1. Country and Sector Background

Papua New Guinea’s small, open economy is characterized by dependency on a small number of primary commodities, vulnerability to exogenous shocks and consequent volatility in economic outcomes. Ineffective fiscal management and poor expenditure choices have often exacerbated this volatility. Economic policy measures under the Structural Reform Program (1999-2001) focused on restoring macroeconomic stability following the 1999 financial crisis, and implementing wide-ranging structural and governance-related reforms. Considerable progress was achieved through 2001, namely: reduction in inflation from 18 percent in 1999 to below 10 percent by March 2002; easing of treasury bill yields from 27% to about 11%; and the rebuilding of international reserves from an estimated two weeks of import cover to 5 months of import cover at the end of 2001.

Despite making much progress since the financial crisis of 1999, the restoration of sustained economic growth remains elusive. Real GDP is estimated to have contracted by an average of –3.3% per year during 2000-02; it declined a further 3.1% in 2002. The growth failure is striking: GDP growth has been negative in five of the past six years and real GDP in 2002 was below its 1996 level. Mining and petroleum contracted 1.6% annually between 1996 and 2001. The real value of total agricultural GDP has remained stagnant over the last 22 years and has further contracted at a rate of 4.9% per annum over the past 5 years, with the exception of the oil palm sector exports which grew at a rate of 6% per annum over the past 15 years.

The agricultural sector in Papua New Guinea (PNG) is central to the livelihood of the population
and overall performance of the economy and remains critical to development and poverty reduction:

- 85% of the country’s population, of which 95% are smallholder farmers, relies on agricultural production as their principal source of livelihood and income;
- smallholder farmers’ contribution to production is about 75% in coffee, 65% in cocoa and coconut, 47% in oil palm, 70% in sheep production, and 90% in pig and goat production (NARI, July 2002);
- subsistence food production accounts for almost one-half the value of all crop production;
- almost 40% of the employment in the agricultural sector comes from private enterprises; and
- agriculture accounts for about 13% of total exports receipts and more than 26% of total GDP (2001).

Agricultural output and productivity have been adversely affected by the deterioration of conditions in rural areas, namely, poor road infrastructure and problems of law and order. To this end, the current government has allocated a significant share of the budget towards addressing these issues. In addition to this, the following needs have also been identified as essential to improving the performance of the sector: (i) an agriculture strategy with defined and specific institutional responsibilities especially at lower levels of government; (ii) adequate research and extension services; (iii) establishment of mechanisms to resolve competing land claims and land compensation issues; (iv) resolving difficult issues of governance, decentralization, and public service delivery; and (v) improving the involvement and well-being of women in agricultural activities.

As regards agricultural research and extension, the industry corporations are responsible for the organization, management, and coverage of smallholder extension services for export crops. With the exception of the Oil Palm Industry Corporation (OPIC), these corporations have encountered some of the same institutional difficulties that beset government agencies. Though there is a reasonable focus by Government on export crops, there continues to be little consistent support directed towards traditional food crops, with the exception of some work by the National Agricultural Research Institute (NARI).

Rural financial services have not been able to meet the credit needs of most agricultural producers and small non-farm business enterprises. Formal government efforts, such as the Rural Development Bank (RDB), have not yet established profitable or sustainable approaches, but have instead channeled scarce public resources to less needy producers. The credit issue is also closely related to customary communal land tenure, under which banks will not accept land as collateral. It is also related to crime where individuals are reluctant to invest and banks are reluctant to lend in an environment where part or all of the return on that investment may be taken or destroyed. Private credit, through the nucleus estates and agricultural input suppliers, does occur and is satisfactory for those who qualify, but excludes many potential rural borrowers, especially individual entrepreneurs and small-scale rural businesses.

1/ mainly oil, gold, copper, logs, palm oil, and coffee.
2. Objectives
The overall project development objective would be to promote rapid economic growth in the rural areas in four oil palm growing provinces, by strengthening the smallholder oil palm sector through capitalizing on existing infrastructure, and by establishing replicable mechanisms for community-driven development.

3. Rationale for Bank’s Involvement
The project design and implementation would benefit from the long association of the Bank with the country's oil palm sub-sector and its stakeholders, which started in the late 1960's and continued until the closing of the Oro project in 2001.

4. Description
The five-year project would be implemented in the four oil palm growing provinces of Oro, West New Britain, New Ireland and Milne Bay. The proposed project is a follow on to the successful Oro Smallholder Oil Palm Development Project, but with a broader project area. Its design incorporates lessons from the previous project. Overall project size and hence size of the individual components will be determined based on the available financing envelope. Total project cost is assumed to be around US$25 million. It would be financed by a US$20 million IDA credit, a US$2.5 million counterpart contribution from PNG and the project beneficiaries, and a grant of US$2.5 million from the European Union (to be confirmed) in support of community-driven development (CDD) activities.

As identified, the project would consist of four components:

1. **Consolidation of Smallholder Oil Palm Development** in the country’s five existing oil palm development schemes, Popondetta (Oro province), Hoskins and Bialla (both schemes in West New Britain), Milne Bay and New Ireland. The component would include support to:

   i) smallholders for re-planting about 6,500 ha of aging oil palm blocks, and development of financing mechanisms to meet future replanting needs;
   
   ii) smallholders for establishing about 6,000 ha of new village oil palm where there are vacant blocks of land **alongside existing roads** within the five oil palm schemes;
   
   iii) extension services to smallholders with increased support for women participation – extension services would maintain focus on oil palm but would also be broadened to provide limited advice on other crops in collaboration with other government agencies and non-governemental organizations (NGOs); and
   
   iv) adaptive research aimed at improving smallholder productivity, including the completion of the Geographic Information System (GIS) coverage of smallholders.

   The scope of oil palm field development would be further discussed and confirmed during project preparation.

2. **Road and Bridge Improvement and Maintenance.** This would include:

   i) assistance in upgrading and restoring about 470 km of access roads to existing smallholder oil palm blocks. This would cover upgrading key sections of main access roads in the oil palm Land Settlement Scheme (LSS) and Village Oil Palm (VOP) areas. Road upgrading work would be performed by local contractors wherever possible with contracts tendered locally; and
ii) a continuous maintenance program on all existing and upgraded roads used in the oil palm fruit collection system. This would be largely undertaken using small fleets of mobile road maintenance equipment (including trucks, backhoe, loader, grader, and roller) owned by OPIC and seconded to the mills for operation.

2/ Some of the scheme areas include land settlement schemes, generally where settlers were brought from more densely populated parts of the country. Such is the case at Popondetta, Hoskins and Bialla. Settlers were given plots of 6 or 6.5ha per family. Village oil palm (VOP) plots are established by local residents on customary owned land following agreement with other clan members and are generally 2 ha in extent.

3. **Pilot Community-Driven Development (CDD).** The objective of this component would be to establish community-driven development mechanisms in support of rural development and poverty reduction, for both oil palm and non-oil palm growers, in the four target provinces of the proposed project.

Through piloting efficient, socially inclusive, and transparent community-driven mechanisms, the proposed project would facilitate community prioritization, selection, co-financing, and execution of investments in basic infrastructure and social services provision. It is envisaged that these sub-projects would not only positively influence the quality and efficiency of service delivery, but would also develop the capacities within communities to come together to solve issues of mutual concern. The size and design of the component, and the criteria and methodology by which these activities will be identified, evaluated, approved, and administered, will be carefully assessed and determined during project preparation. Depending on the findings during preparation, it may be necessary to begin these activities in only a few provinces and thereafter consider potential replication in the other project provinces. The project would seek to utilize relevant experience from other projects in PNG and surrounding countries in the development of this component.

4. **Institutional Strengthening.** The component would include support to:

i) project management, through the establishment of (a) a Project Management Unit within OPIC, and (b) separate arrangements to be determined during project preparation for overseeing the community-driven development component;

ii) OPIC capacity building, through the provision of equipment, training, international technical assistance (including for the development of OPIC’s management information systems) and studies (including baseline, mid-term and end of implementation impact evaluation studies; and other specific studies required by OPIC);

iii) appropriate local level government entities would be supported with funding for technical assistance and specific incremental expenditures necessary to realize the institutional development envisaged under the project; oil palm producers associations would also receive support; and

iv) environmental management, through adherence to an environmental management plan developed prior to the project, additional on-the-job training of OPIC field staff under the leadership of a specialist environmentalist, and financial assistance to staff of the Department of Environment and Conservation (DEC) to carry out their environmental monitoring tasks.

These outline proposals would be further analyzed, developed and agreed during further preparation.

5. **Financing**

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<tr>
<th>Source (Total (US$m))</th>
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<td>BORROWER ($2.50)</td>
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6. Implementation

Smallholder Oil Palm Development

Although for the overall project there are a number of important institutional arrangements to be agreed and finalized, the basic implementation framework for the smallholder oil palm development aspects of the project directly derives from that adopted under the previous Oro project. It is based on the nucleus estate system that has been, and continues to be, successfully implemented in PNG. There is a well-established relationship among the three entities involved – the private sector palm oil companies with their own plantations and mills, the smallholder growers and OPIC.

The companies (a) provide the milling capacity for the fresh fruit bunches (FFB) from their own estates and from the smallholder outgrowers, (b) collect FFB from roadsides in the smallholder supply areas at fortnightly intervals, mostly using their own transport fleet, (c) provide essential production inputs such as seedlings (for planting and replanting), fertilizer and tools, and (d) pay growers for deliveries either fortnightly or monthly, and maintain an accounting system that enables deductions from each grower FFB payment to meet repayments due on development and/or production input loans from the concerned lending entity.

Smallholders (a) provide their own land (either in settlement schemes or on village land with a clan usage right) for oil palm development, (b) plant and tend the palms (weeding, fertilizing and pest control), receiving credit-in-kind for the non-labor inputs, (c) harvest the FFB and deliver it to the roadside to meet the planned collection schedule, (d) undertake replanting at the end of the production cycle when palm height precludes harvesting, and (e) contribute levies as deductions from net FFB payments for various services such as extension (OPIC) and research (Oil Palm Research Association - OPRA).

OPIC (a) provides technical assistance to oil palm smallholders, and has staff located in each scheme, (b) cooperates with palm oil companies in the smallholder development (planting and replanting), in the supply of inputs, and in scheduling of collection in response to weather-related road access problems, and (c) represents the smallholder interests in dealing with government and palm oil companies, and participates in the Local Provincial Planning Committees (LPC) that coordinate the development of smallholder oil palm in the provinces.

There is a strong interdependency between smallholders and palm oil companies. The companies use OPIC in most of their dealings with smallholders, and match the smallholder contribution of OPIC levy to cover its operational costs. The companies have very limited access to land for their own estates and need smallholders to provide the FFB to use mill capacity and expand to reach appropriate economies of scale. Smallholders completely depend on the companies to process their FFB and, in most cases, to collect their FFB. The companies market the palm oil produced by the smallholders and the oil palm estates. A satisfactory mechanism to ensure appropriate profit sharing between smallholders and the companies is in place, consisting in the application of a FFB pricing formula which is regularly reviewed and updated. The capacity of the palm oil company as the sole processing/marketing entity to deduct repayments due on smallholder sub-loans is a major advantage for institutions providing credit to minimize any lending risk.

Traditionally, OPIC services have been restricted to the development and culture of oil palm only, rather than to total household production systems. This restricted focus, appropriate leadership and organization, and the guarantee of funding through industry levies, have contributed to a
service that has been particularly effective in developing smallholder oil palm, but less so in raising productivity (particularly in fertilizer use and harvesting frequency) and in convincing growers of the need for timely replanting in some schemes. Overall, OPIC staff only have a marginal interest in other social factors and agricultural activities that could impact significantly on household welfare. Consequently, the project would include leadership and on-the-job training to develop the ability of staff to effectively analyze available physical, financial and social data in order to better understand the factors that influence household decisions. The extension approach would be adjusted to incorporate sociological principles. The social assessment to be undertaken in the project preparation process would provide some basic data as a starting point for this approach, and would be followed by the appointment of a suitably experienced expert in the OPIC PMU who would lead the program. He would ensure that selected staff in each scheme are able to carry on leadership of the enhanced extension approach at completion of the project term. OPIC would expand the current women-oriented extension currently linked to the "Mama Lus Frut" programs and would introduce a broadening of the coverage by staff of technical advice to non-oil palm cultivation, especially the household garden, in cooperation with the Department of Agriculture and Livestock (DAL) and the National Agricultural Research Institute (NARI). The social and economic issues associated with the scarcity of land for gardens in the highly populated LSS blocks in West New Britain would receive special attention.

Road and Bridge Improvement and Maintenance

The road upgrading and improvement program, which would include the construction of a few new roads to provide access to established smallholder oil palm blocks, would be undertaken through awarding contracts to contractors established provincially or nationally. The planning and design of the program, and subsequent supervision of contracts would be the responsibility of a specific engineering unit established in OPIC. It would consist of an engineer in the PMU and three mobile supervisors based in three provinces. The Department of Works (DOW) would be able to second a liaison engineer to the unit to act in an advisory capacity. OPIC would provide foremen at each site to work with the supervisors. The Provincial Tender Boards would be used to the maximum extent possible, and the maximum value that could be processed through this unit would be increased for project road improvement contracts (Kina 200,000 raised to at least Kina 500,000). Progress has been made on the criteria for selecting roads for the program and on technical specifications, and the final definition of the roads to be improved in each scheme would be completed during project preparation. The institutional arrangements would have to be formally confirmed during preparation. Preparation studies would determine whether limited involuntary resettlement might result from the construction of a few new access roads. In the unlikely event that any land would have to be acquired in this context, a policy framework for resettlement would be prepared prior to appraisal.

Road maintenance would be undertaken through contractors or with use of small maintenance plants owned by OPIC (government) and operated by the palm oil companies. A levy system on growers, with a matching contribution by the palm oil companies and a contribution of double the smallholder amount by the provincial government, would provide funds for a trust account that would be sufficient not only to cover operation and maintenance costs of the equipment but also its replacement cost. The scale of the necessary levies/contributions would be further defined during preparation (currently estimated at K3 per ton FFB), and the willingness of each stakeholder to accept the associated obligations would have to be agreed. If this scheme option is not considered acceptable, a practical and appropriate alternative to guarantee funding of maintenance would have to be agreed to enable progress to project appraisal.
Financing Arrangements for Smallholder Oil Palm

More than one satisfactory institutional arrangement for funding smallholder oil palm field development during the project implementation period have been identified. One possible option would be for the RDB to be the borrower of funds (largely derived from the World Bank Loan) from Government with on-lending to the palm oil companies at each site for subsequent on-lending to smallholders. Another option would be for the RDB to be the direct lender to the smallholders. In all scenarios, the palm oil companies would manage the collection of sub-loan repayment through deductions from FFB payments and the associated recording of the status of individual accounts. The institutional decisions will have to be made during preparation. As there are three palm oil companies involved, it is possible that more than one model will be preferred, although a uniform model would be more desirable to facilitate management by the Borrower.

The most secure long-term arrangements for the funding of oil palm replanting at the end of their useful life appears to be as a small levy as a deduction on FFB payments. This has, de facto, already occurred to some degree in West New Britain. There are options as to how this collected levy would be managed and a decision will have to made on this issues during preparation. The physical aspects of replanting on the smallholder blocks would be managed as in the current arrangements through cooperation between the palm oil companies, OPIC and the funding agency.

Environmental Management

An environmental assessment will be undertaken as part of the preparation process and an environmental management plan prepared, which will impact on how the project is carried out. It is anticipated that environmental concerns will be such that it will be necessary to have an environmental officer appointed to the OPIC PMU, and that he/she will be responsible for training of OPIC staff in environmental management and ensuring that all environmental guidelines dictated by the environmental management plan are implemented. As the Department of Environment and Conservation (DEC) generally does not receive operational funding through the government’s budget process, provision would have to be made through the OPIC budget for the environmental officer to assist DEC officers with cost of travel to the oil palm schemes to enable them to undertake their independent monitoring role. For the preparation of GIS for each of the provinces involved to assist in planning and monitoring, it is possible that bilateral assistance will enable this before project appraisal. However, in the event that this does not eventuate, OPRA would take responsibility for this task, with funding through the OPIC budget.

Community-Driven Development

The CDD component would be in the form of a mini social-investment fund with two objectives: (a) to finance a limited menu of public good sub-projects, consisting of small scale social and economic infrastructure construction or rehabilitation, on a demand-driven basis; and (b) to focus on local governance, particularly the relationship between LLGs and CBOs, by promoting information flows, accountability, etc.. It is envisaged that component implementation would begin in a small number of provinces or districts that have initiated local-level planning processes, and could be later extended to other project areas depending on the results of the initial phase. Detailed implementation arrangements, including the role of the Local Provincial Planning Committees, would incorporate lessons from past and existing NGO / donor / Government programs in community development, and would be determined during project preparation.

Project Management

A Project Management Unit (PMU) would be established at OPIC headquarters to oversee all of the oil palm aspects for the life of the project. It would include a project manager with
responsibility for ensuring that activities are in accordance with the agreed project concept, the supervision of studies on project progress, the preparation of required estimates and budgets, and reporting to relevant government agencies and to the Bank as the funding agency through the General Secretary of OPIC. The PMU would also include the engineer responsible for the infrastructure component, the extension specialist and an environmentalist, all of whom would require equipment and operating expenditures. A number of studies and technical assistance in the area of management information systems and monitoring would also have to be funded under the PMU budget. As the project will be the major activity of OPIC during the project period, a competent financial controller would be appointed in OPIC to service not only the project and Bank Loan administration, but also the total OPIC financial system.

Separate arrangements would be established for managing the Community-Driven Development component. One option would be to contract out management of the component to an NGO or consortium of NGOs, with both the Department of National Planning and Rural Development and OPIC on a steering committee to ensure appropriate coordination with other project components. Another option would be to establish a small dedicated unit in the Department of National Planning and Rural Development.

7. Sustainability

Oil palm as an industry has performed very well and its future prospects are favorable. The industry is supported by major private sector investment in palm oil companies; PNG is an efficient oil palm producer with many comparative advantages; and the industry has the support of government as one that can generate substantial export earnings and enhance rural incomes and household welfare. Projections of international market prices for oil palm products are satisfactory and should continue to allow profitable production. A major aim of the project is to ensure the sustainability of the important smallholder element of the industry in PNG. Two major issues that have threatened smallholder oil palm production have been difficulties in ensuring regular access for collection of FFB, and delays in replanting of palms after they have reached the end of their harvestable life. The project will upgrade the road access system and then ensure its maintenance in a usable condition. The funding of maintenance will be generated by grower levy and contributions by palm oil companies and provincial governments. A system that guarantees provision of funds for the cash costs of replanting without the need for government assistance will be put in place, and the OPIC field extension services will be improved to encourage and organize timely replanting. Additional planting of oil palm along existing access roads will spread the annual cost of roads over greater production to increase the economic efficiency of the smallholder component of the industry, and support its long-term viability. The latter should also be enhanced by improved extension services that aim to increase smallholder productivity per hectare. An overall increase in smallholder production through the establishment of new village oil palm blocks and through replanting and productivity increases will generate greater funding, through levies, to sustain the oil palm extension and research institutions – OPIC and OPRA, respectively, without reliance on government support. Although the community development component of the project is relatively small, the assistance provided in capacity building would help to institute a more sustainable system of support for activities and infrastructure to meet community needs.
8. Lessons learned from past operations in the country/sector

Most project implementation experience in PNG has revealed a limited performance at the operational level in most public sector institutions, a very limited capacity by government to provide for operational costs other than salaries in these institutions, and an inability by government to make timely and adequate appropriation of counterpart funding. This emphasizes the need for reliance on private sector sources to the maximum extent possible for funding and services. A number of lessons specific to the oil palm industry have been derived from the recent experience in the Oro project. In summary these were:

- Smallholder tree crop development can be a successful model to create rural employment, raise incomes and alleviate poverty, and enhance export income, provided international commodity prices are acceptable, and essential supporting infrastructure (particularly access roads) is available and there is adequate provision for technical services and production inputs;
- Strong effective project management is necessary and the project design should minimize the number of executing units to reduce the coordination required;
- Regular FFB collection must be guaranteed to maximize economic benefits and to maintain the confidence of smallholder growers. This implies having the access road network to a standard that meets the load requirements and having regular maintenance of the network. As the road collection network is a very costly part of the development, smallholder oil palm development should be promoted and maximized in the areas with practical access to the network to reduce the annual economic cost per volume of FFB supplied;
- Experience showed that the regular DOW services were unsuitable for implementation of the reconstruction program involving numerous small sections of road that had to be built in close coordination with OPIC scheme managers. It was important to have well-coordinated and continuous infrastructure contracts available to encourage the continued presence of competent contractors in the concerned provinces. Provincial government could not be relied on to provide funds for maintenance of the access road network;
- The OPIC extension system was less than fully effective in enhancing productivity, which was partly due to an incapacity to utilize its information management system and to systematically analyze and address grower attitudes to improved productivity measures;
- The presence of the AusAID-funded Oro Conservation Project showed the advantage of having a dedicated unit to oversee environmental concerns; and
- Any project component which includes improvements to social infrastructure needs to complement and be integrated into local programs.

All of the above lessons have been noted in drawing up the project proposals and will be further referred to as project preparation continues.


9. Environment Aspects (including any public consultation)

Issues:

The proposed project is designed to support the consolidation of existing smallholder oil palm schemes through replanting aging oil palm blocks, and establishing new Village Oil Palm (VOP)
blocks alongside existing roads in areas that are serviced by the mills. The project would not expand Land Settlement Schemes (LSS) blocks nor establish new VOP blocks in areas not currently serviced by a (albeit weather dependent) road network except where short connecting roads may be constructed to facilitate FFB collection.

The proposed project would also restore and upgrade access roads to existing smallholder oil palm blocks and would only construct a few new access roads, either through degraded environments or through existing oil palm plantings, and as such should have no direct effect on existing intact natural habitats.

Therefore, in general the project should have little effect on the existing environment. However, there is potential for both positive and negative effects of implementation of the project as follows:

(i) **Contamination of water** by effluent from the mills, pesticides and fertilizers

   a. *effluent from the mills and solid waste management:* there have been many complaints about water quality since palm oil mills were established in PNG. These were mainly due to earlier practices of about fifteen years ago when the mills were partially discharging effluents into water courses. Now, all the country’s palm oil mills treat liquid effluent (in ponds) before discharge and recycle solid effluents (empty fruit bunches - EFB) as fertilizer back on the oil palm blocks. The efficiency of liquid effluent treatment is routinely monitored by the mills. All palm oil companies have their own environmental officers and are undergoing assessment for ISO14001 registration which requires that an environmental policy be in place and internal and external audits be conducted. However, as FFB from smallholders account for a large proportion of crop processed in the mills (up to 60% in Bialla), it will be necessary to review the performance of the existing waste water treatment systems, assess the capacity to handle increased flows, and prescribe the necessary mitigation measures for the proposed project;

   b. *pesticides:* the amount of pesticide use within smallholder blocks is minimal and is not considered to be a significant environmental issue. OPRA (the Oil Palm Research Association) has developed a very effective Integrated Pest Management system, which depends greatly on biological control measures. The stated aim of OPRA is to eliminate the use of chemical pesticides within a few years. For replanting, poisoning of old palms by injection of herbicide is carried out by trained staff from the palm oil companies or OPIC (smallholders occasionally use herbicides, such as glyphosate and granoxone, which break down on contact with the soil and the issue here is one of safety). The potential use of pesticides, and the current Integrated Pest Management (IPM) system and training program will be reviewed to ensure that appropriate practices are incorporated into the project;

   c. *fertilizers:* an increase in the use of fertilizers by growers would be promoted under the proposed project, with the aim of raising yield levels. This should be a consideration in planning for water quality monitoring.

(ii) **Soil erosion:** most of the estate plantings were established up to the edge of watercourses. As these plantings reach the age for replanting, the palm oil companies are re-establishing buffers along all streams. For example in Oro province, Higaturu Oil Palms (HOP) has plans to establish 1,000 ha of forest along waterways within their estates. In Milne Bay, older oil palm blocks along streams are being under-planted with rainforest trees so that when the palms are poisoned the trees will already be established. For the establishment of new village oil palm blocks, DEC
environmental guidelines would be followed under the proposed project to ensure that appropriate buffer zones are maintained along permanent water courses. The clearing of degraded bushland for establishing new village oil palm blocks would be done manually to minimize soil disturbance and prevent soil erosion. Legume cover crops (such as Pueraria) would be established to enhance soil protection when new palms are planted. These practices will also be reviewed during preparation.

(iii) Natural habitats/conservation: project activities are proposed to be carried out along existing road corridors through areas that have been severely degraded by logging or in the case of the Oro province in grassland areas. However, project activities could have effects on surrounding intact natural habitats in the case of establishing new 2 ha village oil palm blocks or if current activities such as gardening are relocated as a result of establishing new oil palm blocks. This is particularly the case in the Oro Province where some of the new 2 ha village oil palm blocks could be located adjacent to regenerating logged – over rainforest which is either actual or potential habitat for *Ornithoptera alexandrae* (Queen Alexandra’s Birdwing Butterfly – QABB). A related issue would be that land owners may be encouraged to clear degraded secondary forest, with potential for rehabilitation, in anticipation of the project.

Key stakeholders: The Department of Environment and Conservation (DEC) is the implementing agency responsible for matters concerning the natural environment in Papua New Guinea and administers the Environment Act 2000. The act details the requirements for carrying out an “activity”, which is defined as follows: “an activity which results or is likely to result in a change to the environment”. DEC lacks resources for ensuring adequate environmental monitoring. Other stakeholders include oil palm smallholders, growers’ associations, palm oil companies, provincial and local level governments, NGOs, women’s groups, churches, etc…

4/ For example grassland, excessively logged, affected by fire, converted to agricultural crops other than oil palm or converted to gardens.

5/ QABB is an important “flagship” species for PNG, is on CITES Appendix 1 and is only found in the Oro Province.

10. List of factual technical documents:

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Note: This is information on an evolving project. Certain components may not be necessarily included in the final project.