United Nations Development Programme

Country: Papua New Guinea

PROJECT DOCUMENT[1]

Project Title: Community-based Forest & Coastal Conservation and Resource Management in Papua New Guinea

UNDAF Outcome(s): By 2012, rural communities in selected provinces of each region use improved sustainable livelihood practices

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:

By 2012, rural communities in selected provinces of each region use improved sustainable livelihood practices

UNDP Strategic Plan Secondary Outcome: N/A

Expected CP Outcome(s):

Department for Environment and Conservation effectively plans, manages, monitors, and coordinates with other relevant government institutions the sustainable use of natural resources at the national, provincial and local levels.

Communities in selected provinces use their natural resources sustainably to enhance their livelihoods

Expected CPAP Output (s)

National authorities trained on mainstreaming and monitoring of environmental issues. Integrated environmental monitoring and compliance database is established in Papua New Guinea. Effective network established between Department for Environment and Conservation and other relevant government institutions with provincial and local authorities and NGOs, community-based organizations (CBOs) and FBOs.

Provide selected communities with training on more sustainable use of their resources, community-based tourism, renewable energy, accessing funding, and managing small-scale initiatives– all with a special focus on women and women's groups.

Executing Entity/Implementing Partner: Dept. of Environment and Conservation, Gov't of PNG

Implementing Entity/Responsible Partners: UNDP Country Office Papua New Guinea

Brief Description-

The implementation of this project document will help to develop effective natural resource management and financing systems for community conservation areas in Papua New Guinea. The project will work on the following key components in order to succeed with the implementation and execution of the project: 1) Enabling national environment for a community-based sustainable national system of Protected Areas (PAs) containing globally and nationally significant biodiversity; 2) Identification and establishment of new PAs in the country; 3) Undertaking Conservation Area (CA) management planning and signing partnership agreements with communities; and 4) Providing capacity development and support for implementation of CA Management Plans;

Programme Period:	2011-2018
Atlas Award ID:	00058393
Project ID:	00072522
PIMS #	3936
Start date:	July 2011
End Date	June 2018
Management Arrangements	NEX
PAC Meeting Date	_____

Total resources required	29,900,000 USD
Total allocated resources:	29,900,000 USD
• Regular	_____
• Other:	
○ GEF	6,900,000 USD
○ Government	5,000,000 USD
○ UNDP	2,000,000 USD
○ Bilateral (Australia)	14,000,000 USD
○ Other (Bishop Museum)	2,000,000 USD

Agreed by Department of National Planning and Monitoring (Government):

_____

Date/Month/Year

Agreed by Department of Environment and Conservation (Executing Entity/ Implementing Partner):

Date/Month/Year

Agreed by (UNDP):

Date/Month/Year

[1] For UNDP supported GEF funded projects as this includes GEF-specific requirements

CONTENTS

List of Acronyms

I. SITUATION ANALYSIS

CONTEXT AND GLOBAL SIGNIFICANCE

1. Papua New Guinea (PNG) is an island nation lying just to the north of Australia, at the junction of South-East Asia and the Pacific. New Guinea is the largest, highest and most mountainous tropical island on Earth. Papua New Guinea has a land area of 46.3 million ha comprising the eastern half of the island of New Guinea (the PNG mainland), the islands of New Britain, New Ireland, Manus and Bougainville, as well as small coastal island chains and extensive coral reef systems lying within the Coral Triangle. New Guinea's ecological heritage is unique since it derives in part from two sources of origin: Australian elements to the south and Asian elements to the east. As a result, PNG is one of the world's 17 mega-diverse countries; despite accounting for less the 0.5% of the Earth's surface area the country harbors an estimated 6 to 8% of global biodiversity within some of the world's most ecologically diverse terrestrial and marine ecosystems.
2. Much of the country is covered in forests (totaling 33 million ha) overlaying highly rugged terrain, particularly in the central highlands of the PNG mainland. The island of New Guinea contains the third-largest tract of rainforest in the world, and its wetlands are the most pristine in the Asia-Pacific. These habitats rival – or exceed – those on Borneo, as well as the Amazon and Congo for richness; indeed, New Guinea's tally of terrestrial vertebrates probably far exceeds Borneo's[2]. New Guinea is home to more than 800 species of birds[3], including 38 of the 42 known birds of paradise; more than 190 species of mammals, 350 frogs, 400 reptiles (2 crocodiles, 17 turtles, 251 lizards, and 130 snakes)[4] and more than 20,000 species of ferns and flowering plants. These forests have been ranked amongst the world's ten most ecologically distinctive forest regions; it is estimated that a single square kilometre of lowland rainforest may contain as many as 150 different species of birds.
3. However, obtaining definitive information on the biological richness of New Guinea is difficult because even today many areas of the region are poorly studied. Between 1998 and 2008, at least 1,028 new species have been discovered in the forests, wetlands and waters of New Guinea. The newly described species include 130 amphibians, 1 bird, 44 fishes, 581 invertebrates, 12 mammals, 218 plants and 42 reptiles[5].
4. In terms of its biological distinctiveness, New Guinea is more like a continent than an island, possessing a staggeringly wide array of endemic animal and plant species. Endemic species are those *only found* within a specific area and therefore are entirely reliant on the continued existence of the habitats in that area. The island's land mass is home to about 6% of the world's known land species, around half of which are strictly endemic. When marine fishes in New Guinea's seas are taken into account, its share of Earth's species rises to 8%. The degree of endemism is particularly high on the offshore islands of New Britain and New Ireland and the Louisiade Archipelago probably due to their regional isolation.
5. About 4.5% of the world's mammal species are found in New Guinea or a remarkable nine times the average global density of mammal species. Most of these mammals (62%) are endemic. The highest diversity of tree-dwelling marsupials in the world exists here, with 38 species[6]. The island is home to 12 of the 14 known tree kangaroos (of which 4 are critically endangered and 3 are endangered). Three species of echidnas (spiny egg-laying mammals) also inhabit New Guinea, including the critically endangered long-beaked echidna, the world's largest egg-laying mammal. New Guinea also supports to 9 of the 11 species of forest wallabies. Bat species are more numerous than all other mammalian fauna on the island – PNG alone has 91 known species, 9% of the planet's 986 bat species[7]. Similarly, an estimated 53% of New Guinean bird species are endemic.

---

[2] Allison. 2009. *Biology of New Guinea* In: R. G. Gillespie & D. A. Clague (eds), *Encylopedia of Islands.* University of California Press, Berkeley, USA.

[3] Sibley & Monroe. 1990: *Phylogeny and classification of birds of the world*. Yale University Press, New Haven, CT, USA.

[4] Papuan Herpetofauna Project, The Bishop Museum www.bishopmuseum.org/research/pbs/papuanherps/project.html

[5] WWF (in press): *Final Frontier: Newly discovered species of New Guinea*

[6] Beehler (1993): Biodiversity and Conservation of the Warm-Blooded Vertebrates of Papua New Guinea. In Beehler, B.M. (ed) *Papua New Guinea Conservation Needs Assessment, Volume 2*., pp77-156. USAID and the Biodiversity Support Program, Washington DC, USA.

[7] Bonaccorso (1998): *Bats of Papua New Guinea*. Conservation International Tropical Field Guide Series, Conservation International, Washington DC, USA.

6. Coastal and marine resources are also highly significant, with extensive reef and marine ecosystems within the country's 2.4 million km^2 fisheries zone (the largest in the South Pacific), particularly in inshore areas along the country's 20,197 km coastline. PNG's mangrove forests are the sixth most extensive globally (and the second most diverse), and when taken together with the mangroves of West Papua they form by far the largest area of semi-contiguous mangroves in the world[8]. Nine of the WWF Global 200 Ecoregions are in PNG, as well as six Alliance for Zero Extinction (AZE) sites[9]. The entire country falls within two biodiversity hotspots (New Guinea and the East Melanesian Islands) and the forests of New Guinea are found on almost every global listing of priority forest conservation areas.

7. If managed sustainably, experts believe the island's precious habitats such as rainforests, reefs and wetlands, could continue to thrive into the next century, because unlike most other parts of the world these resources are, at present, relatively undiminished[10]. Equally, because of altitudinal range (up to 5,000 m) and the complex terrain, rainforest species here have more chance to adapt to climate change than those in lowland rainforests of the Amazon and Congo. Today more than half (55%) of PNG's forests are still in large blocks (over 50,000 ha) of minimally-disturbed forest ecosystems known as intact forest landscapes (IFLs). Indeed, nature may have a greater chance of survival in New Guinea than in anywhere else in the world.

8. PNG's population of 6.7 million is predominantly rural, with more than 75% of households dependent on subsistence agriculture. Population growth is very high, at a rate of 3.1% per year. Rural population density is greatest in highland areas, averaging as much as 20 people per km^2. Relatively high population concentrations are also found in some coastal areas with rich marine resources, e.g. Popondetta, Wewak and Madang on the mainland and Kimbe in West New Britain.

9. Communities organized in clan-based structures are the primary resource owners in PNG. Approximately 97% of the land base and forest in PNG is owned by clans under customary law, and most coastal and marine resources (reef fisheries, beche-de-mer harvests, mangrove and seagrass beds) are also managed under clan structures. These resources are owned collectively rather than by individuals or household units, and decisions on resource use are made largely by consensus through extensive consultative processes. Therefore, by definition, any protected areas management in PNG must be undertaken in collaboration with the local community. The permanent sale of clan landholdings is prohibited in most cases, and resource-use agreements are generally time-bound. The clan-based resource ownership structure is one of the most important features of natural resource management and conservation in PNG. The country's constitution has one of the world's strongest customary rights framework under its National Goals and Directive Principles. Customary ownership is also recognized in national laws such as the Forestry Act 1991, Mining Act 1992, Lands Act 1996 and the Oil and Gas Act 1998.

10. The extensive private ownership of land and other resources, under decision-making systems that require consultations and consensus, has made the establishment of large-scale protected areas (PA) under State management extremely difficult. At the same time, this customary tenure structure is also a barrier to large-scale land conversion for permanent agriculture or other uses, and has so far limited the impact of commercial logging compared with neighboring countries such as Indonesia.

11. As a developing region with high rates of poverty, development is essential for the people of PNG and large-scale development is increasing; but only improved land-use planning and best practice industry can deliver long-term ecologically sustainable economic growth. As resources continue to be exhausted in other parts of the region the environment of PNG is increasingly under pressure from poorly planned, unsustainable development and resource extraction. New Guinea continues to face growing threats from a wide range of activities, including illegal and/or unsustainable logging, subsistence exploitation, forest conversion for palm oil, commercial mining, road construction, invasive and/or exotic species and unsustainable fisheries. These environmental threats are exacerbated by global climate change which is increasing the incidence of fires within forests and savannas, flood events, erosion, and seawater incursion into coastal regions.

[8] Shearman et. al. (2008); *The State of the Forests of Papua New Guinea: Mapping the extent and condition of forest cover and measuring drivers of forest change in the period 1972-2002*, University of Papua New Guinea, Port Moresby. p.13

[9] AZE sites pinpoint epicenters of imminent extinctions.

[10] Wikramanayake et al. (2001): *Terrestrial Ecoregions of the Indo-Pacific: A Conservation Assessment*. Island Press, Washington DC, USA.

THREATS AND ROOT CAUSES

12. The primary **threats to terrestrial biodiversity** in PNG are deforestation and degradation (from logging and subsistence agriculture), mining (including pollution and waste runoff) and agricultural conversion (e.g. for oil palm, biofuels, etc.). Not only does forest loss result directly from these activities, but the secondary effects from improved road access makes frontier areas susceptible to ongoing clearing for agriculture and salvage logging. Recent spatial analysis suggested that the average annual rate of deforestation and degradation across all regions of PNG over the 1972-2002 period was 1.4%, almost twice the rate previously recorded. It is estimated that by 2021, 83% of the commercially accessible forest areas will have been cleared or degraded if current trends continue. Much of the logging-related forest loss is concentrated in lowland forest areas; by 2002, lowland forests accessible to mechanized logging were being degraded or cleared at the rate of 2.6% annually. In particular, the islands region (New Britain and New Ireland) has been subject to intense logging activity; the majority (63%) of the 2.8 million ha of accessible lowland forests in these areas had been deforested or degraded by 2002. Logging was initially focused in the islands region because of ease of access, fertile soils and good quality forest, more recently this region has been the centre of intensive oil palm plantation development.

13. The main **drivers of forest change** in PNG are logging (48.2%) and subsistence agriculture (gardening) (45.6%). The growth of subsistence agriculture is a pervasive threat to forest areas, linked closely to the high population growth, but this also reflects the needs of communities to develop increased cash crops in response to modern cash driven economic pressures, so well-planned land-use should also be looking to reduce the impacts of this cash cropping on areas of high conservation value.

14. **Large-scale mining** for minerals such as gold and copper have resulted in both direct impacts from forest clearing (including for infrastructure, access roads and associated support) as well as sometimes-extensive indirect impacts from pollution and runoff of tailings. The best-known example of this is from the Ok Tedi gold and copper mine in the Western Province, where contamination from tailings discharge have damaged at least between 250,000 - 150,000 ha of forest in the lower Fly River catchment. Other important river systems, such as the Strickland have also been impacted by sedimentation and pollution issues, while a gold mining lease in the Brown River catchment was refused in 2008 due to concerns about the impacts on the water supply for PNG's capital, Port Moresby.

15. **Agricultural conversion** has not yet had an extensive impact on forest areas compared with logging; however, the pace of conversion is increasing, driven partly by recent price rises for agricultural commodities, and demand for palm oil (including for biofuels). The majority of plantation clearance has occurred in the islands region because of the high fertility soils and flat lowland coastal topography. Despite the relative low cover of plantations (approximately 1% of forestlands nationally), the most intensively cleared and threatened forest areas in New Britain and New Ireland are remnants of some of the most ecologically significant lowland forests, supporting some of the highest levels of endemic bird and plant species on Earth.

16. **Other pressures on forest ecosystems** include subsistence harvesting of non-timber forest products (e.g. eaglewood resin) and hunting and fishing. Subsistence harvesting is generally linked to the need for cash to pay for school fees and basic necessities, while hunting and artisanal fishing are generally for personal consumption or local sale. Traditional hunting is the major threat to endangered mammals such as the Tree Kangaroos. Both these pressures are closely correlated with population growth.

BASELINE

17. Papua New Guinea's constitution clearly recognizes the importance of environmental sustainability as part of the National Goals and Directive Principles. The fourth goal declares that, 'Papua New Guinea's natural resources and environment be conserved and used for the collective benefit of us all, and be replenished for the benefit of future generations'. In response to these concerns PNG ratified the Convention on Biological Diversity (CBD) in 1993. As part of national obligations under the CBD, PNG adopted a National Biodiversity Strategy and Action Plan (NBSAP) in 2007. The NBSAP proposes mainstreaming and integrating nature conservation and protected areas into national policies and strategies. The NBSAP also reiterates PNG's aspirational CBD targets of 10% cover of land and sea in protected areas by 2010 and 2012, respectively, as well as its commitment to achieve the Millennium Development Goals (MDG), particularly Goal 7. Despite the admirable intentions of the NBSAP, PNG has made little or no headway in meeting these goals.

18. Currently, PAs cover about 4.1% of the land area and far less than 1% of marine areas – well below the CBD targets envisaged by this time. PAs have been designated under the National Parks Act 1982 and the Organic Law on Provincial and Local Level Government 1995, while Wildlife Management Areas (WMAs) are designated under the Fauna (Protection and Control) Act 1966. WMAs allow clans to formalize their legal control over the fauna resources of their clan holdings, to manage hunting, fishing and harvesting of other resources. Under these three acts there are currently 61 PAs totaling 1,897,500 ha.

19. In recent years the focus of PA establishment has been on inclusive community-driven models, particularly WMAs. Some local communities have also been declaring ad-hoc community conservation areas (both terrestrial and marine) through the establishment of conservation deeds or conservation contracts under contract law, with the help of grassroots NGOs. However, these community conservation areas are not formally recognized as part of the national PA network. Most existing protected areas in PNG have been designated as WMAs under the Fauna (Protection & Control) Act 1966, since this is the legal structure that most readily accommodates existing community resource management systems. However, this act focuses on faunal resources, and is therefore not an effective legal structure for comprehensive biodiversity conservation at the landscape or ecosystem level.

20. Currently, PA effectiveness in PNG is very low in terms of planning, establishment and support. These weaknesses were recognized several decades ago[11], and the fact that there has been no improvement since was summarized in the recent Rapid Appraisal and Prioritization of Protected Areas Management (RAPPAM)[12], which found that most state-run and community-managed PAs still lack effective management plans, technical capacity and funding support. An analysis of the PA system conducted as part of PNG's response to the CBD Programme of Work on Protected Areas (PoWPA)[13] came to similar conclusions. The ineffectiveness of current conservation approaches were illustrated by a recent spatial analysis indicating that most PAs in PNG have suffered forest clearance or degradation at rates almost identical with non-PA forest areas (indeed, field surveys in New Britain showed that significant portions several small WMAs have been converted to oil palm by local communities).

21. The only viable **long-term solution to the increasing threats** to PNG's high conservation value forests is to bring a representative sample of the country's biodiversity resources under some form of protection. However, as discussed above, a conventional PA approach has been shown to be inadequate and unrealistic for PNG's needs. Customary tenure means the Government has limited ability to demarcate conservation areas and the current WMAs are ineffectively managed and supported; certainly few if, can conform even to the minimum management requirements for multi-use PAs under the IUCN Categories V or VI. Moreover, the PAs that do exist largely fail to achieve any strategic coverage of key biodiversity habitats. The challenge is to develop an effective model of protection which recognizes and accommodates the unique resource ownership structure in PNG but offers real economic and/or development incentives for long-term conservation of important habitats. Thus, this project's long-term vision is to establish a national system built upon existing community-based resource management structures, which conserves a comprehensive, adequate, representative and resilient network of priority biodiversity assets that support sustainable economic growth.

22. Papua New Guinea is yet to develop a species or ecosystem database to determine conservation status and trends of species and ecosystems. However, the data that is available further highlight the need to implement better analysis tools to maximize conservation efforts because the conservation status has only been assessed for relatively few species. As of October 2010, the International Union for Conservation of Nature (IUCN) Red List considered 455 species as endangered in PNG; this constitutes less 2% of known species, but 20% of assessed species. Moreover, a further 14% (314 species) of assessed species are listed as data deficient (see Table 1). Expanding biodiversity surveys and improving species data management will help to identify species or ecosystems under greatest threat, assist in conservation planning and priority setting, and raise awareness of threatened species throughout PNG. A species database would also enable the monitoring of biodiversity,

[11] Williams et al. (1993): *Conservation Areas Strengthening Project 1994-2000*

[12] WWF (2009): *An Assessment of the Effectiveness of Papua New Guinea's Protected Areas Using WWF's RAPPAM Methodology. November 2009*

[13] Tortell and Duguman (2008): *Supporting Country Action on the CBD Programme of Work on Protected Areas, Report on Preparation of Request from Papua New Guinea*, UNDP, Port Moresby.

determination of the success of conservation initiatives, and reporting to various international conventions (e.g. the Convention on Biodiversity, RAMSAR, and CITIES) on trends in biodiversity.

Table 1: Summary of species estimates

Taxonomic Group	Sub group	Estimated number of species described*	Number of Species Assessed	Revised Estimates from Bishop Museum's Pacific Biological Survey
Plants	Mosses	1286 1	1	
	Ferns	2414		
	Cycads	10	6	
	Conifer	110	33	
	Dicots	8278	222	
	Monocots	4367	2	
	Algae	189	0	
	Fungi	2240		
Total Plants		18894	264	
Birds		719	719	740
Mammals		271	271	276
Reptiles		227	16	341
Amphibians		266	266	302
Fish	Marine	2719	170	2800
	Fresh-water Fish	341	0	314
Total Fish		3060	170	
Invertebrates	Insecta	1644	22	150000 – 200000
	Arachnids	8	0	~1500
	Hard Corals	560	560	~600
	Molluscs (Bivalves and Gastropods)	669	7	~3000
	Crustaceans	Unknown	15	Unknown
	Hydrozoans	Unknown	6	Unknown
	Other	Unknown		Unknown
	Invertebrates			
Total Invertebrates		2881	610	
Totals		26318	2316	

23. The PNG Department of Environment and Conservation (DEC) is yet to develop a clear process for effectively implementing and integrating biodiversity and protected areas outcomes into the wider landscape, seascape and sectoral plans and strategies framework as required by the NBSAP and the Millennium Goal 7 on sustainable development. Given the complexity of PNG's social, cultural, legislative and administrative setting it would be impossible to deliver such outcomes without an effective planning and implementation framework and process. An important planning document used as a guide to the development of the NBSAP was the Medium Term Development Strategy (MTDS) 2005-2010, which has now expired and is being replaced by the Medium Term Development Plan (MTDP) 2010-2015. In addition, the government has developed the PNG Development Strategic Plan, 2010-2030 (PNG DSP). The DEC is also implementing a new Corporate Plan (2010-2013) to create new administrative structure more capable of implementing sectoral environmental planning. However, the NBSAP is yet to be reviewed and does not incorporate the new DEC Corporate Plan or either of the new national strategic plans.

24. At this time, probably the most tangible outcome from the NBSAP has been DEC's adoption of an Environmentally Sustainable Economic Growth (ESEG) strategy, which aims to link conservation planning with economic development[14]. Recently the first signs of this new conservation approach have been implemented in the Brown River catchment of the Owen Stanley Range; and, the initial signs are promising. Due to political pressure to protect the historic Kokoda Track and mitigate pollution threats to Port Moresby's water and hydro-electricity supply, the Government refused a mining lease extension that was supported by local landowners in the Owen Stanley Range in February, 2008[15]. This was the first ever refusal of a mine lease in PNG. Now with

[14] The concept of ESEG was created by PNG in 2007 as the umbrella policy framework to address issues such as climate change and REDD. ESEG has three main points: 1. renewable resources are the fundamental underpinning of the economy for most Papua New Guineans and will continue to play this role in the future; 2. PNG not irreversibly or severely damage its renewable resources during this period of rapid development of the non-renewable resource base; 3. PNG not irreversibly or severely damage its renewable resources because of their fundamental importance in providing livelihoods for most Papua New Guineans.

[15] NEC Decision # 27/2008 of 27 February 2008 directed the Secretary, DEC to develop and gazette an appropriate legal instrument Under Environment Act to provide interim protection for the Brown River Catchment.

the support of the Australian Government, PNG is trying to implement the Kokoda Initiative, which will create a conservation zone to protect the catchment and the track (and possibly surrounding areas of high biodiversity and cultural values) and compensate communities for the potential income loss from cancelled mine revenues. It is hoped that these alternative revenues will be obtained through payments for environmental services (PES) schemes for catchment maintenance, as well as through enhanced income streams from Kokoda Track tourism. This approach aims to use a business model and treat conservation as resource management issue: a pragmatic philosophy to have conservation more firmly entrenched within the economic development agenda of the country (i.e. the ESEG framework). Moreover, an analysis of many conservation failures in PNG suggest that such an approach will have much greater resonance with landowning communities, because landowners regard selling the natural resources of their lands as their best chance of development[16,17]. This reflects the fundamental truth that landowning communities generally want development, not conservation. Consequently, rural communities often view their forestlands as natural resource management regimes, rather than regarding them as potential conservation projects.

PROJECT PURPOSE

25. This project proposes to deal with community conservation as a resource management issue, and thus align national conservation needs with landowner value systems. The model will first be developed through the Kokoda Initiative in the Owen Stanley Ranges as proof-of-concept of the ESEG approach, before being expanded to demonstration sites in New Britain. The project will treat ecological or environmental knowledge as components of specific resource management regimes in deference to the realities of PNG. For the PNG context this requires a general distinction between sectoral and indigenous regimes; any resource management system that supports effective community PAs will need to link these two regimes.

26. **Sectoral resource management regimes** in PNG are defined by the national government agencies that are responsible for policies – these policies are themselves potential drivers of ecosystem change (e.g. forestry, mining and agricultural policies and standards). The national government agencies do not have a monopoly over the design or implementation of these policies (or practices which are associated with them), but other actors or stakeholders recognize the power of a national government to establish general rules about the management, conservation or exploitation of specific natural resources – even if these rules are often broken in practice.

27. An **indigenous resource management regime** is understood to operate only at a local scale or community scale, but the number of indigenous regimes greatly exceeds the number of sectoral regimes (e.g. 287 different food cropping systems have been mapped). Each indigenous regime may consist of a food-cropping system and a number of other practices, such as hunting, fishing, forest management, animal husbandry, or smallholder cash cropping practices. Clearly, the first barrier to be overcome to implement conservation planning is an agreed set of national criteria against which local indigenous resource management needs and responsibilities can be assessed vis-a-vis national conservation values and sectoral demands (see Box 1).

Box 1: Sectoral Links Required for an Effective Protected Area System

WATER: PAs serve as a vital component of the water catchment, regulation and purification processes ensuring more regular supply of better quality water and flood controls.
ENERGY: PAs serve to protect water sources needed for hydropower efficiency and also serve as major carbon sinks in relation to CO_2 emission reduction efforts.
AGRICULTURE: PAs serve as reservoirs for important wild stock of domestic crops, horticultural varieties and livestock. Buffer zones around PAs are ideal places for in-situ conservation of indigenous varieties of crops being elsewhere abandoned in favour of new high yield varieties. Water supply from PAs is vital for irrigation. Natural pest control and pollination agents dependent on PAs contribute greatly to agricultural productivity.
FISHERIES: PAs serve as vital breeding areas and species strongholds for inland, coastal and marine fisheries.
FORESTRY: PAs serve as large reserves of biodiversity and silvicultural species, buffer pest susceptibility of

[16] Filer (2004): *Hotspots and handouts: Illusions of conservation and development in Papua New Guinea*.

[17] Novotny (2010): Rain Forest Conservation in a Tribal World: Why Forest Dwellers Prefer Loggers to Conservationists. *Biotropica*, 42: 546–549.

plantations, and play an important role in combating flooding and erosion.
HEALTH AND TRADITIONAL MEDICINE PAs serve to protect and maintain wild sources and buffer zones serve as production areas for the components of Traditional Medicine and the source of other active compounds of medicinal value or potential.
TOURISM PAs act as important visitor destinations. Although revenues raised at PA gates and facilities are relatively modest as yet, the earnings of airlines, hotels and transport sectors outside the PAs are large.
CULTURE AND EDUCATION: PAs preserve cultural diversity, traditional practices and offer educational opportunities.
SCIENCE PAs serve as the natural laboratories for research and experimentation for the development of biological discovery and understanding.

BARRIERS

28. The **barriers** to developing an effective conservation system in PNG include the need to improve inclusive land-use planning, fill data gaps to develop better conservation management strategies, build links between sectoral and community management regimes, and secure sustainable funding. These barriers can be divided into three broad categories: (i) systemic and policy barriers in national governance; (ii) information and analysis gaps; and, (iii) capacity and economic development barriers at the local level. In other words, there needs to be a clearly articulated national conservation agenda based on good science, and then that agenda needs to be enshrined in policy to facilitate the implementation of sustainable conservation areas with community support.

BARRIER 1: INADEQUATE LEGAL AND POLICY STRUCTURES AND A LACK OF NATIONAL BIODIVERSITY PRIORITIES TO ALLOW THE PLANNING, ESTABLISHMENT AND FUNDING OF SUSTAINABLE PROTECTED AREAS.

29. PNG inherited a colonial conservation approach through a mix of national policies and regulations based on wildlife protection and game hunting in which protected areas were exclusionary national parks. These national parks were relatively small and established on alienated land controlled by Government, a system that is not compatible with the high degree of customary land ownership in PNG (97% of lands). Currently, protected areas (PAs) are regulated by the Fauna (Protection and Control) Act, 1966, Conservation Areas Act, 1978 and the National Parks Act, 1982. Under these Acts, there is no defined coordination process with other government planning agencies or resources sectors, so there is no strategic approach to ensure long-term sustainability of PAs. Protected areas that are established under National Parks Act and Conservation Areas Act concede land management control to the State for the protection of ecological habitats. However, the vast majority of PAs in PNG have been established under the Fauna Act as Wildlife Management Areas (WMAs); these now comprise more than 90% of PA coverage in PNG (see Table 2). In terms of policy and legislation, the DEC formally gazette WMAs under law at community request, but DEC have little or no say in WMA establishment except on the status of protected fauna (listed in the Fauna Act) in the WMA. Moreover, the DEC has no authority to establish conservation funding mechanisms or management plans.

Table 2: Distribution of Protected Areas by Type and Area

Type	No	Area (Hectares)	%
WMA	38	1,723,773	90.8
Sanctuary	5	75,271	3.9
Protected Area	2	20,245	1.1
Conservation Area	1	76,000	4.0
National Park	8	8,059	0.4
Provincial Park	1	77	0.004
Reserve	3	49	0.003
Memorial Park	3	5	0.0003
Total	61	1,897,595	100

30. The lack of strategic planning in the establishment of WMAs is reflective of the fact that many community PAs are established for local political reasons (i.e. de-facto resource boundary mapping) rather than in response to any biodiversity needs assessment or specific threats[18]. The recently revised appraisal of protected areas effectiveness in PNG (RAPPAM) reiterated that existing PAs fail to adequately protect key ecosystems; less than a third cover priority habitats and there are no clear links between socio-economic values and threat mitigation. Moreover, the ecological viability of many smaller PAs is doubtful due to the lack of landscape planning and the localized ad hoc nature of PA establishment.

31. Unlike National Parks and Conservation Areas, communities maintain full management control over land-uses within WMAs. The law does not require a management plan, so WMA rules are generally extensions of traditional rules insofar as they focus largely on hunting, gardening and traditional exclusion zones. In theory, conservation that is driven and established by the community is good; in reality there is little institutional support to establish and develop management plans (indeed most WMAs do not have management plans). Unfortunately, the lack of management and the generally low capacity of WMA Committees means that the conservation benefits are highly questionable, leading many practitioners to query whether WMAs actually constitute meaningful protected areas.

32. The PNG Government has very little incentive or capacity to support WMAs in the current climate. Although DEC is the responsible governing authority for WMAs, these areas are community-governed, thus DEC has no effective legislative power over them. Moreover, given the paucity of robust biodiversity data, and the lack of agreed national biodiversity priority areas, it is difficult for DEC to justify support for WMAs on the grounds of strategic conservation needs. It is important to note that because WMAs are established under the Fauna Act, there is no specific mandate for flora and/or habitat protection. In fact, the Act enables WMA committees to make rules for the 'protection, propagation, encouragement, management, control, harvesting and destruction of fauna'; thus, WMAs may effectively be managed to harvest and destroy fauna if so deemed by the Committee and the Minister.

33. Of the existing legislation, the Conservation Areas Act looks most capable of delivering more effective conservation areas. The Conservation Areas Act is considered to be a compromise between the National Parks and Fauna Acts, it provides for establishment and development of 'conservation areas' of both land (natural) and cultural sites and is also consistent with the requirements for the World Heritage areas. It is the only national conservation-based law that provides for integrated conservation and development and therefore requires a management plan if 'development' is to take place. However, this Act still lacks a strategic national planning overview, and, moreover, implementation of this Act has been hampered by a lack of funding and capacity.

34. The Conservation Areas Act provides for the establishment of the five-member National Conservation Council (NCC) which provides advice to the Minister on proposed Conservation Areas (CA) on the biodiversity conservation and development interests. But, historically, the NCC has been dysfunctional and difficult to convene. So far – despite the fact the law has been in existence for over 30 years – only one CA has been established (the Yupno-Uruwa-Som [Yus] CA in the Morobe Province gazetted in 2009). Moreover, questions have been raised about the viability of this CA because it was gazetted at the behest of an international conservation NGO, without a management plan or an identified sustainable funding mechanism. In summary, even the Conservation Areas Act has several barriers that must be overcome: (i) maintaining an efficient and effective NCC; (ii); clarifying the need for funded conservation management plans to become a prerequisite for CA establishment; and, (iii) ensuring CAs are part of an integrated national land-use planning mechanisms.

35. The lack of sustainable funding for CAs is not likely to be solved by a single approach, but by a combination of sources. The failure of earlier integrated conservation and development (ICAD) projects (as described below) and concerns about the long-term viability of NGO-sponsored CAs suggests that conservation must be supported by a range of partners such as resource-dependent industry (agriculture, tourism, mining, etc), government and other actors including external donors. There is a need to develop viable payment for environmental service (PES) schemes, which can provide long-term support for community conservation. The early scoping work on PES schemes for water catchment conservation in Kokoda looks promising; however, for PES schemes to work it is clear the government must develop legislation and administrative mechanisms to link PES funding directly

[18] WWF and DEC (2002): *Review of the Management and Status of Protected Areas and Action Plan. Papua New Guinea Protected Areas Programme*, World Wide Fund for Nature and Department of Environment and Conservation (Papua New Guinea), Port Moresby.

with conservation funding. For these reasons, PNG must trial pilot projects in a phased approach to develop PES schemes as part of a better conservation planning system.

36. If urgent habitat protection is required, environmental values can be protected through legal instruments available to the DEC under the Environment Act (2000). For example, when the Kokoda Track was threatened by mining in 2008, the Brown River catchment was protected by an Interim Policy under the Act. However, the Interim Policy is only valid for twelve months and requires ongoing extension by the Government. During the period of operation of the Interim Policy, alternative and longer term institutional and legal arrangements need to be evaluated and implemented if required. The fact that the Government was forced into using this interim measure for Kokoda demonstrates the ineffectualness of current PA legislation and further highlights the necessity of consolidating environmental planning and protected areas policy in PNG.

<u>Barrier 1.1</u>: Ineffective coordination among sectoral institutions for land-use planning to incorporate Protected Areas

37. The PA system is not directly connected with the government land-use planning or development strategies at national, provincial and local levels, so large development projects usually take precedence over the interests of PAs. Economic development strategies have been implemented largely on a sector-by-sector basis (e.g. mining, forestry, agriculture and fisheries), with limited overall coordination so information flows and coordination amongst sectoral agencies has been limited. The poor communication between government agencies together will a lack of capacity has resulted in conservation conflicts and inconsistencies; for instance, PAs gazettals have overlapped areas for which mining or forestry concessions have been granted, or vice versa (e.g. Hunstein WMA and the WMAs declared at Bosavi in 2008). These problems have led to DEC to suspend all WMA gazettals until a more effective, better resourced system is identified and implemented. The communications problems have arisen for several reasons:

    i. a lack of policy clarity in terms of the role of the DEC and environmental permitting requirements for development on PAs;
    ii. the lack of agreed national biodiversity priorities and minimum protection criteria;
    iii. the lack of a centralized official source of up-to-date land-use planning information and development maps;
    iv. the lack of any objective high-quality spatial data of biodiversity and species distributions;
    v. the lack of government buy-in to PA creation (i.e. the process has been driven by interest groups and/or external NGOs who often walk communities through the gazettal without due diligence as to the claims of other agencies);
    vi. political pressure on DEC to gazette PAs for international appearances (such as the CBD); and,
    vii. domestic pressure on DEC to satisfy landowners who want boundary demarcations through WMA establishment (though possibly not for strict conservation reasons).

38. There is an urgent need to coordinate the planning process with DEC and agencies such as Department of Agriculture and Livestock (DAL), Mineral Resources Authority (MRA), and PNG Forest Authority (PNGFA) to ensure a more formalized and rigorous assessment of clearing leases. Large developments require environmental plans (under the Environment Act), but as things stand, the majority of deforestation in PNG will potentially occur without any effective interagency planning and little or no assessment of ecological or economic viability. Over recent years about two million hectares of land across lowland provinces have been granted as Special Purpose Agricultural/Business Leases under the Land Act. Currently, leases have been granted for 2.4 million ha of forestlands; this is significantly higher than the area of active forestry leases. Many (if not all) of the 50 known schemes have apparently lacked due process, with landowners never granting their 'informed consent' for the State to lease their land and subsequently reallocate it to various named (largely overseas-controlled) interests. In many cases these fast-tracked, supposed 'agricultural', or misnamed 'agro-forestry' projects are a front for operators merely pursuing the timber, sidestepping the 32 steps (including competitive tendering) required under the Forestry Act[19]. Therefore, there is strong suspicion of these special purpose leases, especially

[19] For example, in one case in Collingwood Bay in 1995, a small group had signed for a 38,000 ha lease on behalf of all landowners, without the majority (including most landowner leaders) even aware of the transaction, let alone granting approval. This Collingwood Bay scam was finally thrown out in Court in 2001. Some involved may also be interested in further agricultural development, but past experience has found operators departing hastily (or declaring bankruptcy) once the logs have gone and major expenditure required, with supposed developers

with many areas (e.g. karst limestone near Pomio, or around Mekeo in New Britain) largely unsuitable for extensive oil palm or other crops.

39. The prevalence of customary tenure makes it difficult or impossible to establish buffer zones around PAs of the kind which have been advocated by proponents in other parts of the world. Therefore, the trade-off between conservation and development cannot simply be construed as a sort of land-use planning exercise, with or without local participation, but has to be adapted to the social realities of the Melanesian landscape. The absence of mandatory social mapping standards and stakeholder sharing agreements has led to ongoing disputation and compensation claims from contested landownership and land-use claims in some WMAs.

Barrier 1.2: Ineffective National Protected Areas (PA) Policy

40. As outlined earlier, PNG's existing network of PAs has been established by three distinct pieces of legislation: the Fauna (Protection and Control) Act of 1966 (amended in 1974 and 1976), the Conservation Areas Act of 1978 (amended in 1992), and the National Parks Act of 1982 (which replaced an earlier colonial ordinance). All three acts are administered by the DEC and there is considerable overlap and inconsistency between these three Acts. Longstanding plans to combine them into a single piece of legislation relating to the declaration and management of PAs have not so far been implemented[20]. There is also further overlap in regulations with the three other Acts administered by DEC, (Environment Act, International [Fauna and Flora] Trade Act, and Crocodile Trade [Protection] Act[21]) that regulate for protection of and export of species and environmental services. Therefore, there is a further need to consolidate all these regulations under a common Act and ensure consistency in the laws governing the administration of protected areas and the management of the species and environmental values that they contain.

41. Areas protected under the National Parks Act must by definition be areas of public land, which means that they must have been alienated from their customary owners by mutual agreement or compulsory acquisition. Most of these areas were alienated during the colonial period; only two have been alienated after the present act was passed in 1982 in order to transfer its administration from the old National Parks Board to the DEC. The combined area of existing parks and reserves is less than 10,000 ha, much of this area has no forest cover, and much of it is subject to dispute or claims for compensation by the traditional owners.

42. The original purpose of the Fauna (Protection and Control) Act was to regulate local hunting practices after the Australian colonial administration first allowed 'natives' to own shotguns in the 1960s. The Act was amended around the time of Independence (i.e. 1975) to reflect the constitutional recognition of 'custom' in the management of local affairs, enabling the Minister to declare an area to be a 'Wildlife Management Area', a 'Wildlife Sanctuary', or a 'Protected Area' for the purpose of conserving native fauna. WMAs have since been the main form of protected area declared under the Act. Section 15, which relates to the declaration of Wildlife Management Areas (WMAs), requires the Minister to 'consult, as far as is practicable, with the owners of the land within the area to be declared', and also with the relevant local-level government (LLG), although his declaration is not invalidated if the LLG is not consulted. A WMA should have a Management Committee which makes rules for the 'propagation, protection, encouragement and management' of different species of birds and animals, can impose fees or fines on people who harvest these species, and can appoint agents to issue licenses or collect the fees. There is nothing in the Act which prevents the State from granting a mining tenement or a logging license over a WMA, nor anything to prevent the customary owners from choosing to 'develop' the land or to have it 'developed' by a third party. Many of the smaller WMAs, especially those with an area of less than 1,000 ha, are of dubious long-term ecological viability (see Barrier 1.3) and have been established at the request of local landowners who are more interested in protecting their territory from invasion by other human beings than protecting the birds and animals who live within its boundaries[22].

---

establishing inadequate nurseries to plant areas for agricultural crops.

[20] Whimp (1995): *Legislative Review Report 5: Conservation. Port Moresby*: DEC Strengthening Project.

[21] The *Environment Act, 2000* provides the administrative mechanism for environmental impact assessment and evaluation of activities regulating impacts on the receiving environment through an established environmental approval and permitting system; *International (Fauna and Flora) Trade Act (1978)* for the control of exportation and importation and introduction of flora and fauna from the sea, whether dead, alive, their by-products, parts or derivatives.; *Crocodile Trade (Protection) Act (1978)* for the management and control of crocodile exports and other related activities.

[22] King and Hughes (1998): Protected Areas in Papua New Guinea. In L. Zimmer- Tamakoshi (ed.), *Modern Papua New Guinea*. Kirksville (MO):

43. The Conservation Areas Act provides for the establishment of a National Conservation Council (NCC) to advise the Minister for Environment and Conservation on the creation of a national network of Conservation Areas (CA) managed in association with local landowners and provincial and local-level governments. Section 12 of the Act allows any person or organization to propose the establishment of a CA. Proposals are considered by Minister, who in turn can then make a recommendation the National Executive Council for the CA to be authorized[23]. However, the criteria for recommending gazettal are not clearly codified (the NCC is supposed to advise the Minister on these criteria), and the Act only requires proponents to provide a description of the local population, local land tenure arrangements and land use practices, local 'features of special significance', and 'any other factors contributing to the need for conservation of the area'. If a CA is gazetted, then Part V of the Act compels the Minister to appoint a Conservation Area Management Committee (CAMC) comprising representatives of the local landowners and the two lower levels of government. The CAMC must produce a management plan including rules for the 'protection, development, land use activities, management and control' of the area in question. The Minister himself can then 'make rules for the protection, development, land use activities, management and control of the conservation area' after consulting with the CAMC, the NCC, and 'as far as practicable the owners of the land within the CA'. The area is then protected against any change to existing land use practices unless these are either allowed in the management plan or approved by the Minister. It is not clear whether the Minister for Mining or the Minister for Petroleum and Energy would be obliged to seek the approval of the Minister for Environment and Conservation before granting an exploration or prospecting license over part of a CA.

44. The Environment Act does not deal with the establishment of PAs per se. However, Section 35 of the Act allows for interim policy to stop development and effectively declare interim protected areas for up to 12 months; this is the mechanism by which the Brown River catchments and the Kokoda Track have been protected for the Kokoda Initiative. Moreover, under the Environment Act an Environment Council (EC) can recommend wide ranging changes to environment policy and conservation needs, in addition the Act allows provincial governments to pass 'provincial environmental laws' consistent with national legislation. Because of this, there is considerable scope for overlap for policy advice and conservation planning from the EC under the Environment Act and the NCC under the Conservation Areas Act (see Table 3).

Table 3: Overlapping responsibilities of high-level committees involved in conservation planning and environmental protection

Group	Legal Authority	Affiliation/ qualifications	Role	Reports to
Environment Council	Environment Act	DEC (Chair) Experts in: environmental science, biodiversity, impact assessment, resource management & economics, environmental policy and law, etc.	Advise on the administration and interpretation of the Environment Act, including; protection of the environment, recommended policy changes, environmental impacts and conservation needs	Minister
Environment Council Selection Committee	Environment Act	Heads of: Department of Attorney-General; DEC; PNG Council of Churches; Business Council of PNG; National Alliance of NGOs	Select expert candidates for the Environment Council	NEC
National Taskforce	Environment Act (Interim Policy)	Key Govt. Agencies: DEC (Chair); Depts. National Planning and Monitoring; Treasury; Finance; Provincial and Local Level Government; Lands and Physical Planning; Mineral Resources Authority.	Protection of the Brown River Catchment and implementation of the Kokoda Initiative	NEC

Thomas Jefferson University Press.

[23] It took more than 30 years for PNG's first CA to be gazetted under the Conservation Areas Act in 2009. The main reason for the delay was the inability of the DEC to establish the NCC and provide the resources necessary for its operation.

		Representatives of industry service providers and buyers		
National Conservation Council	Conservation Areas Act	Experts in conservation science	Advise on all matters relating to Conservation Areas e.g. appropriate conservation criteria, possible environmental effects of developments, recommendations for the establishment of conservation areas	Minister
Environment Consultative Group	Environment Act	Experts in environmental & conservation science	Advise on the making of Environment Policies and the assessment of environmental impact statements	Environment Council, DEC

45. Section 44 of the Organic Law on Provincial Governments and Local-Level Governments (1995) allows local-level governments to make their own bye-laws about the 'local environment', subject to the approval of the Minister for Inter-Governmental Affairs. One international conservation organization relied on this provision in helping the Almami LLG in Madang Province to consult with local landowners and then promulgate a bye-law for the protection a forested area in the Adelbert mountain range[24]. In other cases conservation NGOs may simply enter into a common-law contract to provide goods and services to a corporate body representing a group of customary landowners in return for a promise to set aside land for conservation purposes. However, there is a risk that dissident landowners might later seek to overturn such an agreement if it could be construed as a 'restraint of trade'. Furthermore, an international NGO, aid agency or foreign investor would have difficulty with such an arrangement because the National Constitution and the Land Act prohibit anyone except an automatic citizen or the State from entering into a contract with customary landowners which creates an 'interest in the land'[25].

46. Powers under the Forestry Act enable the PNG Forest Authority (PNGFA) to acquire rights over forest resources, notably under a Forest Management Agreement (FMA). This includes access to the timber contained therein, but also for certain other forest resource management purposes, including conservation. Through its Forest Plans, the PNGFA may aside areas for protection and 'where in demand' conserve areas that have been identified as having value. However, PNGFA has little capacity to enforce these regulations and for several years PNGFA has continued to issue FMAs despite the absence of a valid overriding National Forest Plan, creating considerable controversy; thus FMAs essentially function to facilitate commercial logging rather than implement any genuine sustainable forest management.

Barrier 1.3: Inadequate Legal Provision for the Ecological and Financial Viability of Protected Areas

47. Papua New Guinea's international conservation targets have not been matched by effective implementation on-the-ground. When the PNG Government ratified the Convention on Biological Diversity in 1993, the National Executive Council directed that 10% of the country's land and sea area should be allocated to PAs. Only about 4% is currently protected under legislation administered by the DEC, while a smaller area is supposedly protected under Forest Management Agreements[26]. Not only has PNG failed to achieve coverage targets, but the PAs that have been established are of dubious ecological value and viability. Of the 38 WMAs that now account for more than 90% of PNG's official PAs, most of them are very small in size: 50% are smaller 1,000 ha, only

[24] Van Helden (2005). *Lessons Learned in Community-Based Conservation in Papua New Guinea.* Unpublished report to TNC and WWF.

[25] In the Lake Murray area of Western Province, a consortium of local and international NGOs supported a process of land group incorporation that was accompanied by development of a land use management plan, and then an agreement with an Australian timber importer to market the products of an eco-forestry project. The problem here lay not with the validity of the agreement but with the economic viability of the project. In another case in Oro Province, the declaration of a WMA was accompanied by a separate deed of agreement between a local NGO and 53 local clans which bound the clan members not to negotiate any form of large-scale resource development in the area.

[26] Duguman (ed.) (2006). *Assessment of the Effectiveness of Management in Protected Areas in Papua New Guinea.* Port Moresby: WWF, DEC, PNGFA, RCF, TNC and VDT.

20% are larger than 50,000 ha, and none cover full catchment areas (Table 4). Two of the large WMAs – Tonda (610,000 ha) and Maza (184,000 ha) in the Transfly region of Western Province – were established with the support of government officers in the 1970s and are largely dysfunctional. The other three – Crater Mountain (270,000 ha) on the borders of Eastern Highlands and Province, Kamiali (65,500 ha) in Morobe Province, and Hunstein Range (220,000 ha) in East Sepik Province – were established more recently with the support of international and national NGOs.

Table 4: Protected Areas in PNG under 1,000 ha and over 10,000 ha.

LARGEST Protected Areas >10,000 hectares	Area (Ha)	SMALLEST Protected Areas <1000 hectares	Area (Ha)
Tonda WMA	610,000	Mt Wilhelm National Reserve	817
Crater Mountain WMA	270,000	Sawataetae WMA	700
Hunstein Range WMA	220,000	Balek Wildlife Sanctuary	470
Maza WMA	184,230	Hombareta WMA	130
Sulamesi WMA	86,451	Loroko National Park	100
YUS CA	76,000	Mt Gahavisuka Pro. Park	77
Kamiali WMA	65,541	Baiyer River Sanctuary	64
Crown Island Wildlife Sanctuary	58,969	Mt Susu National Park	49
Pirung WMA	43,200	Moitaka Wildlife Sanctuary	44
Ranba WMA + Sanctuary	41,922	Baniara Island WMA	37
Uma WMA	36,363	Namanatabu Reserve	27
Lake Kutubu WMA	24,100	Nuraseng WMA	22
Oi Mada Wara WMA	22,840	Paga Hill Nat. Park Scenic R	17
Lihir Island PA	20,208	Nanuk Island Reserve	12
Libano WMA	29,172	Talele Is. Nat. Park Reserve	12
Bagiai WMA	13,760	Kokoda Historical Reserve	10
Siwi-Utame WMA	12,540	Cape Wom Memorial Park	2
Me'ha WMA	10,770	Wewak Peace Memorial Park	2
Total	**1,826,066**	Kokoda Memorial Park	1
		Total	**2,595**

48. The disconnect between PNG's conservation aspirations and reality has been brought about by some over-ambitious target setting compounded by poor policy and a lack of funding support for conservation management. For the establishment of PAs, PNG has failed to legislate for (or even establish) scientifically-based minimum benchmarks for biodiversity significance and ecological viability. Although the NCC is supposed to advise the Minister on criteria for establishing a CA, there is no legal necessity for this to be done and, as stated, no criteria currently exist (see Barrier 1.4). Similarly, there is no necessity to submit a costed management plan for any PA, and even if money is spent to establish PAs, there is no legislative necessity to guarantee on-going financial support for its maintenance. There is a long history in PNG of NGOs establishing WMAs at considerable cost, but failing to provide on-going support (e.g. the Hunstein Ranges and Crater Mountain WMAs)[27]. A similar fear is held for the Yus CA in Morobe Province, which was gazetted in January 2009, after 12 years of work by a consortium of foreign conservation organizations at a cost of several million US dollars on the local 'Tree Kangaroo Conservation Project'[28]. There are already concerns that ongoing support of this CA was based on unrealistic expectations of carbon funding and that the external drive and funding to promote the project has disenfranchised local stakeholders. Just as the conservation of this area was justified primarily by reference to a single 'flagship' species of tree kangaroo, another CA of approximately 90,000 ha is now being proposed along a stretch of the Torricelli mountain range in West Sepik Province by the 'Tenkile Conservation Alliance' (established in 2001), which aims to protect two more flagship species of the same genus. This area overlaps with a number of FMAs, so if this potential CA is to be realized, it will require a high degree of inter-agency

[27] Faciliated by WWF (World Wild Fund for Nature) and WCS (Wildlife Conservation Society), respectively.

[28] Yus CA covers an area of 76,000 ha which includes blocks of customary land belonging to roughly 10,000 inhabitants of 35 different villages within that LLG area, this project has been supported by the Woodland Park Zoo (Seattle, USA) and Conservation International (CI).

cooperation, again stressing the need for a more structured, science-based PA system supported by appropriate legislation and long-term sustainable funding options.

Barrier 1.4: Lack of Agreed National Conservation Criteria

49. Although many policies in PNG refer to 'sustainable management' and the need to maintain biodiversity, the country lacks an agreed scientifically-robust definition as to what constitutes the minimum criteria to ensure that PAs will be ecologically sustainable. In other words, PNG has no national standards to define a Comprehensive, Adequate, Representative and Resilient (CARR) PA network that meets the following key criteria:
    i. Comprehensiveness: includes the full range of communities recognized by an agreed national classification at appropriate hierarchical level.
    ii. Adequacy: the maintenance of ecological viability and integrity of populations, species and communities; protected areas should be large enough to sustain the viability, quality and integrity of populations (species).
    iii. Representativeness: those sample areas that are selected for inclusion in reserves should reasonably reflect the biotic diversity of the communities.
    iv. Resilience: the areas sampled consider the impacts of climate change and likely economic threats.
50. To implement a meaningful and feasible PA system, it will be essential to develop CARR standards acceptable across all sectors (e.g. Government, industry and civil society), Presently, a range of tools and definitions are used by different stakeholders to determine ecological impacts and assess conservation needs; these tools include the PNG High Conservation Value Forest (HCVF) Toolkit, ProForest Landscape Analysis Sourcebook, RSPO land-use criteria, PNG Logging Code of Practice, and a range of earlier conservation needs assessments.
51. Specific protection issues that will need to be addressed include the viability of outliers and small forest patches (i.e. total areas of generally less than 1000 ha or patch sizes of generally less than 100 ha, where such patches do not aggregate to significant areas), feasibility of protecting rare and threatened species given the rights accorded to communities under traditional law, and recommendations of the treatment of data deficient species. These CARR criteria are also required to provide clear direction to all actors working on biodiversity conservation to better align national conservation efforts and standardize assessment of potential biodiversity offset and payment for ecosystem services projects. The recent PoWPA analysis used the Comprehensive, Adequate and Representative (CAR) national reserve system for forests in Australia[29] as a starting point for the development of national criteria for protected areas in PNG. These criteria were adapted to the PNG context by setting 1975 forest cover values as the historic benchmark (i.e. pre-industrial logging) using the early air photos available for the whole country. However, these criteria still need to be refined for use in landscape planning processes in PNG and incorporated into national planning standards.
52. To address the principle of representativeness nationally, it is necessary to divide PNG into ecologically appropriate units within which biodiversity is to be represented. For the first time the DEC is proposing that ecoregions become the reporting unit for assessing the status of species and ecosystems and their protection in a national PA system. The existing ecoregions will continue to be refined as more detailed information on ecosystems or other base layers comes to hand. This approach was initiated during the recent PoWPA analysis in which the DEC with The Nature Conservancy (TNC) delineated more accurate boundaries for the ecoregions by matching them with Land System boundaries in the PNGRIS data and then created larger assessment units by: (a) aggregating adjacent archipelagos; (b) subsuming coastal units and small, upland ecoregions within their surrounding lowland ecoregions; (c) and aggregating the southern plains, wetlands and savannah ecoregions whose boundaries could not be consistently delineated (Figure 1).

[29] Commonwealth of Australia (1997): *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*.

Figure 1: Interim Stratification of Ecosystems

Barrier 1.5: Inadequate Policy and Legislation to support Payment for Environmental Services (PES) Schemes

53. Ecosystem services are the multiple benefits that human societies and individuals receive from the environment, and include water purification and flood control by forests, carbon sequestration, pollination, prevention of soil erosion and sedimentation, and more intangible benefits such as aesthetic beauty and spiritual well-being. Linking ecosystem functions with human livelihoods provides a basis for including conservation and environmentally sensitive management in land-use decisions. The perception of ecosystems as providers of essential goods and services for the support of human well-being lies at the heart of the Millennium Ecosystem Assessment[30] – the concept of payment for environmental services (PES) has been embraced by the PNG Government as a possible mechanism to fund conservation.

54. Despite the PNG Government's interest in possible PES funding, there are currently no institutions identified to monitor and enforce the terms of the PES contracts and/or distribute the benefits generated by PES schemes in PNG. Even should PES schemes overcome the technical challenges (outlined below in Barrier 2.2), PES may ultimately be undermined by the failure to distribute benefits widely, leading to societal conflicts over land use[31,32]. Before PES can be implemented in PNG it will be necessary to identify under which policy it is best implemented, whether new legislation will be necessary or whether existing systems can be used. The urgent need to clarify policy and agency responsibilities for environmental payments has been highlighted by ongoing legal confusion surrounding early Reduced Emission from Deforestation and Degradation (REDD) efforts in PNG[33]. A DEC assessment on REDD payments suggests that it may be necessary to implement new systems and legislation[34]. Clearly, there will need to be considerable clarification on the most feasible way to implement and support PES in PNG. These decisions will be closely linked to the other policy analysis and the cross-agency coordination that must be developed for the land-use planning approach envisaged under ESEG as part of this project.

[30] MEA, 2005. Ecosystems & Human Well-being: Synthesis. Millennium Ecosystem Assessment and Island Press, Washington, DC.

[31] Pagiola et al. (2005): Can payments for environmental services help reduce poverty? An exploration of the issues and the evidence to date from Latin America. World Development 33, 237–53.

[32] Ghazoul et al. (2009): Landscape labelling: A concept for next-generation payment for ecosystem service schemes. *Forest Ecology and Management*, 258: 1889–95.

[33] Melick, D. (2010). Credibility of REDD and experiences from Papua New Guinea. *Conservation Biology*, 24:359-61.

[34] Filer, C. (2009). *Land rights and benefit sharing arrangements for REDD projects in Papua New Guinea*. Draft report to the PNG Dept. of Environment and Conservation.

Barrier 1.6: Inadequate Institutional Staff Capacity to Implement National Conservation Strategies Including Protected Areas Management

55. The DEC is in the process of re-aligning its corporate plan and structure to deliver on the ESEG, and the national development strategies to mainstream environmental assessments and PAs. This need for re-alignment is particularly pressing with the expansion of large-scale national development projects and increasing global demands for improved environmental governance demanded by standards such as the Equator Principles, RSPO and the Clean Development Mechanisms (CDM). With these changes, the DEC needs to anchor down and consolidate its role as the environmental focal point and strengthen its capacity to coordinate, monitor, and implement convention related strategies. The 2009 National Capacity Self-Assessment Project has found this to be a weak area in DEC that needs improvement.

56. Conservation programmes and projects have been financed and implemented on an adhoc basis that target areas for interventions if and when funding opportunities arise. Utilization of GEF funds by PNG has been very inefficient resulting in long delays in implementation in which project outputs are generally not achieved in a timely manner. PNG's conservation planners need to improve management capacity and administrative skills to centralize and mainstream conservation planning. Key to ensuring long-term capacity development is that, rather than focusing limited Government staff on developing and delivering conservation tools while NGOs and researchers continue to collect data and work in isolation (which has been the approach of many previous projects), the DEC needs to improve on its portfolio of projects through improved project administration and management arrangements in collaboration with the implementing agencies, NGOs and service delivery agents. In particular DEC requires strengthened capacities in public administration, policy coordination, project management, and procurement and contractor management.

Barrier 1.7: Failure of National Strategic Planning Policies to Address Population Pressures on Land-Degradation

57. The high rate of population growth (2.6% annually) in PNG is placing ever-increasing demands on the land and marine holdings of clans, which are fixed and largely impossible to expand. This results in continuous pressure to open new areas to subsistence farming (gardening) as well as broader pressure to 'cash in' landholdings through timber extraction or plantation development. All analyses of forest degradation show that increasing population pressure is a critical issue, as is the massive increase in young people. However – despite numerous claims of sustainable development – population concerns and demographic scenarios are never considered in national policies. In fact, critical issues such as family planning, urban consolidation or linked education programmes are not even mentioned in PNG's strategic national development plan[35].

BARRIER 2: DEFICIENT BIODIVERSITY INFORMATION AND DATA ANALYSIS TO FACILITATE CONSERVATION NEEDS PLANNING AND DEVELOP BASELINE FOR ENVIRONMENTAL SERVICES.

58. A good deal of biodiversity data has been collected by various organizations over the last few decades, but PNG is yet to develop a species or ecosystem database to determine conservation status and monitor trends of species and ecosystems. Conservation planning in PNG is largely dependent upon datasets developed during the 1970s and early 1990s; the derived maps are now perceived as being somewhat outdated and low resolution (1:250,000 – 1:500,000) and are not developed at an appropriate scale for the high resolution land-use planning needed for biodiversity analysis. Furthermore, there is no standardized method of species data collection or storage to facilitate a systematic interpretation of species ranges. Acquiring better data and developing better data management systems is vital, both to underpin the development of better conservation planning, and also to facilitate the assessment of baselines for biodiversity values and ecosystem services.

Barrier 2.1: Inadequate data for Accurate National Conservation Needs Planning

59. The database, most commonly used to inform agricultural and other land-use development is the PNG Resource Information System (PNGRIS), which derives from work of the Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) in the 1970s. The PNGRIS map divides the country into 4,566

[35] The PNG Development Strategic Plan, 2010-2030 (PNG DSP).

'Resource Mapping Units' distinguished by landform, rock type, altitude, relief, inundation, and mean annual rainfall. The database has been expanded to include information on a number of other variables, including land use and human population, enabling planners to map the distribution of the population between areas of 'land in use' in different altitudinal zones. However, these data on the distribution of populations contains known inaccuracies. The PNGRIS also includes a map of 'Agricultural Land Use' which is based on the analysis of aerial photographs taken in the late colonial period. The Australian National University (ANU) undertook a detailed field survey to produce another map which distinguishes 287 of these food-cropping systems[36]. This map inhabits a database which contains information on a number of other variables, such as estimates of cash income or ease of access to government services, to show relationships between these variables and the different food-cropping systems[37].

60. Another database known as the Forest Inventory Mapping System (FIMS) uses the same sequence of aerial photographs from the 1970s to divide the country into 'Forest Mapping Units' and allocate each of these units to one of 59 vegetation types, of which 36 are classified as forest types[38]. A combination of satellite imagery with rapid air and ground surveys undertaken in 1996 was then used to map the extent of change in the extent and composition of forest cover in each of these units since 1975. The most recent mapping was the State of the Forest Report in 2008. While presenting a useful baseline, this analysis uses existing low resolution data and thus suffers from the low accuracy of the layers informing the original land-use categories, (i.e. the FIMS inventory) and Landsat for the later data, with the most recent imagery from 2002. For this reason, the interpretation of the results have been open to some debate, and as they only give low resolution information of gross land cover change over the last few decades they are of limited value in assessing biodiversity values.

61. A list of 'priority forest areas' was constructed during the initiation of PNG's version of the Tropical Forest Action Plan in 1990. The mapping of these values at a national scale was first attempted through a 'Conservation Needs Assessment' (CNA) implemented by the Biodiversity Support Program at the request of the national government[39]. Three maps were produced: one showing 'biologically important' terrestrial and wetland areas; a second showing 'marine priority areas' and 'critical watersheds'; and, a third showing 'major unknown areas'. These maps led to a more sophisticated attempt to model the distribution of PNG's biodiversity values by scientists at the CSIRO and the ANU. In contrast to the PNGRIS database, this is a raster-based geographical information system which allows for the matching of environmental and biological information at different scales. Information about the physical environment was mapped onto a digital elevation model, which was then used to predict the distribution of selected plant and animal taxa from knowledge of the sites where specimens had previously been collected. The point of this exercise was to determine a flexible scheme of 'trade-offs' between the spatial distribution of biodiversity values, the temporal change in patterns of land use which threaten the conservation of these values (especially commercial logging), and the policy choice of which areas to conserve in order to maximize the conservation of biodiversity values within a fixed proportion (e.g. 10%) of the country's total surface area[40, 41].

62. The third and final stream of maps of relevance to this information barrier is the one which culminated in the publication of an atlas of Pacific languages in 1981[42]. The maps covering different parts of PNG, which make up roughly half of the maps in the whole atlas, show that it has more than 750 languages. The most problematic feature of these maps is the existence of numerous grey areas between the territorial boundaries of neighboring

---

[36] Allen et al. (1993-97): *Agricultural Systems of Papua New Guinea* (20 working papers). Canberra: Australian National University, Research School of Pacific and Asian Studies, Department of Human
Geography. Series revised and reprinted 2002.

[37] Hanson et al. (2001). *Papua New Guinea Rural Development Handbook*. Canberra: Australian National University, Research School of Pacific and Asian Studies, Department of Human Geography.

[38] Hammermaster and Saunders (1995). *Forest Resources and Vegetation Mapping of Papua New Guinea*. Canberra: Australian Agency for International Development, PNG Resource Information System (Publication 4).

[39] Alcorn and Beehler (eds), (1993): *Papua New Guinea Conservation Needs Assessment* (2 volumes). Washington (DC): Biodiversity Support Program.

[40] Nix et al. (2000): *The BioRap Toolbox: A National Study of Biodiversity Assessment and Planning for Papua New Guinea*. Canberra: CSIRO Press.

[41] Faith, et al. (2001). The BioRap Biodiversity Assessment and Planning Study for Papua New Guinea. *Pacific Conservation Biology* 6: 279-288.

[42] Wurm and Hattori (eds) (1981). *Language Atlas of the Pacific*. Canberra: Australian Academy of the Humanities in association with the Japan Academy.

language groups. One of the main reasons why the atlas has not been updated and digitized is because of the danger that a map of vernacular languages, with or without the grey areas, can easily be read as if it were a substitute for the missing national map of traditional territorial boundaries between local communities.

63. All of the maps in these three bodies of scientific and spatial knowledge have been produced at scales of between 1:100,000 and 1:1,000,000 – the standard scale, which is the PNGRIS scale, is 1:500,000. There are maps of equivalent sophistication at considerably smaller scales, most of which have been produced at the expense of major mining and petroleum companies engaged in the exploration. Some of these local maps show the territorial boundaries of customary group domains, and thus fill the some of the gaps at the national level. However, these maps have not been placed in the public arena because they do not count as part of any legal process of registration[43]. Since access to these 'project' maps are generally restricted by commercial or political secrecy, no systematic effort has been made to link them to the national maps which show the spatial distribution of natural resources, biodiversity values, indigenous food-cropping systems, and vernacular languages.

64. Conservation planners can refer to all these national maps when deciding which parts of the customary landscape ought to be included in a national network of PAs, but in terms of refining and implementing national biodiversity priorities there has been no great advance since the Conservation Needs Assessment (CNA) in 1993[44]. Key recommendations from the CNA included:

    i. establish a Natural Resources Centre;
    ii. implement a National Environment and Conservation Plan;
    iii. distribute the CNA Biodiversity Maps as widely as possible to scientists, conservation groups, NGOs, and local landowners' groups;
    iv. reform existing legislation to strengthen environmental management and customary tenure systems;
    v. develop participatory conservation & development models appropriate to PNG culture and conditions;
    vi. support research focused on priority sites within PNG, in collaboration with local scientists and landowners;
    vii. strengthen relationships between government, NGOs, and local landowners in PNG;
    viii. consider establishing an independent environmental trust fund to support conservation activity in PNG; and,
    ix. a social legend should be placed on the CNA biodiversity map so all potential users recognize the need to consult landowning clans before taking action based on the map's information.

65. Virtually all of these CNA recommendations remain unfulfilled. Indeed, rather than refining the conservation needs, many conservation proponents involved in the CNA have continued to project unrealistic conservation expectations for PNG in the global marketplace. If one was to give adequate consideration for all the conservation priorities identified by major conservation NGOs (i.e. Conservation International's 'Biodiversity Hotspots', the Nature Conservancy's 'Key Biodiversity Areas', and WWF's 'Ecoregions') it would require protection of virtually the entire country. Clearly, there is an urgent need for a pragmatic analysis of national priority areas for biodiversity protection and these should inform the establishment and support of PAs (see Barrier 1.4).

66. A first step towards revising a more realistic set of national biodiversity targets and approach was taken in the recent Programme of Work on Protected Areas (PoWPA), which aims to update the CSIRO conservation needs approach to analyze available information on biodiversity in PNG[45]. However, the initial PoWPA gap analysis highlighted the limitations imposed by the low resolution of spatial data and the outstanding need to collate and incorporate diffuse species information from a range of scientific reports undertaken by academics, government and industry. Moreover, there is a clear need for bio-surveying key parts of the country, particularly for botanical data, which has so far been largely neglected. The PoWPA gap analysis further highlighted the need for a comprehensive spatial system to enable updated biodiversity and critical habitat modeling and mapping for

[43] Filer (1999): The Dialectics of Negation and Negotiation in the Anthropology of Mineral Resource Development in Papua New Guinea. In A.P. Cheater (ed.), *The Anthropology of Power: Empowerment and Disempowerment in Changing Structures*, pp. 88-102. London: Routledge (ASA Monograph 36)

[44] Swartzendruber (1993). *Papua New Guinea Conservation Needs Assessment- Synopsis Report.* PNG Department of Environment and Conservation.

[45] Lipsett-Moore et al. (2010): *Interim National Terrestrial Gap Analysis for PNG*. Report No.1/2010. 80

dissemination and use across government agencies. In summary, in terms of information, conservation planning and priority setting in PNG is still hamstrung by four major failings:

i. The low resolution and outdated imagery upon which the forest-type mapping has been based.
ii. The lack of robust biodiversity data.
iii. The disparate nature of the data that does exist, with much residing with NGOs, academics and industry.
iv. The lack of a centralized database enabling the overlay and updating of maps and relevant information from government agencies, academic institutions and industry to integrate land-use planning to enable the analysis of biodiversity trends.

Barrier 2.2: Inadequate Baseline Information to Quantify Payment for Environmental Service Schemes

67. Payment for ecosystem services (PES) schemes compensate landowners for management that provides conservation or ecosystem service benefits to other parties but which necessarily constrains their own revenue-generating opportunities. PES approaches have received much publicity and have been implemented in various guises throughout temperate and tropical countries with varying degrees of success[46]. There remain, however, a number of limitations that are common to most such approaches, principal among them being high establishment and transaction costs, low inclusivity of participation, and limited ecosystem service provision[47]. These problems have constrained the uptake of PES schemes, and further undermined their potential in meeting poverty alleviation and development needs that are often concurrent with demands for habitat conservation.

68. There is a clear need to establish baselines to identify and assess PES additionality in PNG. Precise needs for PES baselines will vary depending upon the environmental services being examined; however, for the pilot PES schemes being considered for this project, the PES baselines are likely to be closely, or directly, related to conservation needs planning. For example, watershed integrity for catchment PES schemes would require monitoring of headwater forest cover and quality (and consequent water quality monitoring). Similarly, the PES or biodiversity offsets being considered for New Britain comprise high conservation value forest and water runoff quality, again necessitating the implementation of monitoring systems for forest cover and quality. In addition, there will be a need to establish a scientifically robust system of measuring relative biodiversity values in PNG requiring significant quantitative and qualitative species information. Therefore, this barrier is directly related to the data deficiencies noted earlier under Barrier 2.1, so PES needs must be considered when determining priorities for land-use mapping and the design of any new biodiversity information systems.

BARRIER 3: INADEQUATE ECONOMIC INCENTIVES AND VARIABLE LOCAL CAPACITIES TO SUPPORT COMMUNITY CONSERVATION AREAS.

69. National debates about the design of integrated conservation and development (ICAD) projects in the 1990s were largely conducted on the assumption that direct cash payments or 'conservation rents' were neither affordable nor desirable as a way to persuade landowners to forgo the benefits of large-scale logging projects. Nor were conservation organizations able to compete with extractive industry in offering to deliver public goods and services to the landowners in return for their cooperation. It is hardly surprising that landowners have often expressed a preference for tangible things like roads, schools and health facilities, especially when these are not being provided by the Government. Invisible subsidies for small-scale business enterprise are less attractive, especially in rural areas whose biodiversity values are associated with low population densities and low levels of market access. In PNG, the shift from material to moral incentives that was pioneered in the ICAD project has now become the hallmark of conservation projects aimed at formal protection of biodiversity values, so the word 'development' has disappeared from their titles and they now target areas which are not under direct threat from large-scale resource development [48]. This change reflects two of the major barriers for conservation at a

[46] Pagiola, S. et al (2002). Selling Forest Environmental Services. *Market-based Mechanisms for Conservation and Development*, Earthscan, London.

[47] Wunder, S. (2008). Payments for environmental services and the poor: concepts and preliminary evidence. *Environment and Development Economics* 13, 279–297.

[48] Filer (2004): The Knowledge of Indigenous Desire: Disintegrating Conservation and Development in Papua New Guinea. In A. Bicker, P. Sillitoe

local level: the inability to develop realistic and sustainable economic incentives, and the inability of many local institutions to manage conservation projects and deliver community services, let alone up-scale, in the absence of ongoing external support.

70. Numerous efforts have been made over recent years to develop and promote community conservation models in PNG. These include projects to develop large-scale WMAs within ICADs, as well as small-scale community conservation areas supported by local development organizations such as the Locally-Managed Marine Areas (LMMA) network and the work of the Bismarck Ramu Group (BRG). However, none of these initiatives have thus far provided a successful, replicable and scalable model of community conservation within multiple-use local resource management. The BRG and the LMMA network have had significant success working in specific local areas over extended periods of time, however, these approaches have proved difficult to scale up and replicate at a national scale and have little chance of competing against viable resource extraction alternatives.

Barrier 3.1: Lack of Economic Incentives for Community Conservation

71. Biodiversity protection of non-threatened areas is admirable, generally, however, the reasons for community PA establishment (i.e. WMAs) are not conservation per se, but rather an attempt to attract or benefit from development. In some cases WMAs offer communities a relatively simple way to formalize landowner boundaries, in anticipation of possible future resources extraction or neighborhood disputes. In other cases communities expect a WMA to generate income from eco-tourism, community forestry, research grants and hunting levies. Unfortunately, these benefits, which have often been implied by conservation proponents, rarely eventuate. Some NGOs and conservation groups have been able to provide technical and financial support for conservation, but only on an ad-hoc basis at a limited number of priority sites and, as discussed earlier, many of these fail to deliver the on-the-ground benefits envisaged by communities. By comparison, preparations for destructive development strategies such as logging or oil palm conversion are readily financed by the industries concerned.

72. The focus of economic development in PNG in recent years has been on extractive industries which generate foreign exchange revenue. Non-extractive or non-depleting economic activities such as tourism, sustainable agricultural production or value-added processing of raw materials have received relatively little attention. The question of conservation rents or some other form of economic incentive for community conservation, therefore, remains extremely pertinent to areas such as the Brown River catchment in the Owen Stanley and the lowland forests of New Britain in which there are high biodiversity and ecosystem service values directly threatened by ongoing logging, mining and oil palm operations. Currently, economic development strategies in PNG (e.g. Medium Term Development Strategy, PNG Vision 2050) prioritize these non-sustainable resource extraction uses and provide no incentives for conservation.

73. Setting aside areas for conservation implies the loss of present and future incomes for the communities concerned, with no direct economic or livelihood benefit. The benefits of conservation areas accrue mainly at the landscape, national and global levels, while the costs (particularly in the PNG case) are borne by the landowners giving up access to their hereditary landholdings. Currently, communities are not receiving any benefits from these losses and as yet a transparent way of valuing any potential benefits for the communities has not been implemented in PNG.

Barrier 3.2: Low Capacity for Economic Development and Resource Management at the Local Level

74. Ultimately, community-based conservation areas are expected to be largely self-financing through revenue-generation and retention. However, experience in PNG shows that even where a potential income source exists (such as tourism, eaglewood, fishing or crocodile farming), it is often not accessed because most clans and local communities lack the consensus-building and technical knowledge to establish sustainable management structures. Even in cases where local resources are accessed sustainably, local communities, particularly in more remote areas, generally lack access to markets, updated market and price information, business development skills and small-scale business financing. As a result, there are limited opportunities to diversify income sources

and J. Pottier (eds) *Development and Local Knowledge: New Approaches to Issues in Natural Resources Management, Conservation and Agriculture*. London: Routledge.

or intensify returns through value-added processing or productivity improvements. Net incomes received per unit of natural resource (e.g. hectare of land converted, tonne of cash crop produced) remains relatively low, thus resulting in greater consumption of natural resources in order to generate sufficient incomes for basic needs. Market access barriers, especially high transport costs and low product volumes, have also retarded prolonged NGO efforts to promote a self-sustaining, economically viable, community eco-forestry industry in Western Province and New Britain.

75. Landowners do not always have a clear picture of the costs and benefits of different land-use options. Decision-making is often dependent on information and analysis put forward by interested parties such as logging, mining and plantation companies in pursuit of areas to exploit. Communities do not have a systematic method – or enough information – to assess the merits of alternative development options and strategies independently. This barrier has been highlighted by the recent spate of REDD projects proposed around the country in which it is clear that communities lack information to make informed decisions, or even have input into decisions being made on their behalf by absentee landowners.

Barrier 3.3: Variable Types and Capacity of Local Level Organizations

76. When policy makers or conservation planners try to deal with issues of local governance at a national scale in PNG, they tend to produce 'ideal types' of local-level organization which combine all available institutions in a single model which is then applied to the negotiation and management of landowner benefit packages. But, in PNG it is very difficult to generalize about the level or type of lower-level organization that should be engaged in a given conservation project. There is great variation in local capacities due to relative isolation and communications, education levels, local customs and exposure to resource industries: very different social and political environments may be encountered by projects of the same size and type. Determining the appropriate level of interaction is one of the functions of a preliminary social mapping and stakeholder engagement study during the land-use planning and site identification stages; this will be essential for project success in PNG[49].

77. Any conservation project in PNG is unlikely to operate in a social and political environment in which local landowners have not already been organized to participate in a resource development or resource management project of some description. Before deciding which of the available national models of local-level organization is best suited to the implementation of a conservation project agreement, external stakeholders need to consider the institutions which have already been established in this area, their relative capacity to deal with a new type of activity, and the possible synergies between them. At the local level, intervention may be undertaken at Ward level, which effectively represents village interests through their respective Ward profiles; these in turn are reported to the Local Level Government (LLG) which develop rolling 5-years plans and budgets for recurrent and development programmes to be implemented by the District Administration. Ideally, LLGs are an effective level at which to implement on-the-ground tools and service delivery, because they are part of the governance structure and are directly reflective of the Ward needs and planning to address these needs[50]. But even this model may be inadequate; for example, the recent social assessment of Kokoda summarized that LLGs and Councilors failed to represent village or household interests[49]. This further highlights the need for conservation projects to develop locally applicable development of local service delivery plans and benefits schemes as the project is developed. Thus, conservation management may need to be facilitated through a supported conservation committee, with identified local mechanisms delivering community feedback.

78. In many areas where resource benefits deals are established (e.g. for mining, oil and gas, logging and, potentially, carbon), local government is largely sidelined in service delivery and community benefits are arranged through Incorporated Land Groups (ILGs). ILGs range from representation of extended family groups, to groups of villages. In many cases ILGs are comprised of similar actors to the Ward level, but in other cases they are controlled by absentee landowners, with more business acumen and less direct connection with the villages. These conflicted ILG mandates and interests have caused endless problems for PNG in terms of community resource management and benefits flows and there is a huge backlog of ILG disputation cases to be

[49] Filer and Burton (2008): *Scoping Study for a Program of Social Mapping around the Kokoda Track and Adjoining Parts of the Owen Stanley Ranges and the Brown River Catchment.* Unpublished report to Australian Department of Environment, Water, Heritage and the Arts

[50] Department of Provincial & Local Government (2009): *The Determination assigning service delivery functions and responsibilities to Provincial and Local level Governments*. The Provincial Local Level Services Monitoring Authority (PLLSMA)

resolved[51]. It should also be noted that the ILG members do not necessarily mean that they are in the same Ward; ILGs often traverse across Wards in a District or adjacent Districts. In those areas where ILGs have already been registered, there is absolutely no guarantee that each one has an equivalent and exclusive claim to a specific area of land or bundle of resource rights. Therefore, although community conservation requires a resource management approach, there are concerns about models that would make ILGs the basic building blocks in any form of local-level organization. To address, these concerns, recent amendments the Land Groups Incorporation Act require each of these ILGs to 'reincorporate' by making new claims with new bodies of evidence to support them. While this increased rigor is welcome, potential investors in any kind of PES project could easily be forced to pay a major part of the transaction costs involved in the process of reincorporation. As was noted in earlier (see Barrier 2.2), high transactions costs can be a major hurdle for PES implementation, so any extra costs to clarify local usufruct may make a project untenable.

79. In order to determine which type of local-level organization is best placed to support a forest conservation project on customary land, it is first necessary to consider how a conservation agreement would be implemented. It is obviously preferable to use existing structures to facilitate this; however, it may be that none of the existing institutions are suitable. These concerns have been brought into focus by the uncertainty surrounding the attempted implementation of voluntary REDD projects in PNG, because the nature of agreements partly depends on government policy decisions that have not yet been made. Experience across different economic sectors suggests that the most problematic aspects for PES and community conservation will not be the negotiation of land-use plans or benefit sharing agreements but the management of landowner benefits[52]. Government service delivery has generally been very poor, so any conservation-linked service provision may need to be implemented through commercial or non-government service providers. In these cases, conservation management may be more effectively implemented by the formation of a dedicated conservation committee (as is required under the Conservation Areas Act), who can outsource specific service delivery needs as part of a conservation management agreement.

PROJECT RATIONALE

80. The barriers outlined above clearly show that the current community PA system is ineffective and weakly supported by Government due to a combination of unclear and/or conflicting land-use planning procedures, inappropriate conservation policy, inadequate funding and variable local capacities and support. These shortcomings result, in part, from the absence of realistic, strategically-focused national biodiversity priorities to guide policy. Symptoms of these problems are apparent through inter-agency conflicts over resource management and governance priorities between (and within) government, landowning communities, resource industries and conservation NGOs. It is well documented that the effectiveness of most on-the-ground conservation work in PNG has been stymied by the political and logistic difficulties of working with often disparate and isolated communities, who often have few development options. Moreover, even those projects that have had some success (such as the Tenkile and Matschie's tree kangaroo conservation projects, the Wanang Village forest plot, BRG projects and some LMMAs), have little prospect of being up-scaled due to the intensive nature of site support required through local NGOs and the ongoing problems of conflicting government land-use plans for the affected areas.

81. However, rationalizing failure on the basis of difficult landowner relations often masks a basic problem; that is, that conservation projects are almost impossible to implement without genuine all-of-government support. Even the most sustained community consultative processes will fail to deliver lasting community conservation in the absence of an overriding national agenda supporting conservation – defining this agenda has not been helped by the legislative overlaps and conflicts that currently apply to the management of protected areas and environmental protection. Achievable conservation projects must include a realistic funding plan, necessitating associated inter-agency and industry alignment to help support service delivery. The truth in this observation is evident for the Kokoda Initiative, where community conservation efforts and industry support for seminal PES

[51] There are reputedly over 10,000 pending applicants for ILG status. It should be noted that landowner associations have an unpredictable dual status as both pressure groups and representative bodies

[52] PNGDOM (PNG Department of Mining) (2003): *Sustainable Development Policy and Sustainability Planning Framework for the Mining Sector in Papua New Guinea: Green Paper.* Port Moresby: PNGDOM.

schemes are looking promising in response to a clear government mandate to promote – and value – conservation, which in turn supports external service delivery to affected communities.

LESSONS LEARNT

82. Until now, conservation in PNG has been driven almost entirely by NGOs; however, NGOs involved in conservation in PNG have generally failed to align their work program with the NBSAP. The limited ability of the national government to prioritize conservation has led all the international conservation NGOs to pursue a range of alternative governance approaches, either working directly with communities to develop WMAs (i.e. WWF and WCS), or bypassing the national level by attempting to have LLGs or Provincial authorities establish protected areas (i.e. TNC and CI). The frustrations and donor pressures for 'mappable protected areas' that have fueled these approaches may be understandable, however, the reality remains that a national system of sustainable conservation areas will be impossible without ownership of the system at a national level, which can then be linked with community engagement processes on the ground. National level buy-in is critical because this is the only level of Government at which conservation planning can carry equal weight with the resource planning agencies. In addition, the development of national conservation priorities would allow alignment and focusing of limited government and NGO resources to help undertake credible biodiversity assessments, provide technical expertise and help establish projects on-the-ground.

83. Previous GEF conservation projects in PNG have been largely unsuccessful because of some or all of the barriers outlined above. Since PNG presents many challenges to conservation, the lack of complete success for previous efforts is not totally unexpected – but, it is very concerning that well documented lessons do not appear to have been seriously considered in some consequent projects. Worse than being unsuccessful, some previous projects may have even created new barriers for future conservation efforts by over-promising benefits to communities and creating government and community suspicion of external NGO agendas. Clearly, these mistakes cannot be repeated again and, consequently, this project is designed very differently from the earlier efforts.

84. Two of the earlier GEF biodiversity failures in PNG, the Lak ICAD and the Milne Bay Marine Conservation Project, demonstrate fundamentally flawed approaches and poor project management, respectively. These failings have been well documented, but the root causes can be boiled down to a few key issues:

85. *Competing against industry* - The Lak ICAD attempted to trade conservation (via community forestry, carbon forestry and tourism) against an established commercial logging operation. In retrospect this was always destined to fail, as funding limitations, bureaucratic and ethical restrictions meant the project could never match the funding and the provision of quick cash and benefits delivered by a commercial logging operation. The community was divided and not surprisingly, played off the ICAD against the loggers for immediate gains – moreover, in retrospect there was probably never any real doubt that commercial logging would carry on in the long term. The main lesson was that a conservation project should never set up in competition against a commercial operation[53].

86. *Conflicting Government mandates* – As well as pitting conservation against business, Lak also set key PNG Government agencies on conflicting agendas; namely, the Department of Environment and Conservation (DEC), which was tasked with implementing the ICAD, against the PNG Forest Authority (PNGFA), which had been tasked by the same Government with selling the timber concession and supporting the commercial logging operations. Clearly, a project cannot succeed without unified Government support and clarity on roles and responsibilities.

87. *Non-Government agendas* – The Milne Bay Community-based Marine and Coastal Conservation Project (MBMCCP) has been roundly criticized as a lost opportunity. The project failed to deliver any significant benefits and was wound up early under a cloud of fiscal and political controversy[54]. The MBMCCP was designed (and the funding was largely controlled) by the American NGO, Conservation International (CI). Unfortunately, the project reviewers concluded that not only did the project fail to deliver conservation benefits, but also that CI was more focused on pushing its own agenda rather than helping the PNG Government develop

[53] McCallum and Sekhran, (1997). *Race for the Rainforest: evaluating lessons for an Integrated Conservation and Development "experiment" in New Ireland, Papua New Guinea.*

[54] Baines et al. (2006): *Milne Bay Community-based Marine and Coastal and Marine Conservation Project. Terminal Evaluation of Phase I*

a model for sustainable marine conservation. More worryingly, the publicity surrounding the MBMCCP deleteriously affected the credibility of conservation NGOs and the reputation of GEF-UNDP process in PNG because the project was predicated upon falsely raised expectations for the community, provincial and local governments, who all expected (or at least inferred) a rich flow of benefits and capacity-building opportunities. In reality, much money was apparently diverted to CI in Washington DC, CI consultants, travel and expensive vehicles. Local communities felt neglected and understandably upset, having seen few demonstrable benefits. Moreover, the various tiers of government were aggrieved by the lack of consultation from CI, resulting in a hostile perception that a foreign NGO was attempting to set up a self-serving parallel governance system for conservation[55]. The national Government (through the Department and Environment and Conservation) felt that they had been by-passed in the project design as the project approach was largely supposed to operate through the Provincial Government, who in turn felt they were ultimately let down. There is no doubt that NGOs can play a valuable role in helping design and implement conservation projects, but the MBMCCP provides a stark reminder of the need for any conservation project to be fully supported, designed and at least partly fronted by Government. Any project that fails to achieve genuine Government buy-in at the design phase will be vulnerable to the perception that external parties may have separate agendas which are not accountable to local communities and national interests.

II. STRATEGY

COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENESS

88. PNG signed the UNCBD on 13 June 1992 and ratified it on 16 March 1993, and is eligible to receive funding from the GEF. The project forms part of PNG's GEF-4 Biodiversity Resource Allocation, and was approved as part of the June 2009 GEF Work Programme. The project has been designed to link with and support key national development initiatives, including two recently-completed strategic planning exercises: Vision 2050 and the Long Term Development Strategy 2010 – 2030. These two national documents, in conjunction with the Environmentally Sustainable Economic Growth initiative, provide the main policy context within which the design of this project was undertaken.

Vision 2050

89. Vision 2050 is underpinned by seven Strategic Focus Areas, which are referred to as pillars:
    1. Human Capital Development, Gender, Youth and People Empowerment;
    2. Wealth Creation;
    3. Institutional Development and Service Delivery;
    4. Security and International Relations;
    5. Environmental Sustainability and Climate Change;
    6. Spiritual, Cultural and Community Development; and
    7. Strategic Planning, Integration and Control.
90. This project will contribute to key aspects of Pillar 5: Environmental Sustainability and Climate Change, in particular the key outcomes and indicators for this pillar which include:
    - protection of forests;
    - inventory of biodiversity;
    - communities resilience is enhanced (i.e. through improved environment management);
    - increasing tourism's contribution to GDP; and
    - adherence to international agreements.

Long Term Development Strategy (LTDS) 2010 – 2030

[55] Dowie (2008) The Wrong Path to Conservation in Papua New Guinea. *The Nation* September 29, 2008 (http://www.thenation.com/doc/20080929/dowie)

91. PNGs LTDS aims to stimulate economic activity through significantly increasing Government investments in infrastructure and through taking a more strategic approach to the management of key economic sectors, including agriculture, forestry, mining and tourism. The role of the DEC in supporting this strategy is to strengthen environment regulation to ensure exploitation of the nations non-renewable resources doesn't result in significant and irreversible damage to the environment and that renewable resources are used sustainably. The transition of the Department to a Statutory Authority will ensure significantly greater resources to support strengthened environment regulation.
92. The Department will also play a critical role in supporting development and implementation of a tourism strategy for PNG which have a strong emphasis on its magnificent wild places, fauna and flora and the extraordinary cultural diversity within PNG. The development of a sustainably financed national protected area system (NPAS) will become a critical component of the tourism strategy.
93. This project will primarily support development of the framework for a sustainable financed NPAS and establishment of the first national protected areas developed within the new framework.

Environmentally Sustainable Economic Growth Initiative (ESEG)

94. The ESEG initiative is a DEC managed policy development process which aims to provide guidance to the Government on how the LTDS can be implemented in a manner which ensures that the integrity of PNG's renewable resource base is maintained while rates of economic growth increase to lift people out of poverty. The ESEG policy framework has many dimensions of which the issue most relevant to this project is the focus on sustainable financing of protected areas. This will ensure they are managed effectively and that landowners who live within the project area are able to develop income streams through economic development which are compatible with protected area management.
95. Opportunities being explored include a range of 'Payment for Ecosystem Service' mechanisms, facilitating the support of the ecotourism industry (e.g. Kokoda Track trekking industry), and the potential for establishing an endowment Biodiversity Trust Fund which could provide an annual income stream to support activities within protected areas.

PROJECT GOAL, OBJECTIVES, OUTCOMES AND OUTPUTS/ACTIVITIES

96. Conservation in PNG is hindered by a combination of systemic and policy barriers to effectively manage PAs in combination with the capacity and economic development barriers at the local (community/ clan) level that directly affect the decisions communities make about the use of their natural resources. The challenge lies in devising resource-allocation decision-making models that allow communities to fulfill their income needs and developmental aspirations, while ensuring that a viable, representative proportion of the country's terrestrial and marine resources are conserved for national and global environmental purposes.
97. The **overall objective** of the project will therefore be to develop and demonstrate resource management and conservation models for landholding communities that effectively incorporate community-managed conservation areas as part of agreed national priorities with industry and government. Ultimately, the **key impact indicator** associated with this objective will be the extent of high conservation value area which is brought under effective community-based conservation at targeted sites. However, **interim indicators of progress** would be mechanisms for strengthened inter-agency coordination on conservation issues; development of national resource industry standards; strengthened policy and legislation to improve effectiveness of protected areas; identification of agreed national biodiversity priorities and criteria; and, demonstrated service delivery to participating communities. Outcomes to achieve this will be delivered in four sequential components:
98. **Component 1**: National enabling environment for a community-based sustainable national system of protected areas (PAs) containing globally and nationally significant biodiversity though improved institutional coordination, consolidated policy and legislation, improved DEC/CEPA staff capacity and development of funding structures to underpin conservation planning.
99. This component will provide the institutional coordination, policy and legislative reform, and supporting staff training necessary to promote community conservation areas that comply with agreed national biodiversity and land-use priorities. This component is vital to underpin institutional support and credibility for a national system of PAs. Project outputs will involve the establishment of high level whole-of-Government structures to coordinate land-use decisions across sectoral interests; this will mainstream conservation planning into forestry,

mining and infrastructure development proposals and vice versa. This integrated approach will be essential to develop a national strategic environment assessment policy framework, managed by the new national Conservation and Environmental Protection Authority (CEPA), which will seek to minimize the cumulative impacts on biodiversity and PAs by coordinating land-use decisions. This national policy framework will include new mandatory standards for environmentally sustainable agricultural production, including a commitment for all exported palm oil to be certified sustainable by 2015. In addition, DEC will initiate a process to establish national CARR criteria that can be implemented with a view to targeting conservation efforts at sites that offer the best prospects of success in terms of biodiversity value, minimum size requirements, management capacity and funding support.

100. Conservation policy and legislation will be reviewed and amended to deliver more effective and realistic PA management appropriate to PNG's customary landownership system. This will involve the integration of the three existing protected areas Acts into a single legal framework for PA establishment and management under a new Conservation and Environment Protection Act. Under this new Act, Conservation Areas will provide the legal basis for establishing a sustainable national system of PAs that contain globally and/or nationally significant biodiversity. The new legal arrangements for PAs will incorporate the requirement for mandatory Benefit Sharing Agreements (BSAs) and funding plans necessary to provide responsible communities with financial opportunities resulting from the provision of ecosystem services such as biodiversity conservation, watershed protection, coastal protection and fisheries spawning/ regeneration, and avoided deforestation.

101. The project design is cognizant of the need to transfer skills, and develop capability in PNG, along with providing support for policy development and conservation planning. The work packages envisaged in this component will provide the basis for ongoing training and technology transfer that will enable the DEC/CEPA to continue to improve conservation databases, planning systems and management effectiveness. Improved public administration will facilitate improved coordination across sectors and stakeholders, and more appropriate administrative and policy structures. This will in turn enable professional outsourcing of specialist tasks and service delivery with a credible monitoring and self-assessment systems, leading to more effective, professional and sustainable conservation outcomes.

102. **Component 2**: Identification and establishment of conservation areas through a structured science-based process, which aims to add 1 million hectares to the sustainable national system of PAs through the establishment of new Conservation Areas (CAs) and/or conversion of viable existing Wildlife Management Areas (WMAs) into CAs which can effectively remove current and future pressures for forest degradation and conversion.

103. This component will implement the outputs of Component 1 to establish and strengthen the network of PAs on the ground. Initially, the project will identify and establish at least two new Conservation Areas (CA): the Owen Stanley Ranges CA, incorporating the Kokoda Interim Protected Zone; and, at least one CA in New Britain, including an assessment for the proposed Nakanai World Heritage Area. These areas have been selected because the Kokoda Initiative is pioneering a PES approach to finance forest protection in the Owen Stanleys, while in New Britain the Government has identified the need to develop integrated planning approaches with the oil palm and logging sectors to protect threatened high conservation value forests and marine ecosystems. Therefore, in New Britain conservation planners and industry will need to identify potential PES options and delineate areas suited for oil palm development to meet guidelines under the revised codes of practice for sustainable oil palm.

104. Integral to this component will be the development of a much-needed National Biodiversity Information System (NBIS) comprising spatial and non-spatial information on PNGs biodiversity and socio-economics; this will greatly strengthen the rigor of an integrated conservation and land-use planning system. The NBIS will enable better monitoring of conservation status to improve mapping and risk assessment of national biodiversity assets. The NBIS will also provide scientifically robust biodiversity baselines, which are essential for PES schemes and environmental impact assessments.

105. In addition to creating new CAs, this component will also analyze the viability of existing WMAs with the NBIS to determine which areas contain global or nationally significant biodiversity. The management capacity and fiscal viability of significant areas will be assessed according to the presence of stable local institutions and the likelihood of community conservation funding options such as PES, or other donor sources. In effect, this assessment will determine the potential for effective long-term cooperation between the sectoral and local

management regimes. For selected areas which meet the global/national significance criteria, negotiations would be undertaken with landowners to obtain agreement for conversion to CAs.

106. This component will incorporate a strong lessons-learning and adaptive feedback mechanism, to share and disseminate examples of success and to ensure that mistakes and set-backs become opportunities to learn. To this end the ongoing work of the Kokoda Initiative will be a valuable guide, as the interim protected zone has been identified and initial stakeholder groups have been established in response to Government mandates to protect the Brown River catchments. The Kokoda Initiative has already shown that keys to conservation success include feasible service delivery options for communities, the provision of sustainable financing plans and inter-agency government support.

107. **Component 3**: Conservation Area management planning and partnership agreements with communities to ensure that CAs are effectively managed according to agreed criteria to maintain biodiversity values and deliver the economic development outcomes through payment for environmental services schemes specified in the community partnership agreements.

108. This component will help deliver management support required for new CAs to maintain biodiversity values and deliver the economic development outcomes specified in the community partnership agreements. This component will supply administrative and financial support for the establishment of representative CA management committees and the development and endorsement of CA management plans. Integral to this will be the development of sustainable financing plans for each CA; to this end, communities in prospective project sites will be provided with the tools, resources and capacities to develop conservation-compatible livelihood opportunities in sectors such as PES, tourism, forest monitoring and sustainable agriculture.

109. **Component 4**: Capacity development for CA management training needs to be ongoing and supported for Provincial, District and Local Level Government officials to help develop and implement tools for community management groups to deliver improved services, income, planning and education opportunities for communities within and around CAs.

110. This component will deliver ongoing staff training incentives for lower level government officers to develop and maintain an integrated conservation planning system and develop tools and community training packages to promote conservation. In addition, the component will work to ensure that staff training is incorporated as part of the expert database development and biodiversity assessment techniques being undertaken for the project. For Provincial, District and Local Level Government officers, training will focus on provision of supporting service delivery and tools, such as business development, protected area management and ranger training courses. This component will also help increase the capacity of landowners and communities to manage the CA and generate income from associated business activities. Finally, this component will also coordinate ongoing monitoring and evaluation of the project.

111. Underpinning these outcomes and outputs is a set of **partnerships** to be established among stakeholders at the various levels, to help coordinate and integrate efforts to effect significant change in the way biodiversity is mainstreamed within: (1) national policy, sectoral policies and standards, plans and programmes; (2) development planning at the local level (Provincial, District and LLG and community committees); and (3) within sites by influencing the actions of businesses, local communities and NGOs.

112. **Project activities** will cut across national policies and industry standards at the highest level (i.e. Component 1), but initial implementation of Components 2 and 3 will be oriented towards a few demonstration sites. These sites have been short-listed for a number of reasons: they contain nationally significant ecosystem and biodiversity values, representing two of the nine conservation planning ecoregions of PNG (see Fig XX); they can foster unified Government and community support; they present achievable opportunity costs and viable financing opportunities for conservation with business and industry; they are compatible with complementary national projects; and, they have service delivery mechanisms through existing industries or local institutions. Maps of the **project sites** are given in Annex A and a brief background of these specific conditions for each site are given below:

113. *Owen Stanley Range and Kokoda* conservation projects already have unified support and represent the best opportunity to develop a coherent all-of-government approach directly supporting and strengthening existing community structures with the Kokoda Track tourism market for implementing effective benefits sharing. The Kokoda Track is iconic in the history of PNG, Australia and New Zealand as the site of a major World War II

battle that turned the fortunes of the Japanese in the Pacific. This is PNG's most significant land-based tourism drawcard offering a combination of historical, cultural and natural features. Moreover, the importance of healthy catchments to supply Port Moresby's growing water and power (i.e. hydro-electricity) offers a viable market for PES opportunities to finance the protection of headwater forests in the absence of mining and logging revenues; this site can demonstrate proof-of-concept of DEC's ESEG approach. In addition, the Owen Stanley's are of high biodiversity significance; the 3,800 m high ranges are a significant elements of two globally outstanding (G200) Ecoregions, the South East Papua Rainforest and Central Range Montane Ecoregions (i.e. consolidated under the PNG Southeast Peninsula Ecoregion) containing a rich variety of vegetation types from savanna to monsoon forest, lowland rainforest and cloud forest. The Owen Stanley's have one of the richest floras of any mountain range in New Guinea with more that 4000 plant species including many local endemics. The region's forests provide habitat for endemic birds of paradise, bowerbirds, finches, wallabies, rats and numerous species of butterflies (including the world's largest, the Queen Alexandra's Birdwing) and aquatic insects including a number of endangered or critically endangered species.

114. In 2006, the Kokoda Track and Owen Stanleys Ranges were placed on the World Heritage Tentative List in recognition of the region's biological, cultural and historical significance. Therefore, this project will attempt to facilitate enhanced biodiversity mapping and research to refine the most robust conservation area requirements according to CARR criteria to further develop a full World Heritage proposal for this area.

115. *New Britain* island offers an opportunity to implement the national high level planning and mapping approaches advocated in Component 1 and develop the process to identify key conservation targets to meet the CARR criteria at the landscape level. The ecosystem of New Britain demands a reef-to-ridge conservation approach: the Nakanai Range was placed on the World Heritage Tentative list in 2006 as part of the Sublime Karsts of Papua New Guinea, due to its exceptional karst systems and intact forest ecosystems. Moreover, the biological value of the region was highlighted by a 2009 expedition that uncovered a startling 200 new species in the Nakanai and Muller Ranges in New Britain in 60 days[56]. The ranges and plateau have only a very sparse human population, with only small villages generally on the lower lands. Various areas of flat or near-flat land are used for cultivation, but then once harvested are left to lie fallow until secondary forest is re-established. Some natural disturbance results from such causes as cyclones, earthquakes or landslides. Thus, one can say that the natural forest has remained very much in its original but nevertheless, is in a dynamic and constantly changing state. However, there are looming threats from logging and limestone mining proposals. In addition, the fringing remnant lowland forests contain some of the best quality and highly valued forests in New Guinea. These forests have very high biodiversity significance: they are refugia for some of the highest levels of endemism on Earth and incorporate two (G200) Ecoregions, New Britain-New Island Lowland Rainforest, and Montane Rainforest Ecoregions (i.e. the consolidated PNG Northeastern Islands Ecoregion).

116. In addition to their intrinsic biodiversity value, the forests and mountains of New Britain are of vital importance to the globally significant Kimbe Bay marine environment, which is also subject to protection as part of the Coral Triangle Initiative. The health and protection of this marine environment is largely dependent upon the integrity of the coastal and lowland forest ecosystems and low montane catchments of the central Nakanai and Whiteman Ranges, which determine runoff into the sea. To address these concerns, this project will work in association with marine conservation projects to determine best-practice oil palm management as part of a national standard. Initial focus will be on the lowland forests that are highly threatened by expanding oil palm – a system to maintain linked habitat corridors and irreplaceable high conservation value areas is urgently required in the face of continued oil palm expansion. The project would implement the tools developed for CARR criteria and link this with the envisaged new national standards for oil palm using improved spatial imagery to undertake the informed development of landscape planning with oil palm and logging industries. Final site determination will be made according to CARR mapping, analysis of opportunity risks, and available finance under PES and possible conservation concession funding.

117. **The project will generate global environmental benefits** both at the specific site level, where at least 1,000,000 ha of high conservation-value terrestrial and marine resources will be brought under improved protection, and at the overall national level, where replicable models of conservation within existing community resource management structures will allow significant further areas of conservation to be established in

[56] Conservation International (CI) and Institute for Biological Research (IBR) see, http://news.mongabay.com/2010/1005-hance_new_png.html

association with best practice water catchment protection and sustainable oil palm production. The project will also represent a significant step-forward in a coordinated approach to conservation planning based upon partnerships with industry and NGOs to identify and deliver realistic and legally enforceable targets to conserve globally and nationally significant biodiversity values in PNG.

OUTCOME 1: NATIONAL ENABLING ENVIRONMENT FOR A COMMUNITY-BASED SUSTAINABLE NATIONAL SYSTEM OF PROTECTED AREAS (PAS) CONTAINING GLOBALLY AND NATIONALLY SIGNIFICANT BIODIVERSITY

118. Under Outcome 1, the project will align national policies, standards, data and institutional systems so that national conservation priorities can be mainstreamed across relevant government agencies to support local governance for more effective community conservation. This Outcome will also ensure that necessary systems are established to support sustainable land-use planning at the landscape level by integrating national development planning processes with ecosystem based planning for marine and coastal management programmes. This component will ensure that consistent policies, legislation and tools are in place for biodiversity impact assessment and prioritization within CEPA and other relevant agencies. This will involve the development and implementation of agreed criteria for biodiversity conservation, and codes of practice for agricultural land-use. Therefore, this Outcome will establish the institutional structures, policy framework and supporting information to upscale the planning approach piloted for the Kokoda Initiative, which seeks to establish an industry supported conservation area (as described in the diagram below).

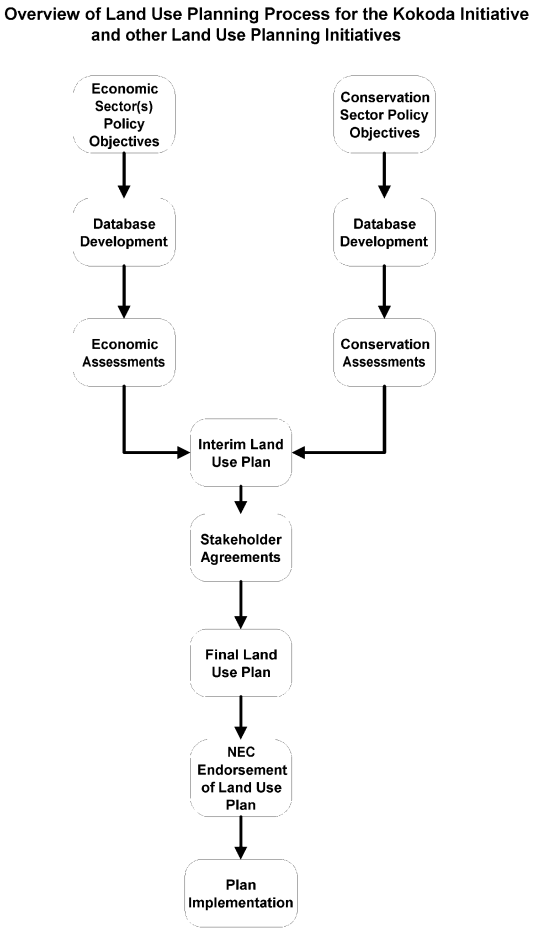

Figure 2: Planning Approach for the Kokoda Initiative

119. This Outcome will focus government conservation planning efforts in areas of high biodiversity values that can be sustainably managed to maintain ecological viability, thus ensuring that potential PAs are comprehensive,

adequate representative and resilient (CARR). In order to achieve these aims, this component will deliver a number of supporting outputs: (i) to define in law an all-of-government approach to mainstream conservation needs into integrated national planning and codify the specific stakeholder obligations and reporting formats for biodiversity audits under environmental permitting regulations (Outputs 1.1.1 – 1.1.3); (ii) to establish and implement agricultural land-use standards (Output 1.3.2); (iii) to consolidate and improve existing environmental policy, incorporating minimum ecological, management and funding requirements for Conservation Area gazettal (Output 1.4.1); (vi) to establish mechanisms to facilitate payment for ecosystem services projects (Output 1.5.1); and, (v) to develop the capacity of relevant stakeholders to improve the planning, administration and service delivery for protected areas (Output 1.6.1).

Output 1.1.1: High level whole-of-Government structures established, to coordinate land-use decisions

120. Engagement of key resource management agencies is critical for effective land-use planning, so a policy framework review will present options to implement a national level whole-of-Government Committee to coordinate land-use policy and decisions on major projects. There are currently several high-level decision making groups with responsibility for advising Government on policy for environmental planning and conservation assessments, including the Environment Council, under the Environment Act, and the National Conservation Council, under the Conservation Areas Act (see Barrier 1.2). A clear aim of this output will be to mainstream conservation and environmental planning under a centralized committee and to remove the legislative and administrative overlaps and confusion. This will be enacted under a new Conservation and Environment Protection Act (see Output 1.4.1)

121. The structure of a National Sustainable Land-use Planning Committee (NSLPC) will be determined by the ongoing policy review process together with the experience gained during the conservation pilot site assessments undertaken in this project. The committee will be structured to ensure institutional continuity with the new CEPA structure during the amalgamation of the Environmental and Conservation Acts administered by CEPA (see Output 1.4.1). Given the intention to amalgamate and streamline conservation management, it is envisaged that the new Conservation and Environmental Protection Act may replace the Environment Council and National Conservation Council with the NSLPC who would have a mandate to mainstream the over-arching national conservation agenda (i.e. establish scientifically-based national biodiversity conservation criteria and designate minimum threshold standards for the gazettal of Conservation Areas). This would ensure that key conservation needs are incorporated into inter-agency land-use planning and environmental permitting. Laws will dictate that land-use plans must include an audit of environmental impacts approved by the high-level committee; thus ensuring that the new structure does not face the current difficulties in convening conservation committees due to costs, logistic difficulties and limited available expertise (see Barrier 1.1).

122. In order to determine the viability of protected area proposals, the high-level NSLPC will require specialist input from other Agencies and relevant service providers. Where necessary, specialist technical committees (similar to the Environment Consultative Group under the Environment Act) can be established. To this end, this project will work to further strengthen and formalize the National Taskforce approach that has been introduced under interim policy to help produce a sustainable development master plan for the Brown River Catchment and Kokoda Track. The Taskforce membership for the Kokoda Initiative comprises core representatives from six key government departments which would also be represented in the national-level planning committee; DEC (Chair), National Planning and Monitoring, Treasury, Finance, Provincial and Local Level Government, Lands and Physical Planning. In addition, the Taskforce includes representatives from relevant resource authorities and industries; for the Kokoda Initiative, these include the Mineral Resources Authority (for removal of mining leases), PNG Forest Authority (for removal of forestry leases), Tourism Promotion Authority (Kokoda trekking management), National Cultural Commission (heritage values of Kokoda Track), PNG Power and Eda Ramu (power and water authorities to buy ecosystem services for catchment protection). Depending upon the regional needs, other participants can be co-opted as required. The project in New Britain, for example, will definitely require input from the oil palm industry and probable interaction with marine resources agencies.

123. The outputs from the Conservation Area Taskforce (CAT) would feed into decision making for both higher level national strategy, as well as for more effective conservation on-the-ground (see Table Y). At a national level, the NSLPC will ensure that Taskforce projects align with the national biodiversity and sustainable development

priorities (thereby updating national targets and databases with new information). At a local level, the CAT will manage the establishment of new Conservation Areas, ensuring adequate funding to support the effective functioning of a Conservation Area Management Committee (CAMC) (see below). Once established, a CAMC should be able to function independently and report directly to CEPA, allowing the dissolution of the CAT.

124. The Conservations Areas Act that requires that a Conservation Area Management Committee (CAMC) must be formed to endorse a CA Management Plan; this system would be maintained under the protected areas division of the new Conservation and Environmental Protection Act. Regulations state that the CAMC consist of not less than three members appointed by the Minister by notice in the National Gazette. Membership of a management committee shall reflect the interests of the owners of the land within the conservation area; and the Provincial Government, Local-level Government or Local-level Government Authority in the province or areas within which the conservation area is situated. The CAMC will be responsible for the development of and implementation of the Conservation Area Management Plan (see Outputs 3.1.1 and 3.1.2).

Table 5: Possible Structure for Conservation Area Establishment and Management under CEPA

Group	Governance Level	Role	Reporting level	Replacing
National Sustainable Land-use Planning Committee (NSLPC)	National -all-of-Government	Set environment agenda; decide on development boundaries; set environmental assessment needs and standards; decide on Conservation Areas gazettal; recommendations for environmental policy changes.	Minster; NEC	Environment Council (Environment Act) National Conservation Council (Conservation Areas Act)
Conservation Area Taskforce (CAT)	National with lower level representation as required)	Convened to facilitate the establishment of Conservation Areas: coordinates relevant authorities and industry; identifies financing options; establishes Conservation Area Management Committee	NSLPC	Formalizing interim measures under the Environment Act
Environmental Consultative Group	Various	Convened for specialist advice on technical issues	Minister, NEC; NSLPC; and/or CAT as required	Mandate already exists under the Environment Act
Conservation Area Management Committee	Provincial and Local	Implement Conservation Area Management Plans	National Agencies (CEPA)	Mandate already exists under the Conservation Areas Act

125. The procedural operation of a national Sustainable Land-use Planning Committee would be based upon those for Environment Council and the National Conservation Council. The final committee should include representatives of the heads of CEPA (Chair) and the Dept. National Planning and Monitoring, Dept. Treasury, Dept. Finance, Dept. Provincial and Local Level Government, Dept. Lands and Physical Planning. The Committee should also include several qualified professional with expertise in relevant fields such as environmental science and conservation; environmental impacts; environmental policy or law; resource management and economics; and, socio-economics and social impact assessment. These experts members shall be appointed by the National Executive Council from a nomination list of not less than 10 persons submitted by a Committee comprised of the Departmental Head of the Department of Attorney-General, the Director of Environment; the President of the Papua New Guinea Council of Churches; the President of the Business

Council of Papua New Guinea; and, a person nominated by the National Alliance of Non-Governmental Organizations.

126. The Conservation and Environmental Protection Authority will act as secretariat for the Committee, which should meet every 3 months. Provision would also be made under the Act to convene the Committee in the advent of urgent issues. Summaries of all minutes should be made available after the meetings, and as soon as practicable after the end of each year; the Committee shall furnish to the Minister a report on the operations of the Committee during that year. Any interim decisions or findings of the Committee will be supplied to the heads of all relevant Government Departments and Agencies and would also available on the CEPA websites and as reports.

127. Committee finding and decisions must be made available for comments and feedback from relevant stakeholders. Guidelines under the current Environmental Acts, state that decisions be made available at the office of the Local-level Government in whose area the area the subject of the recommendation or decision affects; and by a radio broadcasting service which specifically serves the area the subject of a decision; and at the office of the Provincial Government of the province in which the area the subject of the recommendation or decision or declaration is situated; and in such other places and in such other manner as the Minister considers appropriate. Regulations would provide for public feedback within a set period for comments through a dispute resolution mechanism to be agreed by a cross section of stakeholders.

128. The Committee would oversee a regular audit of the national register of protected areas and the biodiversity information database (i.e. the NBIS) with summary of changes to feedback into planning and permitting processes (i.e. changes of the status of protected areas, changes in species schedules, changes in development lease status'). A mechanism would be identified by which this information would be shared with development sector agencies and routinely incorporated into forestry, mining and infrastructure development proposals. This database would require official sign off from all agencies to certify that cadastral boundaries, landowner registrations and other land-use and planning information was correct. It would be used as the basis for all environmental permitting under CEPA.

129. A national registry of PAs will be created and included as part of the spatial GIS dataset (see Output 2.1) to be made available to all members of the National Task Force. A first step would be the collation of the existing gazettal information within DEC together with the RAPPAM data into an accessible centralized database. In addition, these data would be made available in hard copy; boundary maps, location lists and management plans. This information would form one of the key land-use layers used during the cross-agency audits for an integrated land-use planning process. These data would be reviewed regularly and also be available on-line to ensure widespread accessibility while also providing a forum for feedback from a wide range of stakeholders.

130. Laws will mandate that any environmental permitting must refer to the latest version of the National PA Registry and ensure that any conflicts with PA are noted. The first stage in this process will be undertaken in the review of existing PAs (see Output 1.10) to ensure that land-use conflicts are noted and that registered PAs all meet minimum national standards and can demonstrate genuine community support. Permitting for any development activities that could affect PAs would only be approved once any conflicts have been resolved through the cross-agency process to ensure no breach of PA management plans. In addition, evidence would be required of community awareness of proposed activities meets agreed values of free-prior and informed consent. Furthermore, any development proposals would be made available to community committees and posted on-line for public comments.

131. This output will feed directly into related policy and planning outputs within this project component. Resolution of conflicts between government agencies over activities affecting PAs would be addressed through the establishment of a cross-sectoral mechanism for the multiple functions of PAs to be factored into the development plans under Output 1.1. Environmental assessments for individual projects would be carried out rigidly, and there would be a greater emphasis than now on strategic environmental assessment to routinely consider PAs from the start of planning processes for regional development under the framework developed in Output 1.5. In addition, the registry will detail the regime for the various categories of PAs (Output 1.9) and their associated internal and external management zones.

<u>Output 1.2.1</u>: PNG's Medium Term Development Strategy and related planning documents incorporate and provide support for the objective of developing a Sustainable National System

of PAs

132. Currently the government is working on the Medium Term Development Plan (MTDP) 2010- 2015 to identify indicators, deliverables and costings. It is envisaged that the deliverables will be addressed through the Sector Plans, Provincial Plans, District plans etc. There are also mechanisms identified for policy and mainstreaming, programme and activity and legislation in terms of compliance and enforcement. Most recently with the launching of the PNG Vision 2050, the PNG government recognized the climate and environmental sustainability as its fifth pillar of the vision. In implementing the vision, the government has developed the PNG Development Strategic Plan, 2010-2030 (PNG DSP).

133. The project will ensure that the PNG MTDP and DSP explicitly recognize minimum environmental standards, and accommodate national biodiversity priorities including provision for a system of sustainable PAs. These strategic documents should mandate that PAs be given full consideration in all regional development planning documents, in recognition of PNG's international treaty obligations on conservation of biodiversity and maintenance of ecosystem services. The MTDP should make provision for the regular auditing of national biodiversity values alongside those undertaken for other natural resources. This audit should refer to mandatory national standards and include reference to economic valuations of biodiversity in terms of sustainable agricultural standards (such as RSPO and Codes of Practice), bioprospecting and wildlife trade rights, and, possibly, carbon rights.

134. In addition to the economic projections for development activities, the MTDP and DSP will also include economic modeling undertaken by this project to account for the costs of developments in terms of the degradation or loss of forest cover, water catchments, soil loss, carbon values, fisheries health and tourism opportunities. This should include updated trend analyses of the international and local opportunity costs that should be weighed against long-term project benefits to enable the consideration of PES options. These strategic plans should also make provision for the potential costs of climate change effects (such as increased flooding events, sea level inundation, food security, increased disease, etc.) and acknowledge the role of a well-managed protected areas network to mitigate these effects as part of the national planning strategy.

<u>Output 1.3.1</u>: National Strategic Environment Assessment Policy Framework to manage the issue of cumulative impacts on biodiversity and PAs through a failure to coordinate land-use decisions

135. The project will support the DEC to make a review across land-use planning policies, to track the environmental audit needs for various agencies and to determine problems with regards to biodiversity data collection and environmental assessment activities. This output aims to clarify several key issues:

136. Establish the responsibilities with regards to PA management of different agencies for funding mechanisms, procedures for submission and approval of plans, supervisory and control mechanisms, requirements for standardization of reporting, monitoring and information sharing.

137. Resolve the problems of conflicting jurisdictions and allow PA managers adequate decision making rights or representation on local decision making bodies.

138. Recommendations will be made as to how to standardize environmental assessments within a National Strategic Environment Assessment (NSEA) policy framework by ensuring all assessments are based on centralized, accurate data available to all relevant agencies (through Outputs 2.1.1 and 2.1.2). The NSEA framework will develop explicit policy statements to ensure that land-use practices do not contribute to further habitat fragmentation or biodiversity loss, and certify that conservation assessments across agencies refer to national targets for representation of species, habitats and regions within a PA system. The framework will further develop cross-linkages to ensure that planning measures taken outside PAs are consistent with strategies to maintain connectivity and to mitigate effects within the PAs. To facilitate improved alignment with on-the-ground conservation management, all PAs management plans will be reviewed and approved within the NSEA framework and will take full account of the land-uses within and around the PA boundaries. The NSEA policy framework would also clarify the roles of supervisory bodies at national and provincial levels in evaluating environmental plans.

139. To facilitate the assessment of cumulative impacts of land-use decisions on biodiversity, the NSEA policy should state the indicators, parameters, factors or criteria to be used in measuring or deciding any quality or

condition of environment and, moreover, reference acceptable survey methods, metadata formats and national CARR criteria to ensure consistency of environmental assessments across land-use planning agencies.

Output 1.3.1: National Policy framework on environmentally sustainable agricultural production developed, including a commitment for all exported palm oil to be certified sustainable by 2015

140. This project will support the DEC to develop a national policy framework to implement agricultural production practices that minimize the clearing of forests and threats to biodiversity. This policy framework will articulate the need for a mandatory national Code of Practice for sustainable agriculture production to be implemented for all oil palm exports by 2015. This output will be undertaken in concert with concurrent sustainable land management work by the DEC that is reviewing the status of agricultural methods and identifying research and policy requirements. The sustainable land management initiative is tasked with developing terrestrial ecosystem impact assessment criteria considering natural and man-made impacts relevant under the Environment Act. A key input into this process from the current project will be the integration of forest cover and land-use maps (from Output 2.1.1) into the Land Information System (LIS) envisaged under the SLM project. The LIS will establish a protocol for integrated standards, access and data sharing across agencies with responsibility for agricultural projects – this will also link directly with NSEA Policy framework to be delivered under Output 1.3.1. A further specific input from this project into the agricultural standards being developed will be minimum protection recommendations for high conservation value forest landscapes (i.e. consistent with the new CARR criteria); these requirements will be incorporated into the national policy recommendations for sustainable oil palm.

141. In cooperation with the SLM project, participatory reviews will be made of the strengths and weaknesses of the state lands leasing systems, the legal issues and the appropriateness for conservation and/or sustainable agriculture. Comparisons of the effectiveness of land tenure arrangements will be made to determine how conservation policy can work most effectively in concert with DAL policy, the National Agricultural Plan, agricultural extension materials, National Forest Policy and the National Forest Action Plan. This will be part of an overall strategy to integrate and mainstream sustainable land-use planning and conservation concerns into mandatory standards and Land Use Planning decisions in Outputs 1.1.1 and 1.3.1.

142. The project will support the ongoing review and modification of the existing voluntary Round Table of Sustainable Palm Oil (RSPO) certification system to develop a mandatory national Code of Practice (CoP) for sustainable agriculture in PNG. The CoP will retain the core sustainability values of the RSPO, but reflect the socio-economic reality that landowner demand is one of the major drivers of oil palm expansion in PNG. The CoP will mandate for the optimal biodiversity-sensitive landscape planning of plantations including identification of wildlife corridors, significant species, key watersheds and site-specific steam buffers. The CoP will also implement a set of national CARR criteria to determine high conservation values which must be retained and facilitate the quantification of biodiversity offsetting approaches.

143. Under the DEC's sustainable land management initiative, a consultative group has been established with members from the DEC, Department of Agriculture and Livestock, Oil Palm Research Association and conservation NGOs to develop the draft CoP. Adherence to the CoP will be mandatory for issuing of environmental permits for oil palm projects under the Conservation and Environmental Protection Act.

Output 1.4.1: Integration of the three existing Protected Areas Acts into a single legal framework for PA establishment and management

144. The project will review the three existing Acts used to create and manage PAs (National Parks Act, Conservation Areas Act, and the Fauna Act) to identify overlaps and resolve any inconsistencies. It will then be possible to convert the three separate Acts into a 'Division' (related to protected area identification, establishment and management) in a single Conservation and Environmental Protection Act (CEPA). This consolidated Act will incorporate a range of minimum standards and requirements for PAs to ensure that they contain nationally or globally significant biodiversity values together with credible management capacities to warrant national support.

145. The project will support DEC to develop policies making the provision of sustainable conservation financing a pre-requisite for the gazettal of a protected area. Amalgamated protected areas policy guidelines will be

developed to incorporate funding obligations for protected areas and legislate for the establishment of Benefit Sharing Agreements (BSA) with landowners as part of a mandatory protected areas management plan. To support this process a policy review will define, (i) the level of budget detail required; (ii) the identification of funding sources and the level of funding; (iii) the minimal length and security of funding agreements; (iv) the identification of payment and service mechanisms and/or the capacity to develop them; (v) the minimum management and reporting obligations to warrant funding assistance; (vi) the possibility of various levels of protection categorization linked with variable funding status; (vii) potential penalty system for failure to meet BSA obligations by any party; (vii) independent safeguards or audit processes to ensure funding is viable and benefits sharing arrangements for management service are equitable and deliverable; and, (ix) any legal, or other, impediments to financing schemes, and how they may be overcome – this would include a clarification of potential policy overlaps with regards to land ownership and usufruct rights, which may cloud BSA arrangements for conservation.

146. In partnership with the DEC and private sector representatives, business opportunities that are compatible with PAs will be identified, and existing structures of incentives and regulations assessed to determine whether these are sufficient to attract investments. Examples of policies and practices in other countries, particularly in stimulating demand for low impact activities, such as community-based nature tourism, handicrafts production and food processing, will be identified and adapted. In addition, the policy review will make provision for the inclusion of payment for environmental service options to fund conservation, including the feasibility of adapting existing environmental protection trust fund legislation and/or recommendations for supporting policies, legislation and administrative structures under a Conservation and Environmental Protection Act administered under a Conservation and Environmental Protection Authority.

147. This Output will develop a system to categorize PAs, adapting the IUCN categories to set up different management objectives according to the overall needs and feasibility in the PNG context. The PA management system should specify legal procedures and criteria for establishment of various categories of PAs, based on their management objectives, tenure systems, supervision and evaluation mechanisms, methods of funding, and participation of local communities and other stakeholders. The findings of the SLM project, which will analyze the ecological impacts of the traditional ecological knowledge and land management practices, will help inform the conservation management requirements with regards to the ecological compatibility of traditional landownership and land-uses (e.g. subsistence farming, wood collection, seasonal burning, etc.) within prospective conservation area categories.

148. The project will determine the appropriate management criteria and intervention levels required to deliver specific conservation benefits, such as protection of ecosystem services, targeted species protection, maintenance of landscapes, etc. These assessments will determine whether PAs are most effectively managed under single level of protection and/or a range of nested protection levels.

149. In summary, the PNG Government will use the above information to develop a categorized PA system to meet the following objectives:

    i. Establish clear objectives of management for each PA type, using a range of PA categories to meet management objectives, from the strictly protected to sustainably-used areas. For this purpose, the IUCN guidelines on PAs management categories[57] may be consulted to build upon and improve the existing PNG categories.

    ii. Establish the requirement for each PA in every category to have clearly stated objectives from the date of gazettal and for those objectives to form the basis for management planning and internal zoning.

    iii. Should PAs be divided into different management zones, provide for areas to enable community use of resources, where suitable and consistent with the management objectives.

    iv. Ensure the consistency of PA categories to enable conservation planning to be conducted at the landscape/bioregional scale, within the overall planning frameworks of provincial, local governments, and within an overall national PA system plan.

---

[57] **Dudley, N. (Editor) (2008).** ***Guidelines for Applying Protected Area Management Categories.*** **Gland, Switzerland: IUCN. x + 86pp**

v. Assess all PAs against the revised categories system to review their management objectives and assign them to appropriate categories based on the local context and established objectives – however, in doing so, guard against expediency oriented dilution of protection status.

vi. Successful implementation of the new PA system will rely on more than a single law: revisions of other relevant laws will be required so that they incorporate PA considerations. Concurrent work on new laws, such as the combined environmental protection legislation (Output 1.3.1) and support for provision of sustainable financing for PAs and sale of ecosystem services (Output 1.5.1) should be made to enable a new PA framework law to function without conflict and ambiguity.

150. The new PA policy will mandate that PAs must align with national biodiversity priorities before they can be approved for gazettal as a Conservation Area (CA). It will be necessary to ensure that measureable criteria for biodiversity values are enshrined within conservation policy as an initial threshold for any CA establishment. Gazettal approvals will refer to a set of conservation criteria such as the incidence of rare and threatened species, ecoregional significance, coverage and ecological viability, and connectivity and quality of habitats. To facilitate this assessment, the project will develop a legal determination of biodiversity priorities for PNG that will draw upon the biodiversity information systems to be developed in Output 2.1 and scientifically-based criteria to define what constitutes a comprehensive, adequate representative and resilient (CARR) protected area.

151. The implementation of a policy framework to support an effective national system of PAs will require DEC to re-assess the viability of all existing PAs. Only those PAs that are deemed as having national or internationally significant biodiversity values, by the criteria described above, will be considered for the next stage of the CA appraisal process, i.e. a barrier analysis of sustainable financing options and management capacity. For existing PAs that fail to meet these biodiversity and management criteria, the policy will call for their de-gazettal and removal from the national register of PAs.

<u>Output 1.5.1</u>: Models established to support payments for ecosystem services generated within protected areas (e.g. watershed protection, biodiversity offsets, fisheries protection, REDD), linked to formal Benefit Sharing Agreements within protected area legislation

152. Concurrent with the development of a national policy for the sustainable financing of protected areas, the project will develop payment for ecosystem services (PES) models that can work effectively within a PA financing system to deliver funding through a revenue generation and a benefits sharing agreement (BSA) model endorsed by the PNG Government. Because of the complexities and linkages with all levels of governance (institutional, policy and legal), these models will need to be developed through the implementation of pilot PES schemes to illustrate the viability of the concepts and identify which policies and institutions will most effectively facilitate them.

153. Draft policy and legislation will be reviewed and assistance in the implementation of PES and biodiversity offsets will be sought from experts, such as the Business and Biodiversity Offset Project (BBOP) who can assist with the establishment and certification of biodiversity offsets to international standards. Key to this will be the development of minimum data standards and monitoring systems to ensure measurable delivery of services (i.e. conservation of ecosystem services) and adequate payments to service providers (i.e. landowning communities in conservation areas) though agreed BSAs that account for management costs (see Output 3.2.2).

154. Pilot payment for PES projects will be undertaken in several candidate conservation areas to investigate a range of environment service options. The project will assess several possible pilot projects against generic criteria and shortlist those which can meet five prerequisite conditions: (i) contain – or directly influence the protection of – ecological values that are deemed nationally significant according to the national biodiversity priority criteria; (ii) contain a well-defined ecosystem service or corresponding land use; (iii) have an identified ecosystem service buyer; (iv) have an identified ecosystem service provider; and, (v) have secured service provision. The shortlisting process is summarized in the figure below.

155. For the shortlisted projects an initial assessment will be made to determine two key information needs for each project: (i) data required to develop a baseline to assess additionality; and, (ii) estimates of the provider's opportunity cost of conservation (or restoration). Where information exists, or is likely to exist, the quality of the information will be assessed, where information is lacking, the cost of acquisition will be estimated if possible. For demonstration purposes, the project will undertake economic costing for pilot areas in the Brown River catchment in the Owen Stanleys with two service buyers, Eda Ranu (urban water supply) and PNG Power

(hydro-electricity generation), which have already expressed a need to protect the catchment from mining and logging threats. In addition, a preliminary determination of the opportunity costs to identify and protect high conservation value forests in New Britain will be examined in association with the oil palm industry, who are keen to clarify and implement their environmental obligations under the RSPO. Details of these pilot project sites are given in Outcomes 2.3 and 2.4 and a model for the Kokoda PES scheme is presented in Output 3.2.2.

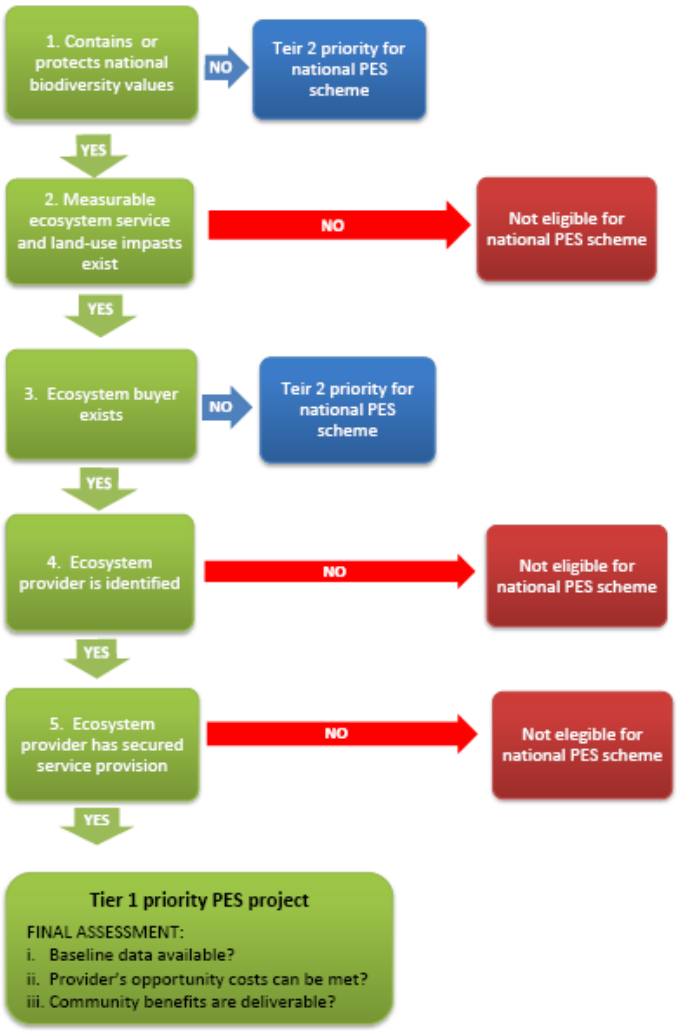

Figure 3: Draft Assessment Process for Potential PES Projects

156. Using the pilot PES sites, the project will test a governance model to support PES through the sustainable funding policy identified in Output 1.5.1. Currently, the DEC has no mandate to generate or handle payments to support conservation; this deficiency has been a barrier to the implementation of pilot REDD proposals. Therefore, the PES model will need to develop a management structure in which payments generated through permitting can be captured and re-invested back into PES and other conservation funding. It is envisaged that this capacity will be achieved through the creation of a Conservation and Environmental Protection Authority (CEPA) by the PNG Government in 2011-12.

157. The above steps will result in at least two demonstration PES projects and a priority list of other possible PES projects. Using this information, this project will make recommendations for up-scaling this approach to develop a national PES model. Such as model will need to incorporate technical specialists and potential service buyers (such as industry representatives and NGOs) within a system that ranks PES projects to determine national funding and support priorities for the pilot areas. Project rankings would be based upon biodiversity importance, the viability of the proposal to meet the national PES criteria, and the existence of effective BSA mechanisms – a

possible iterative approach to guide these decisions is shown in the table below. A PES working group would incorporate a monitoring system to provide feedback on pilots and enable the re-evaluation of projects' viabilities and adjustment of assessment criteria and according to lesson learned though Output 4.4.

Table 6: Assessment Guidelines for possible PES (Tier 2) Projects

Level	Reason for failure	Possible actions
1.	Protection of area will not meet national biodiversity criteria	Assessment can continue from Step 2. If there is demand for the ecosystem service the project may still be implementable, but not at the expense of support for higher priority projects.
2.	No measureable service or land-use change	**None**: impossible to implement or value PES with no baseline measures.
3.	No services buyer identified	Assessment can continue from Step 4. The project may still be implementable, but not at the expense of higher priority projects. Philanthropic and/or donor funding may be an option.
4.	Ecosystem provider cannot be identified	**None**: will be impossible to implement PES without responsible management actors.
5.	Security of service provision risk too great	May be possible to solve problem (e.g. clarification of landowner tenure claims); however, this must be overcome before any PES scheme is contemplated.

Output 1.6.1: Capacity development programmes for DEC (CEPA) and other relevant agencies, including emphasis on public administration, financial management and procurement

158. The project will assess the implementation needs of the project within DEC and identify capacity gaps. In coordination with existing institutional strengthening programmes, a Development Plan will nominate key staff and identify appropriate training opportunities. If available course options are unsuitable, DEC will work with credible institutions (such as James Cook University and the Australian National University) to develop accredited training modules tailored for applied work with PNG on topics such as public administration, policy coordination, and resource management and planning.

159. Following the identification of training needs for DEC staff in Output 1.6.1, officers who meet the selection criteria will work with DEC management and project staff to develop individual three year capacity training plans. Staff who wish to develop their skills, will undertake individual performance agreements to successfully complete training modules in accordance with their training plans. The relative success of staff to meet their training plans and implement new skills and methods into work projects, will factor into work appraisals within DEC as part of a transparent staff training and career advancement system.

160. The project will support DEC staff to develop more effective systems to identify and procure external services and improve contract management. Successful implementation of this project will require DEC to identify qualified experts, who can help develop training programmes and tools to improve community conservation. Moreover, the project will require professional assessments of PES funding scheme and effective service delivery of education, health infrastructure and training. During the establishment of CAs, DEC staff will need to coordinate training of key personal at within all levels of Government and the CA Management Committee (CAMC) to improve these skills to enable the maintenance of CA Management Plans (CAMPS).

161. DEC staff must have the capacity to develop and enforce project agreements, which ensure that any work on conservation or biodiversity funded by (or under the auspices of) this project are aligned with DEC's national priorities to support the sustainable network of PAs. This would include commitments by national and overseas universities, NGOs or other researchers to train PNG scientists and ensure biodiversity research is coordinated according to agreed terms of reference.

OUTCOME 2: COMMUNITY-MANAGED CONSERVATION AREAS IDENTIFIED AND ESTABLISHED IN THE OWEN STANLEY RANGE AND NEW BRITAIN

162. Outcome 2 will support the development of a new national biodiversity information system (NBIS), incorporating new spatial information and socio-economic data, and link this with the institutional enabling conditions developed and implemented in Outcome 1 (i.e. data sharing of forestry and development plans, CARR criteria, PES models, agricultural codes of practice, and amended conservation policy options) to identify and establish viable conservation areas. This project component will support the creation of detailed land-use maps for the Kokoda Interim Protection Zone (IPZ) and surrounding areas in the Owen Stanley Ranges and improved planning information for the island of New Britain. While the overall planning approach for these two regions will be similar, they represent differing levels of advancement, and thus scale. By working in these sites, the project will refine a repeatable process of progressively more detailed land-use planning to maximize the effectiveness of PAs across the country. In the Owen Stanley Ranges, the core protection zone (i.e., the IPZ) has been demarcated under the Kokoda Initiative, to conserve the Brown River catchment and the Kokoda Track. Therefore, work under this project Outcome will consolidate the information that has already been collected for the Kokoda IPZ and link this with enhanced spatial data to help baseline PES schemes and formalize the gazettal of a new CA. In addition, the project will further examine the ecological context of the IPZ in regards to biodiversity values in the Owen Stanley region, with a view to filling data gaps and modifying CA boundaries to maximize the protection of regional biodiversity using a compatible and effective PA approach. By contrast, the approach in New Britain will require an iterative process, starting with a large-scale land-use and biodiversity assessment of the whole island to which the planning tools from Outcome 1 will be applied to shortlist viable conservation targets according to the CARR and PES criteria. For the candidate sites, the project will establish at least one new CA to facilitate the protection of at least 500,000 ha of forest in New Britain. Together, these sites will pilot a science-based, transparent approach to establish more effective and sustainably-funded PAs in PNG. In addition, these criteria will be used to reassess the viability of existing WMAs and thus determine which may be gazetted as CAs within a sustainable national PA network.

Output 2.1.1: Development of a National Biodiversity Information System (NBIS) comprising spatial and non-spatial information on PNG's biodiversity necessary to support its effective protection and management

163. PNG currently lacks a database to measure or monitor biodiversity trends, therefore, the project will support DEC to design and implement a National Biodiversity Information System (NBIS). The NBIS will collate all available information sources of biodiversity in PNG from a range of stakeholders. The NBIS will be used to determine biodiversity baselines, develop habitat and species models, record cross-linkages, and codify standardized survey methods and meta-data formats for biodiversity information. The NBIS will also be used to identify data gaps and help determine DEC's national biodiversity survey priorities. The updated biodiversity database will be housed in DEC's GIS section, but data products will be disseminated to key Government agencies identified on Output 1.1.1 (e.g. Dept. National Planning and Monitoring, Dept. Lands and Physical Planning, PNG Forest Authority, Mineral Resources Authority, etc.) and key information will be made accessible on-line.

164. The NBIS will incorporate improved spatial data and land mapping, which will initially be undertaken for the Owen Stanleys and New Britain Conservation Areas (Outputs 2.1.3 and 2.1.4). The DEC, with assistance from the Australian Department of the Environment, Water, Heritage and the Arts (DEWHA) is currently developing spatial systems to support the anticipated land-use planning requirements for the Kokoda Initiative. These include high resolution digital elevation models (DEM) for use in deriving key terrain attributes such as slope, aspect, drainage and susceptibility to erosion; current land use maps; vegetation mapping; and, forest cover change analysis and biomass assessment maps.

165. The NBIS will incorporate support for maintenance and cataloging of nationally important biodiversity information. A high percentage of the plants and animals of PNG are known only from single collections and many groups require expert taxonomists to make accurate species identifications. It is essential that PNG maintain in-country collections of plant and animal specimen vouchers and work with national and international scientists to develop and curate these collections, incorporating the associated specimen data into the NBIS. The DEC has already signed an agreement with the Bishop Museum to undertake an initial review of existing

biodiversity data. Under this project, the DEC will develop cooperative agreements with the Forest Research Institute (FRI) and PNG National Museum to join together in the development of the National Biological Survey, to guide biodiversity planning. The NBIS will also sign cooperative agreements to facilitate the sharing and use of information from specimen collections with other organization active in the biodiversity research in PNG, including the University of Texas, University of Minnesota, James Cook University, Institute for Biological Research, Smithsonian Institute, Harvard University, University of PNG, UniTech, and conservation NGOs.

166. A core function of the NBIS will be to help identify protected areas and World Heritage priorities and help provide information for assessing the risk and viability of conservation interventions – that is, to help develop national biodiversity criteria. Because biodiversity and land-use mapping process will be ongoing, the NBIS should provide an updatable database that reflects new information and links to other sectors though Output 2.1.2. Therefore, the NBIS will also underpin an ongoing analysis and updating of a CARR compliant PA network in PNG.

Output 2.1.2: Development of a spatial and non-spatial socio economic database to support improved land-use and protected area decision making

167. The project will develop a consolidated database for socio-economic and land-use information to enable PAs to be assessed, not only for biodiversity values using the NBIS (Output 2.1.1), but also for long-term viability against population and development trends. Data layers for existing and potential development activities, such as for agricultural leases, mining and oil exploration leases, economic development corridor plans, and proposed/current forestry activities will be constructed through coordination with the relevant agencies identified in Output 1.1.1. Social and population data will be sourced from research institutions such as the National Research Institute, Universities and the National Statistics Bureau. Industry information will be collated from environmental plans and social mapping reports undertaken for development proposals. This process will constitute an ongoing extension of the cross-agency cooperation and data sharing model that has been started for the Kokoda Initiative; to date, DEC has compiled data on agriculture, forestry, mining, human population and the physical environment through the Kokoda National Task Force (see Output 2.1.3). The socio-economic database will incorporate a range information relevant to land-use and conservation planning, including:

i. land-use/ landform maps;
ii. registry of mapping of existing PAs;
iii. Conservation Area management plans;
iv. boundaries and information of proposed World Heritage Tentative Areas;
v. Forest Management Agreements and other forestry concession boundaries;
vi. agricultural project expansion/development plans;
vii. mining, oil and gas exploration lease and boundaries;
viii. National, Provincial and Local Level Government Development Plans (including proposed economic development corridors);
ix. roads and other infrastructure;
x. cadastral mapping of local governance and communities and/or language boundaries;
xi. locations of immediate needs for targeted biodiversity surveys;
xii. national census information;
xiii. schools, clinic and other services;
xiv. national income distribution information;
xv. social mapping reports from industry and development proposals;
xvi. resource and benefits sharing agreements;
xvii. maps/models of the REDDable areas within and CO_2 equivalent maps;
xviii. proposed REDD projects and project agreement outlines;
xix. tourism information (e.g. visitor numbers, revenues and details of tourist infrastructure).

Output 2.1.3: Identification and establishment of Owen Stanley Ranges Conservation Area, incorporating the Kokoda Interim Protected Area

168. Through the Kokoda Initiative, established in April 2008, the PNG Government has made good progress in defining a broad area of interest for the Initiative and identifying an Interim Protection Zone (IPZ). The IPZ represents the core area for possible legal protection of the Brown River Catchment area and most of the Kokoda Track; the area incorporates the Brown, Naoro and Goldie Rivers, which are the priority areas in Central Province for future development of hydro-power and water supply for Port Moresby. It also extends into Oro Province to provide a buffer zone which protects the historic values of the Kokoda Track and maintains its potential as PNG's premier tourist destination. First stage social mapping in this area has delineated the major language boundaries, clan groups and villages within the IPZ[49]; this information will be centralized in a socio-economic database (Output 2.1.2), to be used to establish the need assessments for services such as schools medical services, power and transport for villages. This information will be important in the design of benefits delivery packages through the envisaged PES schemes.

169. The current project will further develop and expand the planning work for the Kokoda Initiative by incorporating the improved spatial information (supported by Output 2.1.1), with emphasis on improving the forest quality mapping and developing regional habitat models and biodiversity assessments for the Owen Stanley region. By applying the centralized biodiversity information, a species distribution map will be produced for the Owen Stanley Ranges and CARR criteria will be applied to identify appropriate protection options to enhance the effectiveness of the IPZ boundaries (e.g. data will be collected to apply CARR criteria to the proposed 300,000 ha protected area for the Managalas Plateau which is the habitat of the Queen Alexandra's Birdwing butterfly). This will deliver two outcomes: (i) final delineation of the boundaries for the Conservation Area to maximize long-term national biodiversity benefits, including the possible World Heritage listing of the Owen Stanley Ranges CA; and, (ii) providing the baselines measurements essential for PES schemes (i.e. catchment integrity and forest cover for water quality and forest carbon).

170. Utilizing the whole-of-Government approach developed under Output 1.1.1, a final implementation strategy will be developed outlining the agreed CA boundaries. The on-the ground establishment of the CA will be undertaken in Outcome 3, which will establish the Conservation Area Management Committee (CAMC) and endorsed Management Plan (Outputs 3.1.1 and 3.1.2), identifying appropriate financing and service delivery mechanisms to support the CA (Output 3.1.3 - 3.2.3), and obtaining community agreement for the gazettal of the CAs.

171. Having implemented the required management structures and developed an endorsed management plan, the PNG Government will formally gazette the Owen Stanley Ranges CA under a Conservation and Environmental Protection Act.

Output 2.1.4: Identification and establishment of at least one Conservation Area in New Britain

172. Biodiversity and socio-economic data for New Britain will be collated by the DEC through implementation of Outputs 2.1.1 and 2.1.2. This information will be bolstered by the development of high-resolution land-cover imagery and digital elevation models for New Britain in collaboration with the Australian Cooperative Research Centre for Spatial Information (CRC-SI). A summary data report will be prepared and DEC will identify key stakeholders and form a National Taskforce or similar inter-agency committee. As was the case for the Kokoda Initiative, a range of data will be sought from agencies and institutions to develop a comprehensive spatial planning resource for New Britain comprising ecological values, watershed cover and run-off effects, land cover, land-use constraints, resource sector leases, cadastral boundaries, Provincial development plans, population data and economic baselines.

173. These data will be used to short-list CA candidate sites from the Nakanai and Whiteman Ranges and lowland forest landscapes, according to CARR criteria. Utilizing the findings outlined above, the project will support targeted biological and social surveys to fill identified data gaps to help inform decision making for the ranking of shortlisted conservation priority sites in New Britain. The final site selections will be determined by DEC/CEPA after liaison with representation of landowners, relevant industry (i.e. oil palm and forestry), government agencies and other experts. The selected areas must align with national biodiversity priorities and be feasible in terms of the degree of threat (and feasibility of mitigation), existing landowner relations, sources of funding support and the potential to deliver community services (see Outputs 1.5 and 1.6).

174. Utilizing the whole-of-Government approach developed under Output 1.1.1, a final implementation strategy will be developed outlining the agreed CA boundaries. The on-the ground establishment of the CA will be undertaken in Outcome 3, which will establish the CAMC and endorsed Management Plan (Outputs 3.1.1 and 3.1.2), identifying appropriate financing and service delivery mechanisms to support the CA (Output 3.1.3 - 3.2.3), and obtaining community agreement for the gazettal of the CAs. Therefore, this final stage will need to verify three points: (i) proof that land tenure issues have been resolved; (ii) statements from local community leaders welcoming cooperation with CA; and, (iii) proven capacity to manage and maintain any infrastructure or hardware required for the CA management.

175. Having implemented the required management structures and developed an endorsed management plan, the PNG Government will formally gazette at least one CA in New Britain under a Conservation and Environmental Protection Act.

Output 2.1.5: Conversion of Globally and/or Nationally significant Wildlife Management Areas to Conservation Areas

176. This output will be implemented through the legal requirements to be developed under Output 1.10 to assess the eligibility of existing PAs to be gazetted as CAs within a sustainable system of PAs. All Wildlife Management Areas (WMAs) will be assessed against a range of criteria (summarized in Outputs 1.4.1) to determine whether they contain national or internationally significant biodiversity or ecological values; whether they have reasonable likelihood to attract sustainable financing options; and, whether they maintain community support and management capacity. This management information will be collected from a number of sources, including WMA Committee minutes, financial reports, WMA Management Plans and external assessments of PA effectiveness, such as the recent RAPPAM. Because many WMAs are small (over half cover less than 1,000 ha - see Barrier 1.3), and no WMAs cover full catchment areas, the ecological viability of WMAs will also be analyzed against national CARR criteria by an expert working group. This will determine any WMAs that are deemed to be too small, too fragmented or too degraded to support viable species populations and/or maintain ecosystem integrity.

177. For WMAs that fail to meet the set biodiversity and management criteria, the national PA policy (Output 1.4.1) will call for a repeal of the WMA gazettal and its removal from the national register of PAs.

178. Any WMAs that meet the new ecological threshold criteria would undergo the management and funding assessment process for gazettal as a CA. It may be appropriate for some WMAs to retain existing resource management activities, this would be a decision for the landowning communities, but these areas would not be considered part of the national system of PAs.

OUTCOME 3: CONSERVATION AREA MANAGEMENT PLANNING AND PARTNERSHIP AGREEMENTS WITH COMMUNITIES

Output 3.1.1: Conservation Area Management Committee established with membership including landowners, Provincial and Local Level Governments and the DEC

179. In areas where the establishment of Conservation Areas has been agreed with stakeholders, a Conservation Area Management Committee (CAMC) will be formed, comprising key community leaders and LLG representative(s) with participation informed according to social mapping. The CAMC will comprise representatives from the DEC, Provincial and District Government, LLGs (form of landowner representation) and other 'landowner' representation, such as church groups, youth and women groups, etc. Generally, the CAMC should limit representation to a maximum of 12 to ensure functionality. Specific participation and dissemination of committee discussions should be informed by social mapping undertaken as part of the CA establishment process to ensure credible representation and feedback across communities. According to the regulations subject to the Act, the CAMC shall meet not less than once in every three months to manage the CA and make recommendations of applicable rules.

180. The CAMC will need a forum for landowner feedback; decisions must be advised through local institutions (Ward meetings, or landowner groups). To ensure credibility and proper representation, all landowner information should be up-to-date and if ILGs are involved they must be endorsed by community leaders in

accordance with the Land Groups Incorporation Act. These meetings should be recorded and noted by the CAMC so any issues can be addressed.

<u>Output 3.1.2</u>: Conservation Area Management Plan developed and endorsed by each CA Management Committee

181. With the assistance of DEC/CEPA officers, a Conservation Area Management Plan (CAMP) will be developed to ensure that maintenance of the biodiversity values and ecosystem services in accordance with the IUCN protection category (Output 1.4.1). The preparation of the management plan should contain:
    i. proof that land tenure issues have been resolved;
    ii. statements from local community leaders welcoming cooperation with CA;
    iii. maintenance plans for any infrastructure or hardware;
    iv. clear prioritized statement of CA objectives;
    v. sensible zoning plan for community activities (gardening, hunting, firewood, timber, etc.)
    vi. appropriate regulations controlling allowed and prohibited activities in CA and Plan for law enforcement and list of enforcement procedures to be employed;
    vii. appropriate outreach plan;
    viii. analysis of staff needs, including skills and training needs;
    ix. TOR for key staff positions;
    x. multi- year operational plan;
    xi. targets and verifiable indicators;
    xii. monitoring and self-evaluation plan; and,
    xiii. justified budget based on costed units.

182. The CAMPs developed for these pilot areas will serve as models for CAMP development in the rest of the national system.

<u>Output 3.1.3</u>: Funding for the Management Plans secured and being used to support implementation

183. As outlined in above in Output 3.1.2, the CAMP must include budget costs for CA implementation and maintenance. In addition, the CAMP should include opportunity cost agreements for income foregone by the abandonment of extractive resource projects (such as the gold mining and logging for the Owen Stanleys CA, and oil palm, mining and logging for the New Britain CA). These costing will require review by environment economic experts, with appropriate certification and quality checking and input into the spatial monitoring systems for land cover from Output 2.1.2.

184. Funding sources for the CAMP will be identified and in-principle agreements reached with service providers and/or service buyers. For the Owen Stanley CA, this will require signed agreements between PNG Power and Eda Ranu and CEPA for agreed payments into a dedicated environment services trust fund for watershed protection, together with income agreements from the Kokoda Track Authority (or a replacement structure) on landowner tourism payments. Additional funding will be secured from AusAid for service provision for health clinics, schools, and social mapping as part of the Kokoda initiative to establish the CA. Co-financing will also be secured to implement cultural and biological surveys to support World Heritage Listing of the CA, which is supported by the Australian Government.

185. For New Britain, this project will shortlist a number of candidate sites, develop draft management needs and identify potential funding sources. There is already in-principle agreement with the oil palm industry that funding will be provided for pilot biodiversity offset schemes, which will contribute to preservation of lowland forests. Co-financing will also be secured to support work to develop community conservation of watersheds to protect the marine environment. Once a CA has been finalized, funding will also be sought from a range of international conservation trust funds and European agencies which have expressed an interest in long-term support of a CA in this area and the possible World Heritage Listing of sites in New Britain.

<u>Output 3.2.1</u>: Service Delivery, Community Development and Business Development Action Plans developed and under implementation

186. The specific service needs required by communities to establish and maintain a CA will be informed by the social mapping undertaken during the implementation phase by the CA Taskforce. Specific service delivery mechanisms and management roles of the LLGs and Provincial Governments, together with associated budgets and identified finances must be detailed in the CAMP. These service delivery arrangements must be signed off by the service providers as a prerequisite for endorsement of the CAMP by the CAMC and acceptance by CEPA for submission of a CA gazettal to the Government. In many cases service providers will be external to Government (e.g. industry, NGOs, churches, etc.), so the management responsibilities of all levels of Government for required permitting, payments, contracting and so forth must be clearly articulated within the CAMP. All these tiers of Government are represented in the CAMC, so they must approve these management arrangements before endorsement of the CAMP. Therefore, the Provincial Governments will explicitly incorporate support for the CA in their development plans and strategies and LLGs will include support for services within the CA as part of their 5-year development planning.

187. The final budget agreements to fund service delivery plans will be endorsed by the CAMC after community meetings to ensure the understanding and acceptance of terms by all participants. The Service Delivery Action Plan (SDAP) will effectively be a codification of landowner obligations and the agreed payment and service delivery needs in an annual development plan according to a landowner Benefits Sharing Agreement. For each LLG, this will include in-kind provision and cash delivery mechanisms, the method and amounts of payments, service implementation for roads construction and/or maintenance, school or health services, etc. The monitoring systems and monitoring agents will also be detailed as will the required reporting needs; this may be a professional standards body, an NGO, or independent consultant. In terms of landowner obligations, the CAMP will include an agreed auditing system and a penalty system for any breaches of the agreed management obligations; this may include fines, withholding of payments or liability to court proceedings should the undertaking to implement ecosystem services agreements not be fulfilled satisfactorily according to monitoring agents.

188. Service delivery providers and management roles will vary; they may be provided by industry, civil society or Government authorities. For instance, in most cases road building and power supplies can only be supplied by private sector industries (i.e. PNG Power in the Owen Stanleys and New Britain Palm Oil Ltd. in New Britain). Provision of health services, education and building services would most effectively be implemented with linked projects or agencies, such as AusAid for the Kokoda Initiative, the EU Water and Sanitation Programme, NGOs or churches.

189. The SDAP will incorporate a community outreach and information programme to clarify the conservation benefits, inform community groups within the CAs of the implementation scheduling and report problems to the CAMC.

<u>Output 3.2.2</u>: Sustainable financing plans developed for each CA incorporating development opportunities from PES schemes, Government/donor funding and identified business development opportunities

190. Under this output, development and implementation of a suitable payments for ecosystem services (PES) model will be undertaken in the Brown River Catchment (Figure XX), and lowland forest areas of New Britain. This project will facilitate the detailed feasibility for the proposed new power and water agreements for Eda Ranu and PNG Power, to finalize a financing fund, a property rights framework and legal instruments for the valuation and benefit distribution of ecosystem services payments (e.g. carbon and water).

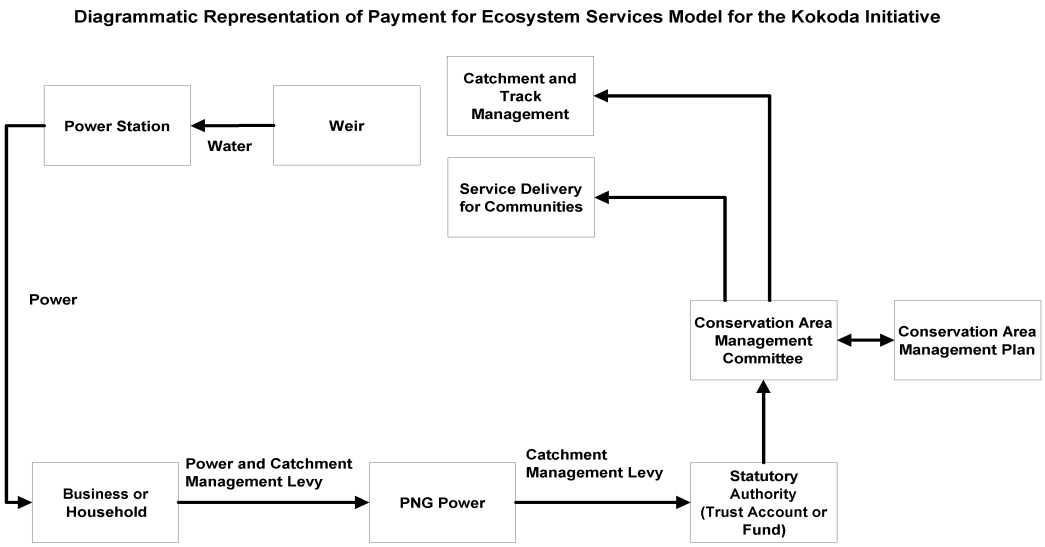

Figure 4: Diagrammatic representation of PES Model for the Kokoda Initiative

191. The CAMCs will be obliged to sustain watershed quality, forest cover, and/or minimize agricultural clearing of high value forests within the two CAs. The project will also pilot the implementation of community landowner Benefit Sharing Agreements (BSA)[58] to provide incentives for local communities to refrain from engaging in destructive forest resource extraction activities. These BSAs will involve legally binding contracts for set periods obliging communities to maintain ecosystems values to agreed standards, which will be objectively monitored and assessed by agents acceptable to both the CAMC and the service buyers. The services will be watershed protection, monitored via forest cover, water quality and quantity, and power production; or, biodiversity for oil palm producers and conservation donors, monitored by biodiversity surveys, measurement of forest cover and forest quality.

192. Tourism options would be identified and quantified for each CA. For the Owen Stanleys CA, the Kokoda revenue flows and trekking fees would be examined and the role of the Kokoda Track Authority (KTA) clarified under the CAMC. The KTA was established in 2005 to develop a coherent management regime for the Track region and a Sustainable Tourism Strategy. An agreed management framework will be implemented (either the existing KTA, or an agreed management regime under the CAMC), that will ensure that trekking fees are appropriately managed and disbursed. These data would be reviewed annually to reflect tourism volumes, and recommendation on service needs and marketing feedback and other revenue changes. For New Britain, the project will support a tourism options study with the Tourism Promotion Authority. This will examine the feasibility of marketing the Sublime Karsts World Heritage Areas and completing a needs assessment for transport, lodges and marketing. This could be linked with the reef to ridge conservation strategy being undertaken to value add to the existing diving tourism infrastructure in New Britain.

Output 3.2.3: Additional funding required to fully finance Management Plans identified and secured from domestic and/or external sources

193. In areas where revenues from PES, tourism receipts and other sustainable financing schemes are insufficient to fully finance the Management Plans, additional funding will be sourced from Government or external donor sources. The consolidation of national conservation priorities and implementation of more rigorous monitoring will also enable the DEC to coordinate funding from a range of conservation trust funds and environmental NGOs, which have expressed an interest in long-term support of CAs in regions such as Kokoda and New Britain. Management of these funds may be undertaken through a national Environment Trust Fund or other integrated financial management system.

[58] BSAs represent the agreed delivery of social and financial benefits to local communities in return for an active role in the protection of agreed conservation values and services as agreed under the Special Delivery Action Plan. These programmes would all be part of the overall CA Management Plan.

OUTCOME 4: CAPACITY DEVELOPMENT AND SUPPORT FOR IMPLEMENTATION OF CA MANAGEMENT PLANS

Output 4.1.1: Provincial and Local Level Government officers supporting service delivery for CAs, each with a three year capacity development plan linked to their individual performance agreements

194. This output will facilitate the incorporation of CAs within Provincial and Local Level Governments (LLG) development plans and strategies, to ensure zoning reflects conservation values and service delivery is supported within CAs. The DEC will arrange training, materials and funding for Provincial Planning and Administrative Officers and LLG officials to facilitate the mainstreaming of CA support as part of the planning process. This could include, linking CAMPs with budget allocations, needs assessments of CA communities, identifying local service providers and possible co-funding (Government or otherwise), prioritizing CA transport and communications within Provincial Development Plans, clarifying local permitting requirements, developing relevant local regulations and incentive systems, and identifying government roles within Landowner Development and Employment Benefits packages.

195. To ensure the proper mainstreaming of conservation planning developed under this project, a framework will be developed and institutionalized as part of the all-of Government planning process for CAs. The project will assist the DEC to apply this framework as additional guidelines requiring provincial and local governments to link funding and training support for protected areas with individual performance agreements of government officers to successfully complete training modules and develop updated sustainable planning strategies.

Output 4.1.2: Conservation Area Service Delivery Management arrangements agreed between all levels of Government and endorsed by each CA Management Committee

196. The combined package of services to be provided by various levels and institutions of Government under the CAMP will be coordinated through a set of Conservation Area Service Delivery management arrangements, to be developed as part of the CAMP and agreed amongst all the relevant stakeholders before being endorsed by each CA Management Committee. These management arrangements will underpin delivery of the Service Delivery Action Plans developed and agreed under output 3.2.1

Output 4.2.1: Business development, protected area management and ranger training courses developed for increasing the capacity of landowners to manage the Conservation Area and generate income from business activities linked to the CA

197. In order to implement CAMPs this output will deliver the community training and material needs identified under Outcome 3. The project will support the development and provision of tools and training courses to communities, and thus increase local capacity and services. Tools that will be developed and/or adopted include project budget training, business training, ranger training, computer and communications education, tour guide courses, and extension health and sanitation programmes. Specific tools will also be developed to enable communities to participate in the monitoring and reporting obligations for PES schemes (i.e. watershed and forest protection), including local forest surveillance and mapping techniques. Procedural manuals and methods will be developed and tested with communities based on their prior work on conservation issues, and the leadership they have demonstrated in supporting the CA.

198. Under this output, the DEC will work with government agencies to assist communities and local NGOs to identify viable business opportunities based on an assessment of the status and trends in biodiversity, the potential existing in the localities, requirements for facilities, capacity, promotion and marketing opportunities. These include tourism services at Kokoda and New Britain.

Output 4.3.1: Education, training courses and remote access training programmes on health, sanitation and family planning

199. The DEC will facilitate links between CAMCs with industry organizations and other appropriate sources to develop community management capacity and services delivery. For example, a major PNG corporation, Steamships Ltd., have committed to support community conservation and development through a computer training including the provision of remote internet training kiosks with specially developed training aids for health, hygiene family planning, and resource management. Similarly, the national telecommunications

company, Digicel, have committed to support rural education projects in PNG. In addition, services previously developed and successfully applied by conservation NGOs will be reviewed and repackaged for application in the CA project sites; these will include training programs on fish, chicken and rabbit farming (to reduce hunting pressures), eaglewood cultivation and agricultural extension services.

Output 4.4.1: Project Evaluation by the DEC at the end of the project involving consultation with all key project stakeholders at all levels

200. The DEC will perform ongoing assessments of milestones and monitoring and evaluation indicators according to the project monitoring and evaluation framework. Clear milestones will be the implementation of policy reviews, creation of cross-agency planning structures, endorsement of national standards, the gazettal of CA(s) and the successful implementation of PES projects with demonstrable funding flows supporting CAMPs and service delivery, and improved capacity in government officers.

201. At the end of the project, the DEC will evaluate the initial establishment of CAs, and subsequent implementation of CAMPs, with attention on results. Audits of performance of PAs should be based on published indicators and standards, for example, IUCN's "*Use of the IUCN Protected Area Management Categories in regional criteria and indicator processes for sustainable forest management*".

202. In terms of biodiversity benefits, the direct effects of the project are difficult to quantify in species terms, because PNG is lacking meaningful species mapping and trend analysis. Indeed one of the major benefits from the project is expected to be the development of the national biodiversity database (i.e. the NBIS). This will enable more meaningful conservation reporting indices against national and international obligations.

INDICATORS, RISKS AND ASSUMPTIONS

Risk	Rate	Mitigation strategy
Pressure for natural resource extraction and land-use conversion increases beyond the background rate	M	A common system-wide risk continues to be political pressure to allow mining, logging or forest conversion within critical biodiversity areas. During the proposed project, engagement with local communities will ensure that the link between local community development and sustainable management is maintained or enhanced. At the national level, policy advice and advocacy will continue as part of the broader process of policy engagement for incorporating conservation considerations into resource extraction decision-making. The adoption of a strategic environment assessment policy framework will enable DEC/CEPA to ensure that national development strategies, policies and programs, such as the Development Strategic Plan 2010-2030, incorporate the long-term economic value of biodiversity.
Agricultural Codes of Practice are ignored and/or inadequately enforced	M	There is a risk that some private companies selling into less demanding Asian markets will by-pass or ignore agricultural standards (as has occurred within the logging sector). At the national level improved inter-agency communications will enable coordinated planning and permitting, moreover, better, centralized, land-use and monitoring systems will enable easier identification and of offenders facilitate prosecution under the Environment Act. In addition, there is strong industry support to create and enforce these regulations from responsible operators who have long-term commitments to export certified oil palm in response to global market pressures, and they are keen to protect the national export palm oil reputation – this creates a direct legal and financial incentive scheme for enforcement.
Inability to implement benefits sharing agreements equitably with communities	M	The implementation of benefits flows to communities has been problematic in PNG due to corruption, poor oversight and limited institutional capacity. Safeguards will be incorporated under the proposed project to ensure independent controls and transparency in benefits sharing agreements (BSA). The Dept. of Conservation and Environment (DEC) is already investigating arrangements for a biodiversity trust fund, perhaps to be managed offshore, with a Board of Governance to include industry and civil society representation because industry and other donor support will be essential. The Conservation and Environmental Protection Authority (CEPA) structure will also facilitate the channeling of funds to conservation programs. In addition, a key criterion to be addressed within PES models will be transparent legal benefit sharing agreements linked to measureable Conservation Area (CA) management obligations. Moreover, the identification of feasible funding and on-the-ground service delivery agents (possibly industry) will

		be integral to the gazettal of a CA.
Local communities will be unable to incorporate biodiversity considerations into their subsistence agricultural and hunting practices	L	Subsistence agriculture and hunting are major threats to biodiversity loss in PNG, with a growing threat from population growth. However, this problem is exacerbated in areas that lack opportunities for education to stimulate out-migration. A major strategy of the proposed project will be to introduce alternative livelihood opportunities, improved communications and education opportunities for communities – this will promote outmigration and economic diversification into the largest growth areas in the service and resources sectors. These socio-economic issues will help inform CA site selections to ensure long-term viability. In addition, the introduction of protein supplement farming and improved agriculture, which have successfully reduced hunting pressures on threatened species in other projects in PNG, will be introduced where deemed appropriate.
Proposed CEPA structure is delayed or not achieved	L	The creation of a new Authority structure (CEPA) to replace the DEC is important to the project approach; this will streamline PA policy and help implement PES schemes and conservation funding mechanisms. There is always a political risk that the establishment of CEPA could be delayed or opposed. However, the Environmentally Sustainable Economic Growth (ESEG) Policy Initiative has already been approved by PNG Govt., so even in the event of delay of the implementation of the CEPA structure, DEC is committed to implement improved government and stakeholder engagement strategies through ESEG. The enlarged Government support for DEC/CEPA is already evident in the improved budget allowances and funding support for the Kokoda Initiative and the growing demand from large-scale development projects to mainstream and outsource EIA and environmental reporting processes to meet international standards.
Long-term climate change leads to changes in the biodiversity composition and resource value of critical biodiversity areas, reducing the value of conservation vs. exploitation	L	For the first time in PNG, the latest PoWPA gap analysis for biodiversity priority setting, included criteria on the possible effects of climate change – existing key biodiversity areas may eventually decline in conservation value and their use may have to be reconsidered; equally, other areas may become critical to conservation. Such climate change impacts will be refined during this project. This dovetails with the ESEG initiative to identify where the risks of irreversible and severe damage to the natural resources base of PNG are occurring or likely to be occurring in the future. This information will be used to develop strategies for preventing irreversible damage and minimizing the risk of severe damage of the renewable resources and livelihoods. Over the last year PNG has started to develop a Climate Compatible Development Strategy in recognition of climate change effects and the importance of natural buffer systems for climate mitigation (i.e. headwater forests, mangroves, etc.) – this would also inform programs such as biodiversity offsetting and carbon forestry. The all-of-Government planning approach supported by this project will help strengthen the capacities of sectoral and local governance systems to clearly understand and assess the trade-offs between conservation and resource extraction.

INCREMENTAL REASONING AND EXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS

203. The project addresses the three main barriers to developing an effective government supported community-managed conservation system in PNG: (i) inadequate legal and policy structures, and a lack of national biodiversity priorities, to allow the planning, establishment and funding of sustainable protected areas; (ii) deficient biodiversity information and data analysis to facilitate conservation needs planning and develop baseline for environmental services; and, (iii) inadequate economic incentives and variable local capacities to support community conservation areas. These barriers combine to impede the development of effective conservation interventions in PNG. Without all-of-Government support, conservation will remain subservient to development interests and piecemeal conservation interventions will struggle to attract long-term funding and management support. However, the current PA policy framework gives the Government very little incentive – or ability – to establish PAs or build capacity for community-managed CAs. This inadequate policy and legal framework also inhibits PNG's ability to establish credible PES models to finance conservation. Furthermore, even with the prospect of increased funding for conservation, PNG is unable to set credible biodiversity

priorities or set measurable PES baselines in the absence of centralized ecological information and analysis. Given that all forestlands in PNG are community-owned it is essential that forest communities receive economic incentives for conservation. Until these interlinked barriers are overcome, PNG will struggle to coordinate actions to assess, protect and monitor its extraordinarily important biodiversity values within a national network of sustainable PAs.

204. Inadequate legal and policy structures, and a lack of national biodiversity priorities, to allow the planning, establishment and funding of sustainable protected areas: In the baseline scenario, there will be, at best, slow progress in the implementation of policies mandating government agencies and industry to integrate biodiversity concerns into their planning. Sectoral agencies, particularly DAL, PNGFA and MRA will continue to formulate policies, plans and programs driven mainly by production objectives without adequate assessment of their long-terms impacts (and costs) on biodiversity, forest cover or water quality. The result is uncoordinated policy and program implementation which impinges on important biodiversity habitats and critical ecosystem functions, such as watershed integrity, flood mitigation and fisheries health.

205. Ecologically-sustainable practices will not be pursued in the absence of a clear policy and legislation that promotes the assessment of ecological significance and identifies possible mitigation strategies including the establishment/support of PAs and ecological landscape management. Without improved land-use planning, the inappropriate clearing of high value conservation forests, contamination of watersheds and development of ill-considered road networks into intact forest landscapes will continue or even increase. Voluntary regulatory standards, such as RSPO, for sustainable agricultural production will be less frequently adopted as logging companies shift focus from less profitable primary logging to land conversion for palm oil and biofuel export to non-discriminating markets; this results in permanent loss of forest and degradation/loss of biodiversity corridors, leading to long-term reductions of landowner benefits and food security. The economic potential of engaging in best practice agriculture and the possibility of implementing biodiversity offset schemes will not be realized, instead PNG will continue to rely solely on extractive resources and destructive plantation expansion. Inevitably, the continued unplanned clearing of forest patches will increase fragmentation, reducing the ecological and climatic resilience of forests, and leaving ecosystems more susceptible to further degradation.

206. The establishment of WMAs by communities in the absence of any integrated land-use planning will continue to be isolated from the broader socio-economic and landscape issues within Provinces and Districts, thus resulting in serious potential land-use conflicts. The poor communications between the DAL, MRA, PNGFA and local communities, will see continued conflicts between proposed WMA boundaries with mining and logging leases resulting in continued lack of enthusiasm from the DEC to invest limited resources in support of WMAs that are unlikely to be ecologically or economically viable. Inevitably the ongoing degradation of the WMA habitats through logging and land conversion will accelerate as communities become increasingly susceptible to fast cash offers from resource industries who realize that WMAs offer little or no legal impediment to resource extraction.

207. Opaque and/or conflicting agency roles in terms of land-cover monitoring and REDD mechanisms between DEC, PNGFA and the Office for Climate Change and Development (OCCD), will see continued institutional and legal uncertainty hampering efforts to develop a coordinated and credible national forest monitoring system that can be adapted to meet international standards for future REDD projects. This legislative confusion will see the opportunity for the development of a credible national REDD accounting system lost as short-term speculators continue to advocate dubious fast-money voluntary projects that take advantage of policy vacuum and do nothing to reduce threats to forest clearing or address national carbon leakage issues. Moreover, policies regarding investments in biodiversity and ecosystem services business will not be in place, thus this sector will continue to be seen as an expense, rather than being able to generate jobs and sustainable income. The potential of the private sector, which can command significant resources, to contribute to sustainability will not be harnessed.

208. Enforcement of policies and rules on illegal clearing and contamination of waterways and oceans will continue to be weak, in the absence of clearly mandated standards of minimum biodiversity impacts nested within a consolidated legal framework. Failure to improve the public service administrative capacity to outsource aspects of environmental assessments to external experts will make credible and timely EIA and conservation needs planning increasingly difficult. The result is disjointed resource governance across numerous agencies with limited capacity, leading to weak implementation of regulations and greater opportunities for malfeasance, thus contributing to further unabated forest clearing and environmental degradation.

209. Deficient biodiversity information and data analysis to facilitate conservation needs planning and develop baseline for environmental services: In the absence of a national system for data collection and knowledge management, policy formulation and monitoring of biodiversity impacts of national sectoral policies will not be scientifically-informed. Conservation planners will not have access to up-to-date information on the status of biodiversity, meaning the PA system will continue to fail to achieve any strategic coverage of key ecosystems or protect the most significant biodiversity values. In addition, the lack of any nationally agreed criteria on ecological significance or viability, will hinder efforts to concentrate resources on priority conservation targets. Inevitably the ineffectiveness of the PA system will throw doubt on PNG's ability and/or intention to fulfill its national and international conservation commitments.

210. The inability to identify and declare meaningful PAs, will see a continuation of the ad hoc conservation approach by NGOs, who are attempting to meet short to medium-term donor expectations to implement rapid on-the-ground conservation, and business, who are seeking to implement corporate social responsibility programs. At the local level some NGO's conservation and development projects will be marginally successful where local communities are particularly receptive to sustainable approaches, and donor funding can be elicited, but these gains risk being lost if and when local conditions change or political planning agendas are realigned.

211. Conservation donors will become increasingly frustrated if they cannot measure conservation impacts and adjust programs and/or funding accordingly. In the absence of sufficient policies at the national level the efforts of NGOs and local communities in mainstreaming conservation will be sporadic, and not linked to established systems by the national agencies. Worse, attempts to develop parallel environmental governance risk further disfranchising national and other levels of Government, making up-scaling impossible. The scale of community conservation projects developed will not be enough to generate a critical mass to encourage conservation models in other communities. Without the policy support of the CEPA, replication is expected to be slow, and will depend only on the personal agenda and funding commitments of local and international NGOs and businesses.

212. Conservation advocacy will continue to be weak and unconvincing to industry or government without sufficient data as evidence to support the arguments for more biodiversity sensitive policies and programs. Provincial and District Planning Officers will not have access to ecological information to inform their development strategies and CA Committees will not have access to data required to better plan and analyze the biodiversity impact of their local management plans to meet national and international reporting standards.

213. Business and community support to biodiversity-friendly agricultural programs and investments will be weak, due to lack of technical expertise, and lack of support from the national agencies. The role of District and Local Level Governments and communities in regulation and enforcement of policies on ecosystem service management and PES will not be well understood, and their participation will not be optimized. These same data will not be available to set baselines and enable credible measurability for potential PES projects, such as watershed protection and biodiversity offsets. In the absence of support, dissemination and replication of best practices among Provincial and District Governments will not be systematic, and will depend on the individual efforts of local officials.

214. Inadequate economic incentives and variable local capacities to support community conservation areas: In the baseline case, local level initiatives through the work of various conservation NGOs, communities and some local governments will continue. However, the lack of sustainable funding support and service delivery to support community conservation will be difficult or impossible to maintain. In cases where funding has been acquired to support conservation, delivery of benefits will continue to be dependent upon the caprice of service delivery agents, which will often be industry, NGOs or church groups. Landowner conflicts within WMAs, such as those experienced in seminal voluntary REDD projects, would also increase in the absence of an agreed national BSA framework that incorporates minimum landowner representative bodies.

215. Donors or and PES buyers will remain reluctant to invest in PAs that lack government support or legal protection mechanisms[59]. Thus, donor support is likely to remain haphazard and short-term, making the development of a sustainable and representative PA system very problematic. In an environment of limited

[59] For example, WWF Switzerland is considering a multimillion dollar Tropical Forest Adaptation and Development Fund (TRAFO) comprising a sinking fund to finance 'conservation concessions' and a below market rate return 'fund' aimed at enhancing local incomes and resilience to climate change (microcredits). PNG is seen as a possible target area for TRAFO; however, WWF are waiting until there are better legal frameworks for the effective implementation of PAs and PES mechanisms.

support and incentives for conservation initiatives, there will be limited involvement of local communities or private sector in promoting biodiversity-friendly agricultural practices and business opportunities in PAs. Local communities engaged in destructive activities will not be encouraged to shift to sustainable forms of economic activities in the absence of alternative livelihoods and financing mechanisms to compensate their conservation efforts. In addition, there will be an ongoing failure of those communities, who have earlier committed to community conservation through WMAs on the promises of conservation advocates, to reap any economic or service benefits. These communities will not only be susceptible to alternate destructive land-uses which provide fast returns, but also suspicious of future conservation benefits offered from opportunities such as PES and REDD.

216. Even with identified funding sources, CA Committees will struggle to integrate biodiversity priorities in their own workplans in the absence of policy support and technical expertise from national agencies. Sporadic support may be available from NGOs, but without the provision of essential tools, CA Committees will be unable to independently monitor or report management outcomes and/or effectiveness, threatening donor support. Land-use conflicts in WMAs and surrounding landscapes would continue, if not escalate, in the absence of clear examples of how solutions can be achieved through the application of certain tools and access to expert advice.

217. In summary, the baseline scenario suggests that progress achieved through previous projects will not succeed in conserving globally significant biodiversity effectively due to gaps and inadequacies in the existing governance system. The site-level gains that have been achieved through the efforts of numerous conservation actors will not be sustained, as pressure from population growth and economic development erodes the flagging community commitment to conservation.

218. In the absence of key interventions, the scenario is for habitat fragmentation to continue, thus threatening species assemblages, watershed integrity and the long term resilience of the forest landscapes. Given the above, the likely result is that globally significant biodiversity resources in PNG will continue to be lost – many before they are even discovered. Because of their relative intactness and the diverse topography, the forests of New Guinea are generally considered to be the most likely rainforests to survive climate change impacts into the future[5], but this resilience will be compromised by increasing fragmentation. The natural habitats within WMAs and associated ecosystems will be increasingly degraded, and runoff from mining, agriculture and logging will threaten globally significant waterways and reef systems, which are already under stress from climate change. The result is permanent loss and/or degradation of some of the world's most important biodiversity and natural systems.

219. The alternative scenario with GEF support will ensure that national land-use planning and development strategies are consistent with the objective of conserving representative examples of species assemblages and maintaining ecosystem functions. The alternative scenario will be achieved by developing transparent conservation criteria and revamping PA policy, so that conservation areas are mainstreamed into the government planning process and community-based conservation areas receive sufficient, on-going financial support. These improved systems will enable greater support of communities to manage their forest-lands in ways that enhance national and global conservation priorities. This support will include greater legal protection for PAs, to encourage donor support as well as the development of PES schemes to fund services for communities that manage conservation areas effectively.

220. The proposed alternative scenario will ensure that the numerous individual conservation efforts being made by all stakeholders are integrated into a comprehensive strategy that addresses critical systemic barriers. By coordinating the efforts and resources of a coalition of partners and targeting these at specific barriers, the alternative scenario will ensure that the scarce resources available for biodiversity conservation are used most effectively. By removing barriers to sustainable use within local governance and demonstrating the integration of conservation and sustainable development on-the-ground, the alternative scenario unleashes the economic and political resources of key governance actors in favour of conservation, thereby significantly increasing the impact of the GEF investment.

221. By the end of the project, conservation efforts in PNG will have been strengthened through the development of systemic and institutional capacities to mainstream biodiversity considerations into the policies, plans and programs of key sectors, particularly, in mining, agriculture and forestry. This will include the implementation of mandatory industry codes of practice to promote sustainable land-use and protection of high biodiversity values. These standards will be measureable, enabling a transparent mechanism to monitor industry practices against

international standards. At the local levels, community-management of CAs will be strengthened through improved community development planning and, most importantly, delivery of services and benefits stemming from effective implementation of conservation management plans. These improved capacities, in conjunction with other actions directed at addressing the threats, should remove degradation and habitat fragmentation pressures in at least 1,000,000 hectares of CAs and surrounding landscapes.

222. The development and application of tools that promote integration of biodiversity considerations in local development planning will help approximately 4 Provincial and 12 District Governments to assess their development plans and projects against their possible impacts on biodiversity. Promotion of integrated landscape development planning is also expected to result in effective natural resource regulation in at least three jointly managed resources. The project is designed to help facilitate up-scaling and build a foundation for increased investment in conservation from the resource industry, which is expanding rapidly in PNG. Moreover, the integrated planning model is designed to ensure the lessons learned by conservation partners feed back into the development of policies and systems at the national level.

223. The direct benefit of GEF will be reduction in threats to biodiversity across 1,000,000 ha of landscapes in four globally outstanding (G200) Ecoregions; namely, the South East Papua Rainforest, Central Range Montane, New Britain-New Island Lowland Rainforest, and Montane Rainforest Ecoregions. The impacts include no net loss of natural habitats and removal of threats to conservation by gazettal of new conservation areas and upgrading of the legal protection of viable WMAs. Initially, the project aims to remove mining and logging threats to watersheds, and reduce forest fragmentation and maintain key biodiversity corridors in areas subject to rapid conversion to oil palm.

224. Two of the areas affected by this proposal were placed on the World Heritage Tentative List in 2006. The Owen Stanley Ranges were listed due to their high biodiversity and heritage values; Nakanai in New Britain was listed as part of the Sublime Karsts of Papua New Guinea, due to its exceptional karst systems and intact forest ecosystems. The Owen Stanley's have one of the richest floras of any mountain range in New Guinea with more than 4000 plant species including many local endemics. The region's forests provide habitat for endemic birds of paradise, bowerbirds, finches, wallabies, rats and numerous species of butterflies (including the world's largest, the Queen Alexandra's Birdwing) and aquatic insects including a number of endangered or critically endangered species.

225. Global benefits from the above outcomes will translate into improved viability of species assemblages found in these landscapes. In species terms, it is virtually impossible to speculate on accurate figures. For example, just last year over 200 new species were found in the New Britain project area alone. Moreover, relatively few species have been assessed for threatened species status – however, the IUCN considered 455 species as endangered in PNG; this constitutes less 2% of known species, but 20% of assessed species. A further 14% (314 species) of assessed species are listed as data deficient (see Table X). Because of the paucity of accurate species information one of the key outcomes of this project will be the development of better information systems and strategic surveys to more accurately identify and track species trends in PNG.

SUSTAINABILITY

226. The project is designed to help the Government of PNG develop a new framework for establishing and managing a national system of protected areas. The sustainability of this new national system will be entirely dependent on the degree to which the Government continues to support and underwrite the management of this system, and the framework of service provision for landowners which is linked to it. Government support for this new framework has been expressed in two forms; firstly through the far-reaching structural reforms being proposed, including the creation of a new Conservation and Environment Protection Agency to oversee this national system, and secondly through the scale of financial support the Government is mobilizing to underwrite this initiative, both from within Government budgets and from key external partners. This initiative is, in financial terms, the largest conservation initiative ever implemented by the Government of PNG. The degree of political and financial commitment being shown by the Government clearly demonstrates the intention to sustain and expand the proposed PA system in years to come.

REPLICABILITY

227. The model for community-based conservation areas linked to a clear framework of reciprocal responsibilities and service delivery which the project is developing can and will be replicated across Papua New Guinea through the new national PA system. Funding for establishment of new PAs, and to underwrite the associated community service delivery, will have to be sourced from budgetary and non-budgetary sources. However on a per-hectare basis additional Conservation Areas under the proposed framework will not require as large an investment as the two CAs being developed under this project, since the project will have developed systems, capacities and infrastructure within Government which can be utilized for the creation of replication sites.

III. PROJECT RESULTS FRAMEWORK

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: UNCP Outcome 3.1 /UNDP CPD Outcome 10: *By 2012, rural communities in selected provinces of each region use improved sustainable livelihood practices*					
Country Programme Outcome Indicators:					
Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. Mainstreaming environment and energy OR 2. Catalyzing environmental finance OR 3. Promote climate change adaptation OR 4. Expanding access to environmental and energy services for the poor.					
Applicable GEF Strategic Objective and Program:					
Applicable GEF Expected Outcomes:					
Applicable GEF Outcome Indicators:					
	Indicator	Baseline	Targets//End of Project	Source of verification	Risks and Assumptions
Project Objective[60] Develop effective natural resource management and financing systems for community conservation areas	National policy and regulatory framework providing comprehensive and consistent support for CCAs	No specific legislative framework for CCAs. Protected Areas are being established under a range of secondary legislation with limited and inconsistent governmental support	(1) A comprehensive and integrated policy and regulatory framework for CCAs is enacted by end of year 2, (2) supported by a coordinated whole-of-Government decision-making mechanism operational by year 3	Legislation enacted for CCAs, regulatory or operational enactments defining role and responsibilities of the decision-making mechanism, and documentation of decision-making mechanism in operation.	(Relevant to achieving Project Goal) Financing to maintain the conservation areas will continue to receive national and international support
	Area protected under Community Conservation Areas	None at present	1,000,000 hectares protected by end of project	Gazettement/ establishment notices and spatial monitoring.	State of Papua New Guinea continues to support PAs by all means against biodiversity threats
	Quality of biodiversity management of CCAs as measured by Management Effectiveness Tracking Tool	To be assessed for individual CCAs upon establishment	CCAs show sustained improvement in METT scores over the duration of the project, beginning from respective year of CCA establishment.	METT reports provided by CAMCs	External threats and pressures (e.g. climate change impacts, encroachment) do not adversely affect the status of biodiversity resources within CCAs.
	Landowner commitment to CCAs	Landowner commitment to existing forms of PAs (e.g. WMAs) is often limited, as demonstrated by level of contribution to WMA management.	Landowner commitment sufficient to ensure effective management and conservation of CCAs as measured at end-project.	Successful implementation of PA management plans and delivery of service agreements, level of participation in CAMCs and other consultative mechanisms.	Benefits of alternative land uses (e.g. agriculture, mining) do not drastically increase after agreement to set up CCAs is achieved.
	Funding for conservation and management of CCAs is sufficient to underwrite core activities, and is sustainable over time	To be established for each CCA during planning, using the PA Financing Scorecard	By end-project each established CCA has demonstrated access to all funding required for core management and conservation activities for at least two consecutive years.	PA Financing Scorecards to be completed during planning of each CCA, and subsequently on an annual basis.	Government commitment to provide revenue support to CCAs is sustained.
Outcome 1: National enabling environment for a community-based sustainable national system of protected areas (PAs) containing globally and nationally significant biodiversity					
Project Outcome	Indicator	Baseline	Targets//End of Project	Source of verification	Risks and Assumptions
1.1 Improved whole-of-Government systems and processes for making land-use decisions to avoid degradation and conversion	Number and severity of instances in which CCAs are negatively affected by landuse or development decisions made by	Existing PAs (e.g. WMAs) regularly suffering negative impact from agricultural conversion, mining impacts, etc.	In the final year of the project, no established CCA suffers any direct impact due to landuse/ conversion decisions, or indirect impact due to adjacent or upstream development activity.	Annual reports of CAMCs, project monitoring of supported CCAs.	Government does not make any direct and deliberate (as opposed to indirect and inadvertent) decisions to sanction development activities which

[60] *Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR*

of PAs.	Government agencies				degrade CCAs.
1.2. National economic development plans and sectoral plans incorporate and provide support for the objective of developing a Sustainable National System of PAs.	Explicit recognition of the role and contribution of the protected area system to national development strategies, as described in key national policy documents	No recognition of the PA system in Medium-Term Development Strategy or related planning documents. Environmentally-Sustainable Economic Growth (ESEG) Policy framework under development but not yet agreed or operationalized.	By year 3, PNG's Medium-Term Development Strategy and related planning documents explicitly recognize the development of a sustainable National PA System as a development priority, under the ESEG framework.	Audit of relevant policy documents upon publication, and reported in the PIR and MTE/FE.	Inclusion of references to the National PA system on paper translate into tangible policy and financial support on the ground.
1.3. Integrated policy framework to support mainstreaming of environment conservation issues within whole-of-Government and sectoral decision making processes developed and being implemented.	National policy framework explicitly and comprehensively addresses key conservation policy requirements, including e.g. a framework for assessing and mitigating environmental impacts of development, sustainability policies and criteria for agriculture and sustainable financing flows for Protected Areas.	Comprehensive policy frameworks not yet established for EIAs, sustainable agriculture or protected area financing.	By year 3, policy frameworks for (i)SEAs, (ii)Sustainable agriculture and (iii) PA Financing have been developed, endorsed by CEPA and submitted to the Government for adoption	Audit of relevant policy frameworks upon submission, documentation of approval and reports in the PIR and MTE/FE	Existing Government commitment to adopt these policy frameworks is sustained
1.4. Integrated legal framework to ensure effective planning and regulation of development and conservation activities	Integration of the three existing Protected Areas Acts into a single legal framework for protected area establishment and management under the new Conservation and Environment Protection Act (see 3.2.1 below) with Conservation Areas providing the legal basis for establishing the Sustainable National System of PAs. The new legal arrangements for protected areas to incorporate the requirement for Benefit Sharing Agreements (BSAs).	Fragmented legislation with low power for PA management and no capacity to manage benefit sharing arrangements	A single integrated Act providing for a statutory authority with increased scope for PA management including benefit sharing arrangements	Audit of resultant legislation	Parliamentary support for legislative change
	Integration of the six Acts administered by the Department of Environment and Conservation to create a single fully integrated Conservation and Environment Protection Act for PNG.	Six separate legislative acts from different periods of history, not integrated	Integrated CEPA Act to reconcile inconsistencies in current body of law, and introduce reforms	Audit of documentation	Parliamentary support for an integrated Act
1.5. Integrated policy framework to support sustainable financing of PAs developed and evidence of success through increased funds for PA	Level of Government funding available for PA establishment and management.	Annual funding averages less than USD1 million at start of project.	By end-project, available funding meets minimum requirement for gazetted CAs, as measured by the PA Financing Scorecard	PA Financing Scorecard, annual DEC/CEPA reporting	Political commitment to support the national PA system is translated into sustained financial support.

establishment and management.					
1.6. Strengthened institutional and technical capacities in relevant Government agencies, linked to a framework of national core competencies to support effective conservation planning and service delivery in PAs	Level of institutional and technical capacity in CEPA (once established) and other relevant Government agencies as measured using a Capacity Scorecard or similar approach	To be established upon finalization of the Government restructuring	By end-project, CEPA institutional and technical capacity scores are rated as 'Sufficient' or 'Adequate' across all key competencies. Institutional scores for other relevant agencies (including local governments) show increases on average between project mid-term and end-project assessments	Institutional Capacity Scorecard to be established during creation of CEPA.	Sufficient level of cooperation obtained from other relevant agencies.
Outcome 2: Community-managed Conservation Areas identified and established in the Owen Stanley Range and New Britain					
Project Outcome	Indicator	Baseline	Targets//End of Project	Source of verification	Risks and Assumptions
2.1 At least 1,000,000 hectares added to the national system of community-managed protected areas through the establishment of new financially and ecologically viable Conservation Areas and/or conversion of existing Wildlife Management Areas to Conservation Areas	Hectares of new Protected Areas established under the new community conservation area framework	None	By year 5 at least 1,000,000 hectares added	Gazettement notices or similar	Obtaining community/ landowner support for establishment of CCAs does not take significant longer than envisaged in the project strategy.
Outcome 3: Conservation Area Management Planning and Partnership Agreements with Communities					
Project Outcome	Indicator	Baseline	Targets//End of Project	Source of verification	Risks and Assumptions
3.1 Conservation Areas effectively managed according to the requirements of their respective Management Plans, with 20% increase in METT scores over the project lifetime.	Increase in METT scores for each established CA.	Individual METT scores to be calculated during establishment of the CAs	By end-project, METT scores for each CA increase by at least 20% over initial baseline	METT scorecards	CAs are established at least 3 years before project end, to allow sufficient time to demonstrate management improvements.
3.2. Service delivery, community development and economic development outcomes as specified in the Partnership Agreement being achieved.	Compliance with commitments stipulated in the Partnership Agreements	Agreements to be established during creation of CAs	Within 2 years of CA establishment or by end-project (whichever is sooner) CAMCs report satisfactory compliance with service delivery, community development and economic development outcomes as specified in the respective Partnership Agreements.	CAMC annual reports, with supplementary CAMC interviews at end-project if required	Changes in external factors, e.g. fiscal position of Provincial Governments and LLGs, does not adversely affect service delivery.
Outcome 4: Capacity development and support for implementation of CA Management Plans					
Project Outcome	Indicator	Baseline	Targets//End of Project	Source of verification	Risks and Assumptions
4.1 Capacity development and support for Conservation Areas stakeholders to enhance project implementation and delivery of project outputs	Institutional and individual/ technical capacities of Provincial and local level governments to ensure effective delivery of key project outputs.	Preliminary capacity assessment during PPG indicates institutional and individual/ technical capacities are low or extremely low, at 24.4% and 33.3% respectively. Detailed capacity assessments for each participating Provincial/ local government entity to be conducted during establishment of CAs	Provincial and local level government (LLG) institutional and technical capacities to support establishment and management of CAs increases by at least 20% two years after establishment of each CA. Overall institutional capacity increases to at least 56.4%, and individual capacity increases to 50%	Capacity assessments by CEPA as part of CA establishment/ implementation.	Sufficient cooperation obtained from Provincial and local level governments for capacity development programmes

4.2. Capacity development plans for landowners delivering greater capacity and improved outcomes from project activities	Capacity of landowners to manage conservation areas and associated livelihoods/ service delivery activities	Preliminary overall assessment during PPG indicated non-existent to low capacities. Specific capacity baselines to be established for each CA.	Landowner groups have sufficient capacity to implement livelihood and service delivery activities.	Proxy indicator: number of livelihood/ business development initiatives established, and progress in implementation of management and monitoring systems for CAs	Proxy indicator approach assumes other non-capacity barriers can be identified and addressed if required.
4.3. Linking of livelihood, health and population issues with CA resource management	Increased access to social services (health, sanitation, education) for landowner communities participating in CAs.	Basic social services being provided by LLGs and/or private industry (e.g. plantation and logging companies) in West New Britain. Social service provision in Kokoda being strengthened through the Kokoda Track initiative but still limited to areas around key Track sites.	All communities/ landowner groups involved in functioning community conservation areas enjoy documented improvement in at least two social service areas.	CAMC reports, final project evaluation.	Existing commitments to provide social service support from partners such as Steamships Ltd. And Digicel are maintained, and other partnerships can be established where needed.
4.4. Learned lessons from the conservation management systems developed under the project are incorporated into policy and regulations, and help improve management of the national PA system	Improvement in policy and regulatory structures for the national PA system, and continued increase in management capacity.	To be established as part of CEPA structure	Project demonstrates tangible and quantifiable increase in systemic, institutional and technical capacities by end-project.	CEPA performance audit system for community conservation	No external risk factors identified Project management to ensure commitment to participatory evaluation, and debrief to key stakeholders

IV. TOTAL BUDGET AND WORKPLAN

Award ID:	**0058393**	Project ID:	**00072522**
Award Title:	**Community-based Forest and Coastal Conservation and Resource Management Project**		
Business Unit:	**PNG10**		
Project Title:	**Community-based Forest and Coastal Conservation and Resource Management Project in Papua New Guinea**		
PIMS #:	**3936**		
Implementing Partner:	**Department of Environment and Conservation**		

GEF Outcome/ Atlas Activity	Responsible Party	Source of Funds	Atlas Budget Account Code	Input	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Amount Year 7 (USD)	Total (USD)	See Budget Note:
OUTCOME 1 :			**71200**	**International Consultant**	**200,000**	**200,000**	**100,000**	**100,000**	**0**	**75,000**	**0**	675,000	**1**
			71300	**Local consultant**	**50,000**	**50,000**	**0**	**75,000**	**0**	**75,000**	**0**	250,000	**2**
			72100	**Contractual Services-Firms, NGOs, Academia**		**75,000**	**75,000**	**25,000**	**25,000**	**0**	**25,000**	225,000	**3**
			71600	**Travel**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**20,000**	110,000	**4**
			72200	**Equipment and Furniture**	**20,000**	**15,000**	**20,000**	**20,000**	**15,000**	**0**	**10,000**	100,000	**5**
			74200	**Printing and Publications**	**3,000**	**5,000**	**7,000**	**5,000**	**5,000**	**5,000**	**10,000**	40,000	**6**
			73300	**Rental & Maintenance of other equipment**	**6,000**	**6,000**	**6,000**	**5,000**	**5,000**	**5,000**	**5,000**	38,000	**7**
			75700	**Training Workshops**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	210,000	**8**

			72500	**Supplies**	**5,000**	**5,000**	**5,000**	**3,000**	**3,000**	**5,000**	**5,000**	31,000	**9**
			74500	**Miscellaneous**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	21,000	**10**
	SUBTOTAL: OUTCOME 1				332,000	404,000	261,000	281,000	101,000	213,000	108,000	1,700,000	
Outcome 2:			**71300**	**Local consultant**	-	**50,000**	**50,000**	**50,000**	**50,000**	**30,000**	**30,000**	260,000	**11**
			71400	**Contractual Services-Individual**	-	-	**130,000**	**130,000**	**130,000**	**130,000**	**130,000**	650,000	**12**
			72100	**Contract Services-Firm, NGOs or academia**	-	**100,000**	**100,000**	**125,000**	**100,000**	**100,000**	**100,000**	625,000	**13**
			71600	**Travel**	-	**12,000**	**12,000**	**14,000**	**15,000**	**15,000**	**15,000**	83,000	**14**
			72200	**Equipment & Furniture**	-	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	300,000	**15**
			75700	**Training workshops**	-	**10,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	85,000	**16**
			75700	**International Training**	-	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**10,000**	260,000	**17**
			73400	**Rental & Maintenance of other equipment**	-	**8,000**	**8,000**	**7,000**	**7,000**	**6,000**	**7,000**	43,000	**18**
			72800	**Information Technology Equipment**	-	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**	60,000	**19**
			74200	**Printing and Publications**	-	**13,000**	**13,000**	**13,000**	**13,000**	**13,000**	**15,000**	80,000	**20**
			72500	**Supplies**	-	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	30,000	**21**
			74500	**Miscellaneous**	-	**4,000**	**4,000**	**4,000**	**4,000**	**4,000**	**4,000**	24,000	**22**
	SUBTOTAL: OUTCOME 2				-	312,000	447,000	473,000	449,000	428,000	391,000	2,500,000	

OUTCOME 3:			**71200**	**International Consultant**	-	-	**75,000**	-	-	-	-	75,000	**23**
			71300	**Local consultant**	-	-	**50,000**	**62,000**	-	**50,000**	-	162,000	**24**
			71400	**Contractual Services-individual**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	210,000	**25**
			71600	**Travel**	-	-	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	75,000	**26**
			72200	**Equipment & Furniture**	**10,000**	**10,000**	**5,000**	-	-	-	-	25,000	**27**
			75700	**Training & Advocacy workshops**	-	-	**15,000**	**10,000**	**10,000**	**10,000**	**10,000**	55,000	**28**
			75700	**International Training**	-	-	**90,000**	**50,000**	**100,000**	**50,000**	**30,000**	320,000	**29**
			73400	**Rental & Maintenance of other equipment**	-	-	**15,000**	**15,000**	**10,000**	**10,000**	**10,000**	60,000	**30**
			74200	**Printing and Publications**	-	-	**5,000**	**8,000**	**8,000**	**7,000**	**50,000**	78,000	**31**
			72500	**Supplies**	-	-	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	25,000	**32**
			74500	**Miscellaneous**	-	-	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	15,000	**33**
	SUBTOTAL: OUTCOME 3				40,000	40,000	308,000	198,000	181,000	180,000	153,000	1,100,000	
OUTCOME 4:			**71200**	**International Consultant**	-	**62,000**	-	**50,000**	-	**50,000**	-	**162,000**	**34**
			71400	**Contractual Services-individual**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**210,000**	**35**
			72100	**Contract Services-Firm, NGOs or academia**	-	-	**75,000**	-	**75,000**		**75,000**	**225,000**	**36**

		71600	**Travel**	**5,000**	**7,000**	**7,000**	**7,000**	**70,000**	**7,000**	**7,000**	**110,000**	**37**
		72200	**Equipment & Furniture**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**	**20,000**	**140,000**	**38**
		75700	**Training & Advocacy workshops**	**5,000**	**10,000**	**5,000**	**10,000**	**5,000**	**5,000**	**5,000**	**45,000**	**39**
		73400	**Rental & Maintenance of other equipment**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	**35,000**	**40**
		74200	**Printing and Publications**	**-**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	**10,000**	**35,000**	**41**
		72500	**Supplies**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**21,000**	**42**
		74500	**Miscellaneous**	**2,000**	**2,000**	**2,000**	**2,000**	**3,000**	**3,000**	**3,000**	**17,000**	**43**
	SUBTOTAL: OUTCOME 4			70,000	144,000	152,000	132,000	216,000	128,000	158,000	1,000,000	
Project Management		71400	**Contractual Services - Individual**	**35,000**	**35,000**	**35,000**	**35,000**	**35,000**	**35,000**	**35,000**	245,000	**44**
		71200	**International Consultant**	**-**	**-**	**-**	**50,000**	**-**	**-**	**50,000**	100,000	**45**
		71300	**Contractual Services - Firm**	**-**	**-**	**-**	**30,000**	**-**	**-**	**30,000**	60,000	**46**
		71600	**Travel**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	21,000	**47**
		75700	**Training & Advocacy workshops, Meetings**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	21,000	**48**
		73400	**Rental & Maintenance**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	21,000	**49**
		74200	**Printing and Publications**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	21,000	**50**
		74200	**Communication**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	**3,000**	21,000	**51**

			72215	**Vehicle**	**50,000**	-	-	-	-	-	-	50,000	**52**
			72500	**Office Supplies, Equipment and Furniture & Materials**	**6,000**	**3,000**	**6,000**	**3,000**	**6,000**	**3,000**	**6,000**	33,000	**53**
			74500	**Miscellaneous**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	7,000	**54**
	SUBTOTAL: Project Management				107,000	54,000	57,000	134,000	57,000	54,000	137,000	600,000	
OVERALL PROJECT TOTAL					549,000	954,000	1,225,000	1,218,000	1,004,000	1,003,000	947,000	6,900,000	

Summary of Funds: [61]

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Amount Year 6	Amount Year 7	Total
GEF	$549,000	$954,000	$1,225,000	$1,218,000	$1,004,000	$1,003,000	$947,000	$6,900,000
UNDP	$210,000	$320,000	$320,000	$320,000	$360,000	$270,000	$200,000	$2,000,000
GoPNG	$600,000	$660,000	$720,000	$800,000	$800,000	$820,000	$600,000	$5,000,000
Gov't of Australia	$1,800,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,200,000	$14,000,000
Bishop Museum	$600,000	$600,000	$400,000	$300,000	$100,000	0	0	$2,000,000
TOTAL	$3,759,000	$4,534,000	$4,665,000	$4,638,000	$4,264,000	$4,093,000	$3,947,000	$29,900,000

[61] *Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...*

V. MANAGEMENT ARRANGEMENTS

PROJECT IMPLEMENTATION ARRANGEMENTS

228. The project implementation arrangements have primarily been designed around the need to ensure effective whole-of-Government engagement on key aspects of national policy development and land-use decision making whilst recognizing the critical role that partnerships will play in on-ground delivery. As articulated earlier in the proposal a key barrier to effective implementation of GEF projects has been the failure to engage effectively with key Agencies, particularly of the national Government, which have the ability to undermine whether deliberately or incidentally the objectives of GEF funded projects in PNG. The new whole-of-Government approach successfully developed by the DEC for the Kokoda Initiative, a joint PNG and Australia conservation initiative, provides a clear direction and approach for future biodiversity conservation work in PNG. The policy coordination and stakeholder engagement model developed for Kokoda Initiative activities provides for effective coordination within and across each level of Government and provides for formal engagement of landowners in decision making at different levels. An outline of the proposed project management structure is shown in Figure 5.

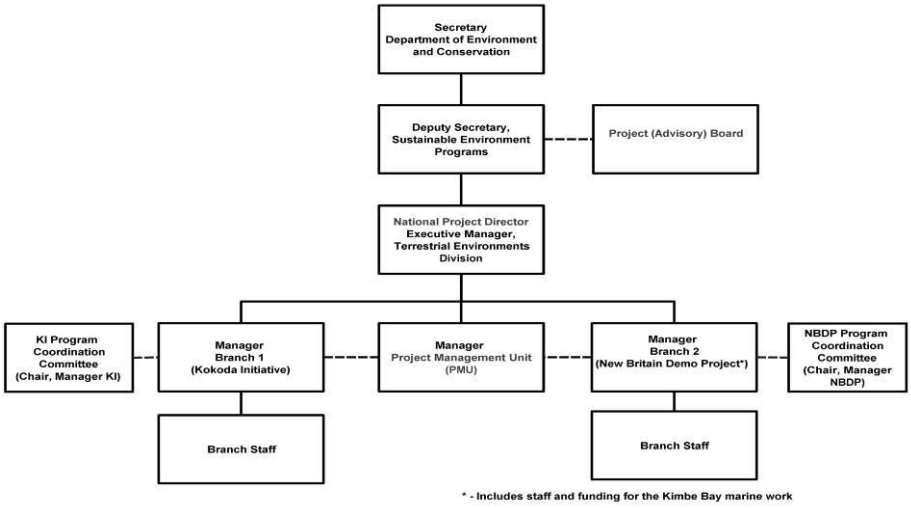

Figure 5: Organizational Structure of the Project

229. Following the programming guidelines for national implementation of UNDP supported projects, DEC, together with Department of National Planning and Monitoring (DNPM), will sign the Project Document with UNDP and will be accountable to UNDP for the disbursement of funds and the achievement of the project objective and outcomes, according to the approved work plan. In particular, the DEC, as the Implementing Partner (IP), will be responsible for the following functions: (i) coordinating activities to ensure the delivery of agreed outcomes; (ii) certifying expenditures in line with approved budgets and workplans; (iii) facilitating, monitoring and reporting on the procurement of inputs and delivery of outputs; (iv) coordinating interventions financed by GEF/UNDP with other parallel interventions; (v) preparation of Terms of Reference for consultants and approval of tender documents for subcontracted inputs; and (vi) reporting to UNDP on project delivery and impact.

230. At the central level, the project will establish a Project Advisory Board (PAB), and a Program Management Unit (PMU) within DEC. The PAB will be responsible for provision of advice, review and monitoring of all GEF projects for which DEC is the Executing Agency. The PMU will be responsible for funds administration, procurement and monitoring and reporting on

income and expenditures in accordance with project work plans. The implementing partners for on-ground activities will include Provincial and Local Level Governments, NGOs, industry partners, and private sector consultants where specific skills are needed that fall outside the capabilities of other partners.

231. A Project Advisory Board (PAB) will be established at project inception. It shall be composed of the DEC, DNPM, Department of Provincial and Local Level Government (DPLLG), one or more Provincial Government representatives, and one representative from the NGO community and Resource Industries. The PAB shall be chaired by the Deputy Secretary, Sustainable Environment Programs, DEC. It shall meet at least quarterly, and will provide overall guidance for the project throughout implementation. Specifically, the PAB will be responsible for: (i) review and approval of the Project's Annual Work Plan; (ii) provision of advice as requested for the project when guidance is required by the National Project Director, ensuring coordination among agencies and key sectors; (iii) provide guidance to implementation to ensure consistency with national policies and strategies; (iv) provide oversight to the work of the implementing units and organizations, monitoring progress (v) review financial management and annual financial reports; (vi) monitor effectiveness of project implementation and structures; and (viii) provide guidance to major evaluations, review evaluation reports and monitor implementation.

232. The Executive Manager, Conservation Planning will serve as the National Project Director (NPD). The NPD shall be assisted by a Program Coordinator, and key technical and administrative staff. The NPD will be responsible for the administrative, financial and technical coordination of the project and report progress based on reports received from the Managers of the Kokoda Initiative and New Britain Project Management Committees. He/She will also participate in meetings of the UNDP Outcome Board.

233. A Project Management Unit (PMU) is to be created within the Sustainable Environment Programs Wing and its role is to provide administrative support to the Managers of each GEF activity within DEC under the day-to-day guidance of the NPD. The PMU shall be based at the DEC. The PMU shall be staffed by regular personnel of the DEC, to be complemented by staff to be contracted under this and other GEF or donor funded projects. The PMU is responsible for overall management, monitoring, and coordination of Project implementation according to UNDP rules on managing UNDP/GEF projects. Specifically, its responsibilities include: (i) contracting of and contract administration for qualified local and international experts who meet the formal requirements of the UNDP/GEF; (ii) management and responsibility of all financial administration to realize the targets envisioned; (iii) organizing the meetings of the PAB; (vii) review and approval of work and financial plans of implementing partners; (viii) monitor and support the activities of the implementing partners.

234. The Managers within DEC who report to the NPD on both the Kokoda Initiative and the New Britain Demonstration Project are responsible for: (i) ensuring professional and timely implementation of the activities and delivery of the reports and other outputs identified in the project document; (ii) coordination and supervision of the activities outlined in the project document; and, (iii) facilitating communication and networking among key stakeholders at the national level.

235. Project Management Committees (PMCs) comprising representatives from the DEC, Provincial Governments, and NGOs and industry representatives as appropriate will coordinate the implementation, monitoring and evaluation of on-ground activities for both demonstration projects, i.e. the Kokoda Initiative and the New Britain Demonstration Project (NBDP). The PMCs shall, (i) develop their own work and financial plans in support of project implementation, (ii) seek consensus on the vision and objectives for the demonstration project, (iii) facilitate the translation of these objectives into an integrated plan of action; (iv) ensure consistency and convergence of stakeholder activities, plans and programs to support the achievement of the objectives and expected outcomes of plan; (v) monitor the extent, progress and outcomes of mainstreaming efforts; and (vi) review of site progress and monitoring reports and work programs.

236. The UNDP PNG will be responsible for Project oversight, ensuring milestones are achieved. It will undertake quarterly financial and technical monitoring as part of its oversight functions. In addition, the UNDP will be responsible for: (i) coordinating with the UN Country Team in PNG with a view to mainstreaming in their interventions at the country level and funding as appropriate; (ii) establishing an effective networking between project stakeholders, specialized international organizations and the donor community; (iii) facilitating networking among the country-wide stakeholders; (iv) reviewing and making recommendations for reports produced under the project; and, (v) establishing and endorsing the thematic areas, with a view to ensuring linkage to national policy goals, relevance, effectiveness and impartiality of the decision making process.

VI. MONITORING FRAMEWORK AND EVALUATION

BUDGETED MONITORING AND EVALUATION (M&E) PLAN:

237. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the Project Management Unit (PMU) and the UNDP Country Office (UNDP-CO) with support from UNDP/GEF. The Logical Framework Matrix in Appendix _ provides *performance* and *impact* indicators for project implementation along with their corresponding *means of verification*. These will form the basis on which the project's Monitoring and Evaluation system will be built.

MONITORING AND REPORTING

Project Inception Phase

238. A Project Inception Workshop will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit as appropriate. A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goals and objectives, as well as finalize preparation of the project's first annual work plan on the basis of the project's logframe matrix. This will include reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalize the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.
239. Additionally, the purpose and objective of the Inception Workshop (IW) will be to: (i) introduce project staff with the UNDP-GEF Team which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit staff; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and Regional Centre in Bangkok, Thailand staff vis à vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Review Meetings, as well as the Mid-Term Review. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget revisions.
240. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all, each party's responsibilities during the project's implementation phase.

Monitoring responsibilities and events

241. A detailed schedule of project reviews meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time

frames for Tripartite Reviews, Steering Committee Meetings, and (ii) project related Monitoring and Evaluation activities.

242. *Day to day monitoring of implementation progress* will be the responsibility of the Project Manager (depending on the established project structure) based on the project's Annual Work Plan and its indicators. The Project Manager will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

243. The Project Manager will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF Regional Centre in Bangkok, Thailand. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. The local implementing agencies will also take part in the Inception Workshop in which a common vision of overall project goals will be established. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

244. Measurement of impact indicators related to global benefits will occur according to the schedules defined in the Inception Workshop and tentatively outlined in the indicative Impact Measurement Template. The measurement, of these will be undertaken through subcontracts or retainers with relevant institutions (e.g. vegetation cover via analysis of satellite imagery, or populations of key species through inventories) or through specific studies that are to form part of the projects activities (e.g. measurement carbon benefits from improved efficiency of ovens or through surveys for capacity building efforts) or periodic sampling such as with sedimentation.

245. *Periodic monitoring of implementation progress* will be undertaken by the UNDP-CO through quarterly meetings with the project proponent, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

246. UNDP Country Offices and UNDP-GEF APRC, Thailand as appropriate, will conduct yearly visits to projects that have field sites, or more often based on an agreed upon scheduled to be detailed in the project's Inception Report /Annual Work Plan to assess first hand project progress. Any other member of the Steering Committee can also accompany, as decided by the SC. A Field Visit Report will be prepared by the CO and circulated no less than one month after the visit to the project team, all SC members, and UNDP-GEF.

247. *Annual Monitoring* will occur through the *Tripartite Review (TPR).* This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to Tripartite Review (TPR) at least once every year. The first such meeting will be held within the first twelve months of the start of full implementation. The project proponent will prepare an Annual Project Report (APR) and submit it to UNDP-CO and the UNDP-GEF RCB at least two weeks prior to the TPR for review and comments.

248. The APR will be used as one of the basic documents for discussions in the TPR meeting. The project proponent will present the APR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The project proponent also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary.

Terminal Tripartite Review (TTR)

249. The terminal tripartite review is held in the last month of project operations. The project proponent is responsible for preparing the Terminal Report and submitting it to UNDP-CO and UNDP GEF RCB. It shall be prepared in draft at least two months in advance of the TTR in order to allow review, and will serve as the basis for discussions in the TTR. The terminal

tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.

250. The TPR has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the Inception Workshop, based on delivery rates, and qualitative assessments of achievements of outputs.

PROJECT MONITORING REPORTING

251. The Project Coordinator in conjunction with the UNDP-GEF team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. Items (a) through (f) are mandatory and strictly related to monitoring, while (g) through (h) have a broader function and the frequency and nature is project specific to be defined throughout implementation.

Inception Report (IR)

252. A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year/ Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan would include the dates of specific field visits, support missions from the UNDP-CO or the UNDP GEF RCB or consultants, as well as time frames for meetings of the project's decision-making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time frame.

253. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

254. When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's RCB will review the document.

Annual Project Report (APR)

255. The APR is a UNDP requirement and part of UNDP's Country Office central oversight, monitoring and project management. It is a self-assessment report by project management to the CO and provides input to the country office reporting process and the ROAR, as well as forming a key input to the Tripartite Project Review. An APR will be prepared on an annual basis prior to the Tripartite Project Review, to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work.

256. The format of the APR is flexible but should include the following:

i. An analysis of project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome
ii. The constraints experienced in the progress towards results and the reasons for these
iii. The three (at most) major constraints to achievement of results
iv. AWP, CAE and other expenditure reports (ERP generated)

v. Lessons learned

vi. Clear recommendations for future orientation in addressing key problems in lack of progress

Project Implementation Review (PIR)

257. The PIR is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, the CO together with the project must complete a Project Implementation Report. The PIR can be prepared any time during the year (July-June) and ideally prior to the TPR. The PIR should then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the project, the executing agency, UNDP CO and the concerned RC.

258. The individual PIRs are collected, reviewed and analyzed by the RCs prior to sending them to the focal area clusters at the UNDP/GEF headquarters. The focal area clusters supported by the UNDP/GEF M&E Unit analyze the PIRs by focal area, theme and region for common issues/results and lessons. The TAs and PTAs play a key role in this consolidating analysis.

259. The focal area PIRs are then discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings.

260. The GEF M&E Unit provides the scope and content of the PIR. In light of the similarities of both APR and PIR, UNDP/GEF has prepared a harmonized format for reference.

Quarterly Progress Reports

261. Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project team. See format attached.

Periodic Thematic Reports

262. As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

Project Terminal Report

263. During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met, or not achieved, structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and explicability of the Project's activities.

Technical Reports (project specific- optional)

264. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites.

These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

Project Publications (project specific- optional)

265. Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

INDEPENDENT EVALUATION

266. The project will be subjected to at least two independent external evaluations as follows:

Mid-term Evaluation

267. An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the RCB's UNDP-GEF.

Final Evaluation

268. An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Centre in Bangkok, Thailand and UNDP-GEF.

AUDIT CLAUSE

269. The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

INDICATIVE MONITORING AND EVALUATION WORK PLAN AND BUDGET

Type of M&E activity	Responsible Parties	Budget US$	Time frame
Inception Workshop and Report	▪ Project Management Unit ▪ UNDP CO ▪ UNDP GEF	US30,000	Within first three months of project start up
APR and PIR	▪ Project Team ▪ UNDP-CO ▪ UNDP-GEF	None	Every year, at least by June of that year
TPR and TPR report	▪ Government Counterparts ▪ UNDP CO ▪ Project team ▪ UNDP-GEF Regional Coordinating Unit	None	Every year, upon receipt of APR
Steering Committee Meetings	▪ Project Coordinator ▪ UNDP CO	None	Following Project IW and subsequently at least once a year
Progress Reports	▪ Project team	None	Quarterly following by monitoring by UNDP CO
Technical reports	▪ Project team ▪ Hired consultants as needed	None	To be determined by Project Team and UNDP-CO
Mid-term External Evaluation	▪ Project team ▪ UNDP- CO ▪ UNDP-GEF Regional Coordinating Unit ▪ External Consultants (i.e. evaluation team)	US50,000	At the mid-point of project implementation.
Final Evaluation	▪ Project team ▪ UNDP- CO ▪ UNDP-GEF Regional Coordinating Unit ▪ External Consultants (i.e. evaluation team)	US50,000	During the last three months of the project.
Terminal Report	▪ Project team ▪ UNDP-CO ▪ External Consultant	None	At least one month before the end of the project
Lessons learned	▪ Project team ▪ UNDP-GEF Regional Coordinating Unit	None	Yearly
Audit	▪ UNDP-CO ▪ Project team	50, 000	Yearly
Visits to field sites *(UNDP staff travel costs to be charged to IA fees)*	▪ UNDP Country Office ▪ UNDP-GEF Regional Coordinating Unit (as appropriate) ▪ Government representatives	5, 000	Yearly
TOTAL INDICATIVE COST *(Excluding project team staff time and UNDP staff and travel expenses)*		US$ 180,000	

VII. LEGAL CONTEXT

270. This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

271. Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

272. The implementing partner shall:

    i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

    ii. assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

    iii. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

273. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

VIII. ANNEXES