts to access land rather than following proper legal process and procedures in coordination with DOL.
- e. Poor social safeguard planning, monitoring and reporting. Most EA/IAS do not have adequate staff with required skills on preparation of safeguard plans (e.g. land acquisition and resettlement plans), monitoring implementation, and reporting. Most of the EA/IAS rely on consultants for these tasks and the performance varies across projects.
- f. Inadequate funding. Land management and acquisition activities are often underfunded.

18. Despite these challenges, some projects have been successful in managing social safeguards when (i) EAs/IAS are committed and they have capable project staff and good consultants; and (ii) adequate budget is made available.

C. Asian Development Bank's strategy

19. **ADB's Strategy 2020.** To realize environmentally sustainable growth under Strategy 2020, ADB will continue to promote and invest in sound environmental and natural resources management, move economies on to low-carbon growth paths, reduce the carbon footprint of Asia's cities, and adapt to the unavoidable impacts of climate change.

20. In pursuing its strategic development agenda, ADB selected five core areas for support, since it cannot meet all the needs of its DMCs, namely: environment, infrastructure, regional cooperation and integration, finance sector development, and education. In environment, addressing climate change is one of the thematic areas of operation. ADB will help its DMCs improve energy efficiency, expand the use of clean energy sources, promote improved urban sanitation and the reduction of fugitive methane emissions, enable sustainable transport policies and apply efficient systems, and promote sustainable land use and management of forest and natural resources for provision of clean water supplies, protection of biodiversity, and sequestration of carbon from the atmosphere to offset greenhouse gas emissions. ADB will also help DMCs address their vulnerability risks from climate change by supporting climate proofing infrastructure and by increasing the climate resilience of vulnerable sectors, such as water and agriculture, and addressing the social dimensions of climate change.

21. Consistent with Strategy 2020, ADB set a target of 40% of investment resources to be directed towards environment and climate change by 2020. It will use its technical and financial resources to help its DMCs make the transition to low-carbon growth paths, using cleaner sources of energy and using energy more efficiently, and building resilience to the expected impacts of climate change.

Strategy 2020 emphasizes assisting DMCs to pursue socially inclusive as well as environmentally sustainable development. ADB's Safeguard Policy Statement (SPS) affirms the social and environmental sustainability and aims to promote the sustainability of outcomes of ADB projects by protecting the environment and people from project's potential adverse impacts.

22. **The Pacific Approach.** In line with Strategy 2020, the Pacific Approach, 2010-2014 sets out an overarching framework for ADB's engagement with the 14 Pacific DMCs (PDMCs) and provides broad strategic directions for its operations in the Pacific, including the future formulation of individual CPS and operations plans. It also recognizes the need to improve the

design of ADB operations and strengthen development partnerships and effectiveness in anticipation of a substantial increase in ADB's assistance to the region. The Pacific Approach aims at sustained, resilient, improved standards of living that support the overall vision of the Pacific being a region of peace, harmony, security, and economic prosperity.

23. This goal is to be achieved via the implementation of an agenda that will foster connectivity, consensus, and a greater community through (i) inclusive and environmentally sustainable growth by way of investments that optimize natural resource use and protect against overexploitation; (ii) good governance in terms of accountability, transparency, participation, improved policy, and institutional settings; and (iii) regional cooperation and integration that will build on existing identification and provision of priority regional public goods and services. This agenda will be implemented through selected priority sector-level operations that are aligned with the needs of the fragile situations in the Pacific, and will be driven by (i) an improved private sector environment, (ii) public sector management, (iii) capacity development, (iv) climate change adaptation and mitigation, (v) development partnerships, and (vi) gender mainstreaming.

24. **PNG Government Vision 2050.** Launched in November 2009 by the Government of PNG this document provides the national development framework that will drive the country's development over the next 40 years. Vision 2050 has seven pillars: (i) institutional development and service delivery; (ii) human and social capital development; (iii) wealth creation; (iv) security and international relations; (v) climate and environmental sustainability; (vi) churches and development; and (vii) strategic planning, integration, and control. Its critical enablers are: (i) effective leadership and good governance; (ii) healthy, educated, and skilled citizens; (iii) enabling legislation and policies; (iv) enabling basic infrastructure; (v) financial capacity; (vi) effective service delivery; (vii) enabling citizen values and participation; and (viii) performance and accountability. The framework seeks to achieve this vision through supporting transformation of the economy from one dominated by the mining and energy sectors to one that can generate more broad-based economic growth. It targets the tripling of the country's GDP per capita (to US\$3,000) and improved access to electricity and to basic health and education services for 70% and 100% of the population respectively by 2030.

25. **ADB and PNG Government Strategy Intersection.** ADB's Strategy 2020 and Pacific Approach and the Government's Vision 2050 target environmentally sustainable economic growth, with environment identified as a key focus of their operations. Both ADB and the Government recognize the value of knowledge as a development catalyst and will support pilot projects from which to draw best practice examples and lessons learned for dissemination to a wide range of stakeholders – from policy and decision makers to local communities – for application in the design of various interventions.

26. Consistent with Strategy 2020, Pacific Approach, 2010-2014 and in support of Vision 2050, the goals of CPS (2016-2020) should include “effective environment and social safeguard responses.” Specific areas of ADB support could be measures required to address the limitations or inadequacies of existing policy frameworks, institutional structures, and capacity for implementing the action required for effective application of environmental and social safeguard measures.

27. Considering PNG's key environmental and social safeguard issues and the Government's human resource limitations, which constrain effective CSS implementation and environmental management, focus areas for the CPS could include the following programs and activities:

Environmental Safeguards:

- Promotion of integrated forest and land use management, including community livelihood development to contribute to better resource management and enhance resilience to climate change and mitigation where land use change is avoided or reversed;
- Disaster risk management, including early warning systems and community-based disaster risk management emergency preparedness and response, particularly through the usage of coastal navigational aids and safety management system; Emissions reduction solutions including energy conservation and efficiency (supply and demand-side measures), through clean energy development and renewable energy investments;
- Continuing strengthening CSS framework and implementation capacity including:
 - Policy and legal reform and institutional strengthening to enable effective implementation and enforcement of supporting policies, laws, and regulations including target interventions identified in the Action Plan prepared under RETA 7566;³
 - Capacity building, including of the private sector and NGOs, to strengthen or upgrade knowledge, skills, attitudes, and practices in various climate-related fields such as vulnerability or risk assessment, climate proofing of policies and development plans, incremental analysis of climate change adaptation, climate-oriented environmental assessment; and
 - Public awareness and information, education, and communication campaigns directed at policy/decision makers and the general public to ensure wider understanding and participation of stakeholders in environmental management and protection.

Social Safeguards:

- Working through project activities to strengthen PNG country safeguard systems on land acquisition and resettlement. This may include the allocation of resources within high risk projects to technical assistance to help build the capacity of the Department of Land (DOL) and relevant agencies on: (i) implementation of reforms on customary land management as stipulated in recently amended laws on incorporation of land groups and registration of customary land; and (ii) providing effective and efficient land access/land acquisition services for development projects.
- Providing technical and financial advice and financing to the government's line ministries/agencies/EAs for advance preparation of detailed technical design and undertaking of land acquisition and resettlement activities. For example, setting up a Project Design Facility and encouraging EAs to complete the detailed design and land acquisition activities before ADB loan(s) for the main investment project.
- Application of adequate resources (human and financial) to implement and monitor safeguard requirements at project level and an increased consideration of ADB financing land acquisition and resettlement costs during project design phase.
- Promoting improved coordination between EAs and DOL. EAs to follow the formal/legal process to acquire land for projects and DOL to provide necessary support on this, complying with requirements under CSS as well as policies of funding agencies.

³ ADB. 2012. *PNG Environmental Country Safeguards Systems Review, Elaborated Action Plan*. Manila.

- Enhanced capacity building of, PMU staff, consultants, NGOs and other stakeholders on safeguards at national and local level. This includes public awareness on social safeguard requirements under CSS and ADB policies.

28. The financing of these projects will be provided by ADB, predominately through enhanced allocations to social and environmental safeguards made in project design and/or with co-financing from other development partners to maximize investment effectiveness in supporting environmental and social safeguard systems.