

STDF PROJECT GRANT APPLICATION FORM

INDEPENDENT STATE OF PAPUA NEW GUINEA

**ENHANCING TRADE FOR
COFFEE FARMERS IN
PAPUA NEW GUINEA**

**REQUESTED BY THE DEPARTMENT OF AGRICULTURE AND
LIVESTOCK OF THE GOVERNMENT OF PAPUA NEW GUINEA**

VERSION: FINAL

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GLOSSARY

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|--------------|--|
| APTC | Australia Pacific Technical College |
| AUSAID | Australian Agency for International Development |
| CAC | Codex Alimentarius Commission |
| CBB | Coffee berry borer |
| CEO | Chief Executive Officer |
| CFC | Common Fund for Commodities |
| CIC | Coffee Industry Corporation |
| CIC-ISP | Coffee Industry Corporation Strategic Plan 2013-2018 |
| DAL | Department of Agriculture and Livestock |
| DSP | Development Strategic Plan 2010-2030 |
| EC | European Commission |
| ECF | European Coffee Federation |
| EDF11 | Economic Development Fund |
| EU | European Union |
| FAO | Food and Agriculture Organisation |
| GAP | Good Agricultural Practice |
| GDP | Gross Domestic Product |
| HDI | Human Development Index |
| ICM | Integrated Crop Management |
| ICO | International Coffee Organisation |
| IOD | Industry Operations Division |
| M&E | Monitoring and Evaluation |
| MRL | Maximum residue limit |
| NADP | National Agricultural Development Plan 2007-2016 |
| NAQIA | National Agricultural Quarantine and Inspection Agency |
| NASAA | National Association for Sustainable Agriculture Australia Limited |
| NDOE | National Department of Education |
| NGO | Non-Governmental Organisation |
| OTA | Ochratoxin "A" |
| PHAMA-PNG | Pacific Horticulture and Agriculture Market Access |
| PNG | Papua New Guinea |
| PNG-AAA-2015 | PNG Agricultural Administration Adjustment Bill of 2015 |
| PNG-TPA | PNG Tourism Promotion Authority |
| PPAP | Productive Partnership in Agriculture Project |
| PPG | Project preparation grant |
| PSC | Premium Smallholder Coffee |
| R&GSD | Research and Grower Services Division |
| RASFF | Rapid Alert System for Food and Feed |
| SPO | Special Projects Office |
| SPS | Sanitary and Phytosanitary |
| STDF | Standards and Trade Development Facility |
| TRA2 | Trade Related Assistance |
| USFDA | United States Food and Drug Administration |
| V2050 | PNG Vision 2050 |
| WB | World Bank |

Exchange Rate:

US\$1 = 3.11597 Kina

Exchange rates correct as of 1 February 2017

STDF PROJECT GRANT APPLICATION FORM

Project Brief

| | |
|--|--|
| Project Title | Enhancing trade for coffee farmers in Papua New Guinea |
| Objective | Increased financial returns, yields, quality/safety and market access for smallholder coffee growers & processors and grower/processor groups |
| Budget requested from STDF | US\$730,110 |
| Total project budget | US\$1,129,442 |
| Duration of project | 3 years |
| Full name and contact details of the requesting organization(s) | Dr. Vele Pat Ila'ava, Secretary, Department of Agriculture and Livestock, PO Box 2033, Port Moresby, NCD, Papua New Guinea Email: vpilaava100261@gmail.com Mobile: +675 71111348 |
| Full name and contact details of contact person for follow-up | Mr. Charles Dambui CEO, PNG Coffee Industry Corporation, PO Box 137, Goroka, Eastern Highlands Province, Papua New Guinea Email: cdambui@cic.org.pg Tel.: +675 73822322 |

I. BACKGROUND & RATIONALE

1. Relevance for the STDF

Why is this project relevant for STDF funding? Explain how the project is related to one or more of the following: (i) the identification, development and dissemination of good practice in SPS-related technical cooperation, including the development and application of innovative and replicable approaches; (ii) STDF work on cross-cutting topics of common interest; (iii) the use of regional approaches to address SPS constraints; and/or (iv) collaborative and inter-disciplinary approaches focused on the interface / linkages between human, animal and plant health and trade, and benefiting from the involvement of two or more STDF partners or other relevant organizations. See Qn. 9 and Qn. 15 (a) of the Guidance Note.

Papua New Guinea (PNG) is rated 157th on the United Nations Human Development Index (HDI), the country is rugged with limited infrastructure, and approximately 87% of the countries' population of 7,321,000 (2013 figure) live in rural areas and depend almost entirely on agriculture for their livelihood. However, Agriculture only accounts for 22.3% of Gross Domestic Product (GDP) and the GDP was itself just US\$3,500 per capita in 2016, ranking PNG as 184th in the world for GDP. Literacy is estimated at 63% and at least 37% of the population live below the poverty line. The economy is heavily reliant on extractive industries which are ultimately unsustainable. However, the Government has ambitious plans to develop the agriculture sector with a focus on cash crops, adding value and supporting local businesses. Increasing trade in important exports such as coffee are key pillars of the Governments' plan to raise household incomes in rural areas.

Coffee is the second most important crop, delivering an income of US\$145 million in 2015. Some 60% of this income goes directly to the growers, 86% of whom are smallholder farmers. Coffee is grown in 15 of the 20 provinces in PNG and provides a livelihood for 2.5 million people. Arabica coffee grown in highland areas dominates production accounting for 99.6% of production in 2015-2016. Small amounts of robusta coffee from coastal provinces account for the remainder of production. The major production areas (producing ~1,000 tonnes or higher per annum each) are Eastern Highlands (19,651 tonnes), Western Highlands (11,534 tonnes), Jiwaka (3,418 tonnes), Morobe (3,418 tonnes), Simbu (2,990 tonnes) and Southern Highlands Province (854 tonnes). The remaining 9 provinces accounted for 854 tonnes of product in 2015-2016.

The Coffee Industry Corporation Industry Strategic Plan for 2013-2018 (CIC-ISP) underlines that investments in coffee will benefit the majority of the population in PNG and contribute positively to the nation's implementation of the Sustainable Development Goals (SDGs)". The goal of the CIC-ISP is to increase financial returns, productivity, product safety and quality and market access for smallholder coffee farmers and other actors along the value-chain.

Historically PNG has had an excellent reputation for high-quality fine flavour arabica coffee but the long-term trend has been one of decline over the last 20 years. In the period between 1996-2000 production averaged 71,316 tonnes per annum and PNG share of the global market was 1.07%. In the period from 2012-2016 production had declined to an average of 47,532 tonnes per annum, PNG's share of the global market has halved to just 0.53%. Volume is not the only concern for coffee producers; quality is a vital factor that determines market price and price premiums or discounts for low quality. Consistency of quality and overall quality has fallen. The industry faces problems with falling yields, inconsistent quality and pest and disease problems such as coffee berry borer, coffee leaf rust, coffee green scale and pink disease. This is a great pity because PNG coffee is a great product with much potential for growth. PNG coffee is highly rated among speciality coffee drinkers. Consumer reviews of PNG are highly positive with comments such as "Excellent taste with nutty and spicy undertones", "This is great coffee and very good value", and "This coffee is of superb quality with a full aromatic flavour".

Poor practices are associated with many smallholder farmers in PNG, but this is not universal. Some grower/processor groups have improved their operating practices and are producing very high quality. The Kanite Mountain Group (155 households) won the inaugural PNG coffee of excellence competition in 2014 with a cupping score of 87/100 which represents a very high-quality coffee. In February 2017, the Unggai Bena District Cooperative Society (100 households) benefited from payment of a premium for quality worth US\$64,300. This group have received quality premiums totalling US\$321,543 over the last 7 years. These two examples demonstrate not only what PNG coffee farmers are capable of achieving but also the return on investment that comes from maximising product quality. Investment in higher quality, safer coffee can increase household incomes and reduce poverty in rural PNG.

Prospects for growth in the global market for coffee are looking bright. According to the International Coffee Organisation (ICO), global production of coffee has shown an upward trend over the last 20 years. Between 1996 and 2016 global production of coffee has risen from 6.2 to 9.1 million tonnes per annum. In 2015-2016 global production increased by 0.9% but consumption rose by 1.3%. According to the ICO there was a deficit in global coffee supplies of 198,000 tonnes in 2016. The deficit was buffered by stocks of coffee remaining from the bumper seasons of 2012-2013 and 2013-2014. However, these stocks cannot last and opportunities exist to increase output. The major traditional consumer markets for coffee are the EU, US and Japan which account for 53% of the global coffee market (EU, US

and Japan account for >80% of PNG coffee exports). These markets have shown a modest increase in consumption of coffee of 1.5% per annum year on year over the last 5 years. However, these figures only reflect volume. The consumption habits of consumers in these markets are changing leading to a higher demand for higher-quality, high-value speciality coffees. Africa and Asia which account for 26% of the global market for coffee have seen rapid growth in volumes consumed over the last 5 years. In Africa coffee consumption is growing by 5% per annum and in Asia 4.5% per annum.

The proposed coffee project will make a significant contribution to the Government achieving the goals set in the CIC-ISP by supporting improvements to food safety and quality management in the coffee value-chain in order to promote coffee exports that benefit rural communities and reduce poverty. The proposed project is relevant for STDF support because it focuses on addressing SPS challenges throughout the value-chain to improve productivity and promoting trade. The proposed project will build on and foster synergies with other relevant past and ongoing interventions by various partners (World Bank and Australian Aid) for the coffee value-chain. By focusing on key SPS challenges the project will add value and help consolidate the results and sustainability of these much larger investments.

The project is based on a collaborative public private partnership approach and will support the development, roll out and application of innovative and replicable approaches to build capacity in the coffee value-chain. The proposed project was developed by the Coffee Industry Corporation of PNG (CIC) through an STDF PPG (requested by DAL) approved in March 2016, and has strong local ownership and demand. The project would be implemented in close cooperation with other ongoing projects targeting coffee value-chains. This will promote a coordinated and coherent approach to SPS capacity building across the various ongoing/planned interventions for coffee.

PNG coffee relies on a smallholder driven supply chain, so efforts must focus on improvements for the smallholders and small-scale processors. The major problems facing the value chain are falling yields and inconsistent and falling quality of product. Part of the problem is already being addressed via the nursery and farm rehabilitation programmes supported by the World Bank funded PPAP project. However, planting new coffee trees is not the complete solution. There needs to be a major change in the thinking and practices of small-scale growers and processors. They must adopt commercial thinking and practices that will support improvements to yield and quality and result in higher household incomes from coffee.

CIC believe that the proposed STDF project could make a valuable contribution to supporting innovation in the industry by supporting the development and uptake of:

- Smallholder friendly food safety management systems for production and processing of coffee;
- An auditable national protocol for coffee production and processing that is adapted to the needs of small-scale growers and processors in PNG in terms of simplicity and cost-effectiveness;
- A national curriculum for adult education on coffee production and processing that cross links extension activities to the established national curriculum for education on coffee production and processing in schools;

- A peer group training programme with a minimum of 60 qualified instructors drawn from public and private sector agencies that links extension activity into the national coffee curriculum for adult learners and uses the coffee calendar to ensure timely delivery of appropriate training messages;
- A national certificate course for coffee baristas available for members of the hospitality and tourism industries in PNG.

Much of these efforts will focus on supporting existing smallholder grower/processor groups to improve safety, quality and yield of coffee. However, by developing a national curriculum for adult education on coffee production and processing and linking it to the existing school curriculum for coffee CIC is looking into the future, this approach will help establish the foundation for long-term changes in the thinking and capacity of PNG's coffee small-scale farmers and processors.

2. SPS context and specific issue/problem to be addressed

2.1 Quality & safety are important for the future of PNG's coffee industry

In 2015-2016 ninety percent of PNG's coffee exports were exported to Germany (44% with 2.5% share of market), USA (19% with 1.0% share of market), Australia (17% with 1.6% share of market) and Japan (10% with 1.4% share of market). PNG's traditional competitive edge for these markets is as a provider of high-quality, high-value speciality coffee. However, the quality profile for exports in 2015-2016 (Figure 1) shows that 72% of exports were of low grade (Y1-Y3 or lower), just 28% were of higher grade and only 6% was of the highest quality (A/AA grade).

This had important implications for the industry, as illustrated in Figures 3 & 4:

- top grade A/AA coffee sold for between US\$2.66 and US\$3.85/kg;
- premium Smallholder Coffee (PSC) sold for between US\$2.25 and US\$2.89/kg;
- Y1-Y3 grades of coffee sold for only US\$1.93 and US\$2.57/kg.

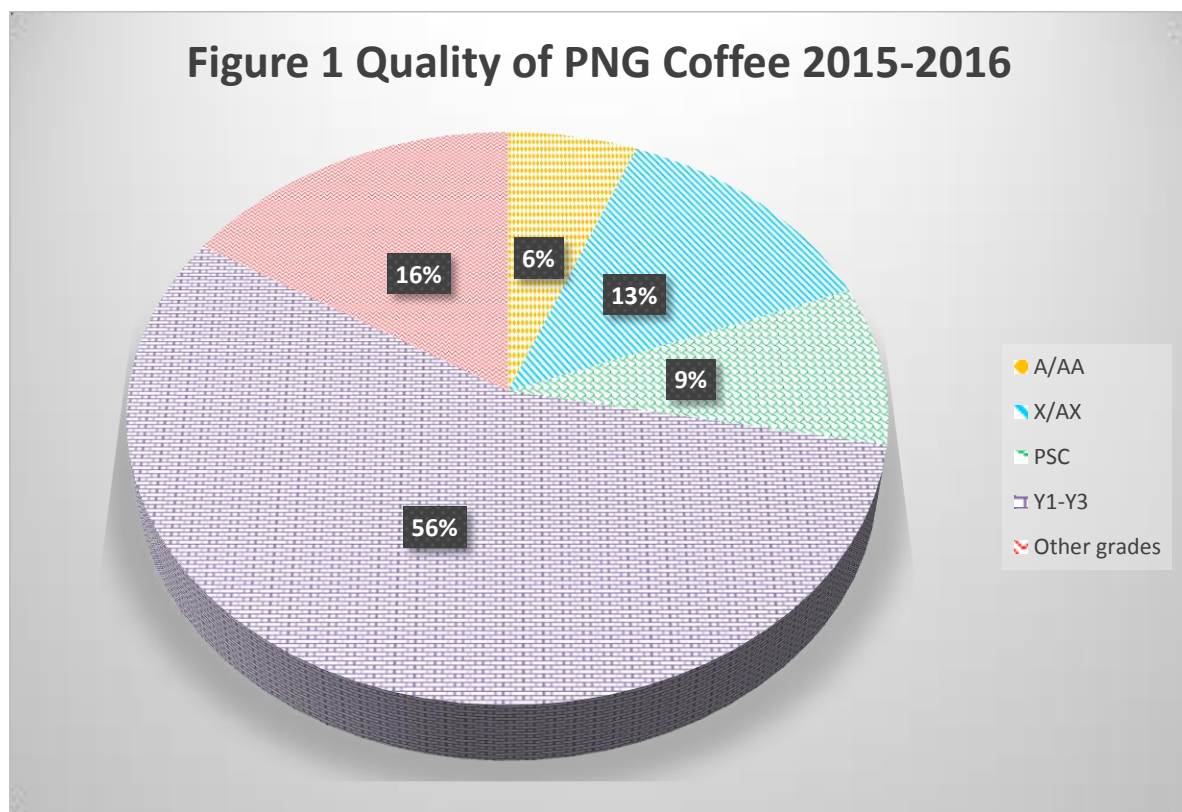
The higher grades of coffee attracted price premiums derived from New York Coffee exchange NY "C" prices. A/AA grade coffee commanded a premium of between US\$0.25 and US\$0.35/lb. In contrast, Y1-Y3 grade coffee was discounted against the NY "C" price losing US\$0.08 to US\$0.11/lb. Smallholders were worst affected as they were responsible for the bulk of the Y1-Y3 and lower grade coffee. It would obviously be beneficial to improve not just the volume of coffee sold but also the percentage of coffee of at least PSC grade and reduce the percentage of Y1-Y3 coffee.

Several exporters reported problems with rejections of shipments by importers in Germany in previous years due to detections of Ochratoxin "A" (OTA) but hard evidence of these incidents could not be obtained. Poor handling of the coffee (see 2.3) will increase the risk of OTA contamination but there no evidence could be found of incidents in the public domain. This could indicate that no problem exists but based on field observations of poor post-harvest handling and processing practices by smallholder farmers it is more likely that the origin of OTA problems in PNG coffee is concealed or lost as the majority of PNG coffee is sold for blending rather than remaining as single origin coffee. Adoption of improved management practices would reduce the OTA contamination risk and also help to control SPS risks associated with plant pests and diseases.

2.2 Why is PNG coffee in decline?

Coffee production in PNG is dominated by smallholder farmers with coffee gardens ranging in size from 0.25-4ha. These farmers accounted for 86% of production (36,739 tonnes) in

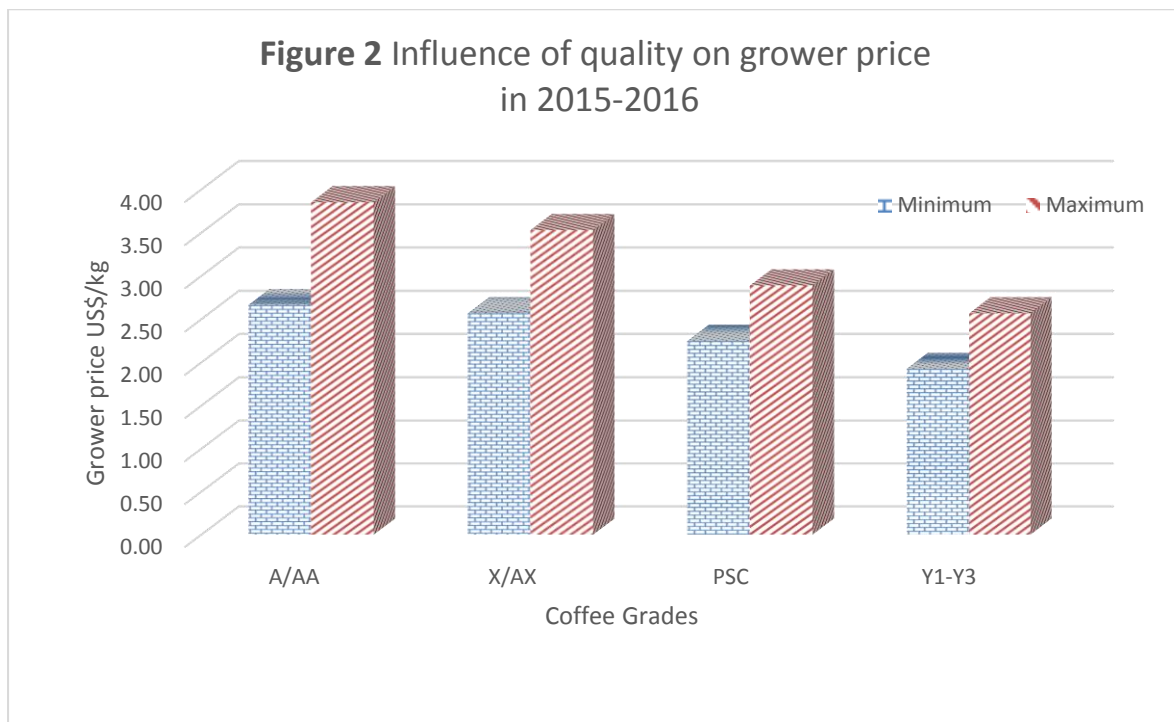
the 2015-2016 season. The remainder of production came from large estates (10%) with plantations of 21 to 300ha or more and medium size commercial farmers (5-20ha plantations), known in PNG as block holders. The block holders accounted for 4% of production in 2015-2016. The coffee value-chain in PNG is characterised by smallholder production mostly in highland areas with rugged country and poor road infrastructure. The majority of smallholder farmers take a distinctly un-commercial approach to coffee production and processing (processing of parchment coffee). Many of the trees are long past commercial age and need replacing.

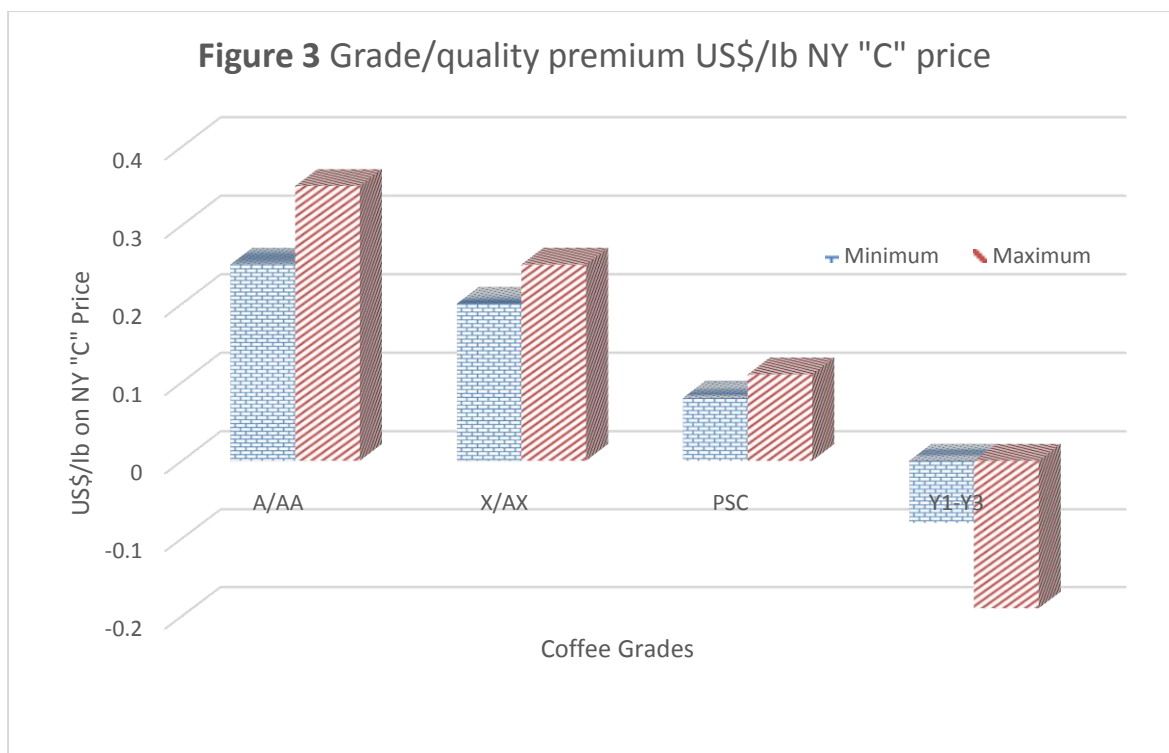


In addition, there is an absence of good agricultural practices and little use of inputs. Costs of production are not understood and record keeping is limited hence farmers see only the cost of the input and cannot determine if the potential return justifies their investment. Some farmers see coffee trees as a means to maintain access to customary land requiring much less effort than horticultural crops.

The non-commercial approach to coffee farming taken by many smallholders helps to explain why yields and product quality have declined. This approach creates a vicious cycle whereby falling yields and lower quality create a disincentive for investment in the coffee garden which in turn results in further reductions in yield, quality and farm income. Smallholder farmers in PNG have also been affected by unstable grower prices that have fluctuated widely over the last 20 years. In the best years, prices have reached US\$3.38/kg but in other years, prices have fallen to US\$0.73/kg. The lack of stability associated with the grower price has not encouraged investment by smallholder coffee farmers in PNG. The major investments have come from the large estates who have the capacity and vision to see the value in investing in new plantings and better processing equipment to increase yields of top grade premium priced coffee.

The lack of good management on most smallholder farms has serious implications for SPS risks in primary production. The severe outbreak of coffee berry borer (CBB) in 2017 (believed to have come from Indonesian Papua) is being exacerbated by poor management on farm such as inefficient pruning and poor phytosanitary hygiene in the coffee garden. The absence of any form of pest scouting creates opportunities for the establishment of invasive





species such as CBB and other pests such as coffee leaf rust etc. Furthermore, poor post-harvest practices such as inefficient drying create opportunity for survival of CBB in parchment coffee.

2.3 Food safety related SPS risks associated with PNG coffee exports

Coffee is associated with a limited range of sanitary and phytosanitary (SPS) risks with implications for food safety of the product. However, these risks are serious and must be managed effectively in the interests of consumer safety and reliable access to the target market. For effective food safety management, it is necessary to understand the nature of the possible food safety hazards, the likelihood that they will occur (the risk), the circumstances that will increase the risk and the point in the food chain that requires management to prevent the risk from becoming a reality. The following is a summary of the most important risks associated with coffee and coffee products. Ochratoxin "A" (OTA) contamination is discussed as it is the only serious risk associated with coffee. Some information on pesticide residues has also been included as these are sometimes highlighted (without foundation) by internet based consumer groups in the US, Australia and EU as an SPS risk in coffee.

Ochratoxin "A" - OTA is a toxic metabolic by-product of the growth of a mould *Aspergillus ochraceus* on the outer shell of the coffee bean. OTA is potentially carcinogenic to humans (Group 2B). Moist coffee beans contain 55-60% moisture but proper drying reduces moisture content to 12-13% which is too low for growth or toxin formation by *A.ochraceus*. The fungus responsible for OTA contamination does not like the high moisture content in the wet coffee beans and cannot grow in beans dried to <13% moisture. However, *A.ochraceus* is commonly found on coffee farms and is likely to be present on processed beans prepared for sun-drying. In the initial phases of drying the moisture content is still too high for OTA formation. OTA formation is favoured during the mid-part of the drying process when the water activity is ~0.85. If drying is completed within 5 days there is insufficient time for OTA formation. However, in wet weather drying can take 7-21 days creating opportunities for OTA formation. Once dried the coffee beans must be kept dry. If beans are allowed to re-hydrate during storage or transport and reach a moisture content of >18%, *A.ochraceus* will grow and form OTA. Roasting or solubilisation of coffee will reduce OTA contamination by

about two thirds but cannot remove all of the OTA. The amount of OTA remaining will naturally be determined by the severity of the original contamination; thus, even after roasting or solubilisation the OTA concentration may still be above the maximum residue level (MRL) for OTA allowed by law in the destination market.

Pesticide residues – Commercial production of coffee will normally (the exception being organic production) involve using herbicides, fungicides and insecticides. There is nothing wrong in using compounds recommended for use on coffee in the correct manner as part of an integrated pest or crop management system. Pesticide residues have been raised as a potential SPS risk in several countries triggering studies to determine the actual level of risk associated with pesticide residues in coffee. Studies conducted by Food Standards Australia, the United States Food and Drug Administration (USFDA) and the Japanese Ministry of Health did not detect any pesticide residues in most samples of coffee.

3. Links with national/regional development plans, policies, strategies, etc.

Explain how the project supports national/regional development plans, agricultural/trade/SPS policies and strategies, and any other relevant priorities. If a national/regional SPS strategy exists, indicate how the project supports this strategy. See Qn. 15 (d) of the Guidance Note.

This proposal is closely aligned to the policies of the Government of Papua New Guinea for development of commercial agriculture as a means to raise household incomes and increase development for people in rural areas who constitute the bulk of PNG's population.

Coffee Industry Corporation Strategic Plan 2013-2018 (CIC-ISP) revised edition released February 2014 – The vision statement of the Coffee Industry Corporation (CIC) states that CIC is responsible for encouraging the development of prosperous coffee farmers and a vibrant, competitive and sustainable coffee industry. CIC's mission is to increase income, productivity, production, quality and market access for female and male coffee farmers and processors. The goal and purpose of the CIC-ISP is as follows:

- **Goal** – Improved livelihoods for coffee farmers and processors and communities along the coffee value-chain.
- **Purpose** – To increase financial returns, productivity, production, quality and market access for coffee farmers and other actors along the value chain.

This strategy focuses on supporting PNG strength as an internationally recognised supplier of fine flavour high-quality speciality coffees. The aim is to support increased sales of high-value premium grade speciality coffees including niche markets for organic, fair trade, shade grown and bird friendly coffees. In 2016 the CEO of CIC presented an overview of the coffee industry to stakeholders that included updates to the industry strategy for 2016 onwards. The following points were emphasised:

- Improve the competitiveness of the coffee industry;
- Target high-value speciality/gourmet coffee markets;
- Facilitate greater participation of coffee producers in production, quality control and marketing;

- Support for growers and processors to improve overall quality and consistency of quality.

Through major programmes such as the World Bank funded PPAP project CIC have been able to institute nursery programmes and replacement of ageing trees with seedlings of new high yielding clones that retain PNG's unique flavour profile.

The proposed coffee project would complement and add value to CIC's existing programmes. CIC see potential to draw together existing resources from PNG and elsewhere to develop and implement smallholder friendly management systems and standards for the production and processing of coffee. Better management at the level of the smallholder producer and processor has the potential to increase yields, quality (and hence value of the product) and to manage SPS risks associated with the possible presence of ochratoxin "A" due to poor management of drying or problems during storage and transport of the coffee. CIC have designed the activities to become an integral part of the normal programmes of the CIC and private sector partners the smallholder grower/processing groups and coffee exporters. CIC believe that the STDF proposal will make a significant contribution to achieving the goal and objective of the CIC-ISP and that the outcome will be sustainable beyond the life of the STDF project.

PNG Agricultural Administration Adjustment Bill of 2015 (PNG-AAA-2015) – The PNG AAA-2015 redefines the role of the Department of Livestock (DAL) giving the DAL the remit and tools to support initiatives aimed at improving effectiveness and efficiency in the agricultural sector. The ultimate aim is for a better coordinated and effective sector that will help raise incomes in rural areas and address the development needs of the rural population. In developing the coffee proposal, the DAL and CIC will be in the position to implement a programme to improve the efficiency and competitiveness of the smallholder driven coffee value-chain.

PNG Vision 2050 (V2050) – The PNG Vision 2050 (published in 2009) calls for development and growth of agriculture and expanded production volumes and trade in all cash crops. Increased trade in cash crops to high value markets and value addition through downstream processing is seen as a key strategy for encouraging wealth creation with direct benefits for PNG's predominantly rural populace. The proposed coffee project seeks to enhance the competitiveness and efficiency of small-scale coffee growers and processors in PNG with the intention of increased trade in higher quality, higher value product. CIC are also supporting efforts by grower/processor groups to market their coffee domestically especially to the growing tourist industry. CIC propose to support certificate level training for coffee baristas and to link groups with a proven track record of high quality product to the tourist markets.

Development Strategic Plan 2010-2030 (DSP) – The stated goal of the DSP is to develop "A world class agricultural sector that is responsive to international and domestic markets for a range of products and to provide the best available income and job opportunities for the rural population". CIC proposals for a smallholder friendly quality and safety management system and training programme are grounded in internationally recognised best practices (CAC & IPPC) and respond to market and regulatory concerns over known SPS risks and quality issues in coffee. Addressing the quality and safety concerns and improving yields relative to production area have the potential to drive a renaissance in PNG coffee. Industry experts agree that PNG's competitive advantage is quality but current trends are towards lower quality and inconsistent delivery of safety and quality due to poor management of the smallholder driven supply chain. PNG should play to its strengths and focus on increasing output of a consistently high quality, high value product. The proposed coffee project is designed to maximise volume, safety, quality and value of coffee for smallholder coffee growers and processors.

4. Past, ongoing or planned programmes and projects

Provide detailed information about relevant past, ongoing or planned national or donor funded projects and programmes related to SPS, food safety, animal and/or plant health in the country or region, as appropriate, as well as any SPS components of broader agricultural or trade capacity building programmes. Explain how lessons learned from previous projects have been taken into account in the design of this project, and clarify how the project will complement these related initiatives. Where applicable, explain how the project relates to the EIF and/or Aid for Trade process. See Qn. 15 (e) of the Guidance Note.

A summary of the past and ongoing projects that have relevance to the proposed STDF project for coffee in PNG is given in table 1 below.

As part of the development of proposed coffee project, discussions were held with the World Bank Operations Officer for Agriculture in PNG (Mr Allan Oliver), the Project Coordinator for the Productive Partnerships in Agriculture Project (PPAP) (Mr Jethro Apinas) and the Project Manager of the Coffee Component (Mr Potaisa Hombunaka). The PPAP is a World Bank funded project designed to benefit coffee and cocoa institutions, smallholder production and market access, performance of the value-chains and sustainability of partnerships between growers and export companies. By improving performance and efficiency within the value-chain, fostering public private sector partnerships and addressing infrastructure bottlenecks the PPAP seeks to improve the livelihood of smallholder coffee and cocoa growers. PPAP activity is strongest on productivity, group governance and business management. The PPAP clearly has strong synergies with the proposed project and the outputs will add value to those of PPAP. The CIC team choice of export companies and grower/processor groups will assist in cross-linking the two projects. Material developed by PPAP for good agricultural practices and group governance and business management will be assimilated into the smallholder friendly management systems, national coffee protocol and peer group training programme developed as part of the proposed project. It is important to be aware that the PPAP project finishes in mid-2019 so practical cooperation in the field will be limited unless PPAP is extended.

In addition, AUSAID are developing a second phase of PHAMA-PNG and the EC delegation in Port Moresby is developed interventions for funding under its Economic Development Fund (EDF-11). The details of the AUSAID and EU interventions were unclear at the time of developing this proposal. However, the CIC team will work through the Secretary of Agriculture at DAL to maintain links with AUSAID and the EC Delegation to PNG to explore the potential for integration between the STDF project and new interventions developed by these donors.

Table 1 Summary of trade and SPS risk projects in PNG

| Title of project | Start & end date | Donor & value | Relevance |
|--|--------------------------|--|--|
| Productive Partnership in Agriculture Project (PPAP) | 29/04/2010 to 30/06/2019 | Total value US\$50.2 million with commitment of US\$25 million from World Bank plus US\$9 million from IFAD and rest from local partners | The objective of PPAP is to improve livelihoods of smallholder cocoa and coffee producers/processors. Support includes better seedlings, training, tools, group governance & business management and market access. The PPAP is establishing MIS systems for the cocoa and coffee value-chains. Not directly an SPS or food safety risk management |

| | | | |
|--|-------------------------------|--|--|
| | | | project, the objectives relate to increasing yields of cocoa and coffee and income for smallholder farmers via improved planting material and agronomic practices. However, implementation of GAP on farm addresses SPS risks in primary production. STDF coffee project would complement and add value to the outputs of PPAP. |
| Trade Related Assistance (TRA2) | 01/02/2015 to 30/04/2018 | EU European Development Fund budgets component 1 = €124,000, component 2 = €915,000 & component 3 = €2,209,000 | TRA2's objective is to support institutional reform and strengthen trade institutions, development of national trade policy framework and international trade agenda, trade facilitation support. Support provided to PNG compliance agencies including purchase of laboratory equipment/supplies and provision of general training on food safety and risk management. TRA2 is not directly concerned with coffee or cocoa but has supported fisheries exports. |
| Pacific Horticulture and Agriculture Market Access (PHAMA) | 2011-2017 PHAMA-PNG 2015-2017 | Main project jointly funded by Australia & New Zealand PHAMA-PNG is funded bilaterally by AUSAID | PHAMA-PNG work with public and private-sectors via industry led working groups. Aim is to improve management of regulatory aspects and exploit export opportunities for cocoa & coffee. Most work has been on cocoa but a second phase is planned for 2017 onwards that could increase work on coffee value-chain. |

The most important project on ochratoxin "A" contamination was funded by the Common Fund for Commodities (CFC) and the Government of the Netherlands and ran from 2000 to 2005. Detailed research was conducted on the conditions favouring growth of *Aspergillus ochraceus* and formation of ochratoxin "A" (OTA) in coffee during processing, storage and transport. The outputs of the project were used as a basis for the development of industry guidelines for prevention of OTA contamination in coffee and OTA management guides for buyers of green coffee. The Codex Alimentarius Commission (CAC) continued the work started under the CFC project and this resulted in publication of a Codex Code of Practice for prevention of OTA in coffee in 2009 (CAC/RCP/69-2009). The CAC code of practice will be used as a basis for parts of the smallholder friendly management system, national coffee protocol and peer group training system. The major task in PNG will be to convert the key messages in these documents into a form suitable for use by members of the grower/processor groups. Electronic copies of these documents can be downloaded from the CAC, FAO, ICO and EDF websites (see appendix 7).

5. Public-public or public-private cooperation

Explain how the project promotes cooperation between government organizations involved in managing SPS issues and/or with the private sector. See Qn. 15 (f) of the Guidance Note.

The Coffee Industry Corporation (CIC) is a public-sector body established in 1991 with a mandate (Coffee Act of 1991) to regulate and provide services for the coffee industry in PNG. CIC works closely with industry as part of the normal work of the Industry Operations Division (IOD) especially licencing and inspection of export facilities and product prior to export from Lae port. CIC also works with the private sector to develop a common response to major pest and disease issues such as the 2017 outbreak of coffee berry borer and other SPS related matters. Projects such as the proposed intervention create an opportunity to strengthen and deepen linkages with both the exporters and smallholder grower/processor groups. In the proposed project, the CIC's role is as a partner in developing public goods that will benefit all stakeholders in the industry rather than acting as an inspector and regulator. CIC and the private sector welcome this opportunity for deepening collaboration. The development of training materials and management systems and protocols for improving the quality and safety of smallholder coffee is recognised as a non-competitive issue by the private sector partners. The CIC as a lead partner in the World Bank funded PPAP project plans to use the proposed intervention to add-value to ongoing collaboration with the private-sector initiated under PPAP that has helped to develop better linkages between coffee export companies and smallholder producers and to fund a coffee nursery and farm rehabilitation programme. The proposed programme provides greater emphasis on safety, quality and value of the product that complements the efforts made under PPAP.

6. Ownership and stakeholder commitment

Which stakeholders (e.g. government agencies, private sector organizations, relevant local coordination mechanisms on SPS, trade, agriculture, environment and/or private sector capacity building) actively support this project? Explain how these stakeholders would be involved in the project. **Attach letters of support** from each of these organizations. See Qn. 15 (g) of the Guidance Note

The Government of PNG has been very supportive of the STDF PPG. The Secretary for Agriculture of the Department of Agriculture and Livestock (DAL) recognises the importance of the coffee and cocoa industries for sustainable development and improvement of rural livelihoods. DAL facilitated the process of development and submission of the application for an STDF PPG to support preparation of project grant proposals for the coffee and cocoa value chains. DAL has also played a significant role in management and support during implementation of the PPG. The content of the proposal document was prepared by a team of experts at CIC in Goroka with the support of an international consultant (Dr Andrew Graffham) who was funded by the STDF. The Secretary for Agriculture at the Department of Agriculture and Livestock and the Chief Executive Officer of CIC are backing this proposal (see appendix 4) and were responsible for the submission of the original PPG application to the STDF. In addition, the private sector has been highly supportive of this application, has been actively consulted and made inputs into the design of project activities. During the development of the proposal discussions were held with several coffee processing and export companies and smallholder coffee farmers. The main concerns raised by the private sector stakeholders was falling and inconsistent product quality from the smallholder supply-base, falling yields due to inefficient management and absence of Good Agricultural Practice (GAP) on smallholder farms and concerns that the current training programmes did not reach a wide enough audience, that sometimes the training messages were inconsistent or inaccurate or were delivered at the wrong time of the year. The feedback from the stakeholders was assimilated into the design of the proposed coffee project.

As part of the proposal development process the National Agricultural Quarantine Inspection Authority (NAQIA) was consulted. NAQIA have a mandate under the NAQIA act of 1997 to provide official control of SPS risks for most imports and exports of agricultural products. They confirmed their support and approval of the STDF proposal.

For the delivery of the proposed project, CIC will partner with 5 of the major coffee export companies who buy extensively from smallholder grower/processor groups and have expressed an interest in working with CIC and the smallholder groups to support improvements in quality and yield and to manage SPS risks within the coffee value chain.

The five companies selected for involvement in the proposed project are as follows:

- Cosem Company, Banz, Jiwaka Province;
- Monpi Coffee, Goroka, Eastern Highlands Province;
- New Guinea Highlands Coffee Exports, Goroka, Eastern Highlands Province;
- PNG Coffee Exporters, Goroka, Eastern Highlands Province;
- Mountain Coffee, Lei, Morobe Province.

These companies will partner with CIC for the development of the smallholder friendly safety and quality management systems and the auditable national protocol. They will also be involved in development and delivery of the peer group training system and national coffee curriculum. They will play an active role in supporting the smallholders' adoption of improved safety and quality management practices, implementation of the national coffee protocol and support and mentoring of the producer groups via their own extension personnel working in partnership with CIC. Letters of support from these companies are provided in appendix 4.

Coffee is grown in 15 provinces of PNG but 98% of production and virtually all of the high-quality arabica coffee is produced in just 6 provinces. CIC have opted to focus on established commercial small-scale grower/processor groups in the major production areas for arabica coffee. Effort will focus in areas with the most potential for increasing production of higher quality, high-value speciality coffees. CIC have chosen 2 groups in each province, giving a total of 12 groups with an average of 100 farming/processing households in each group (~1,500 households). Selection of groups is based on prior experience of the groups commitment to improving their output. All of the smallholder groups have established links to one of the major exporting companies mentioned above.

II. PROJECT GOAL, OBJECTIVE, OUTPUTS & ACTIVITIES (LOGICAL FRAMEWORK)

7. Project Goal / Impact

What is the overall goal of the project? The goal should describe (in one statement) the expected longer-term impact or positive change to which the project will contribute, particularly in terms of market access, the SPS situation and poverty reduction.

The goal of the proposed coffee project is for “Increased competitiveness & sustainability of PNG coffee industry in terms of consistent supply of high quality safe coffee from smallholder driven value-chain, resulting in increased sales to premium markets impacts positively on the livelihoods of 2.5 million rural households”.

The PNG coffee industry needs take innovative approaches to support improvements to smallholder coffee production and processing. An upward trend in volumes and value of exports will be a good indicator. However, the real indicator of the longer-term success of the proposed intervention will be an increased percentage of exports of high-grade coffees and a reduction in exports of lower-grade coffees. The PNG coffee industry relies on smallholder growers and processors for 86% of its supply base. Improvements in the overall performance of the industry in terms of increased sales of higher quality products will have a direct impact on rural livelihoods of 2.5 million coffee growing & processing households and communities through increased returns on coffee sales and payment of price premiums for higher grade products.

8. Target Beneficiaries

Identify the final beneficiaries (e.g. small farmers, producers, workers, consumers, etc.) and explain how they are likely to benefit from the project, quantifying these benefits as far as possible. See Qn. 15 (h) of the Guidance Note.

The primary beneficiaries of the project are the members of the smallholder coffee growing and processing groups involved in the project. The members of these groups are all households involved in small-scale production of coffee, some households are involved in coffee processing but in some cases processing has become a centralised activity of the growing and processing group. CIC have selected 12 groups spread across six provinces in the highlands of PNG. The provinces were selected on the basis of their percentage contribution to coffee exports in 2015/2016. The size of the groups varies but it is expected that there will be around 100 committed households from each group providing at least 1,200 beneficiary households for the proposed project. The safety and quality management systems and protocol for coffee production and processing will be implemented by these households. If the work is successful, the number of households is likely to increase during the life of the project as more members of the grower group decide to become involved. For peer group training purposes, CIC aim to train a minimum of 2 persons per household (male and female) plus group leaders and envisage at least 2,500 people benefiting from the peer group training programme at the rural level.

Five commercial coffee companies have been chosen for participation in the STDF project (see Section 6). These companies will benefit directly from professional expertise to develop and implement the management systems and protocol. All of the information and material generated will be in the public domain and will be publicised so that companies and groups not directly involved can access the outputs of the project. Personnel from the 5 export companies will also benefit from the opportunity to become part of the core of qualified instructors described in more detail in Section 9.

Tourism is a growing industry in PNG that creates opportunities for local promotion and sale of high-quality PNG coffee from the smallholder groups. However, the marketing of the coffee can be let down by poor preparation at point of sale. This is mainly due to the fact that the majority of baristas in PNG have received no recognised training in how to prepare a high-quality cup of coffee. The CIC in collaboration with the Australia Pacific Technical College (APTC) will use the STDF project to create and deliver a certificate course for coffee baristas on a cost sharing. The plan is to train 55 baristas from hotels, coffee shops, coffee outlets (including some run by grower/processor groups) and the local airlines in the skills necessary to provide a high-quality cup of coffee. The 55 baristas will be drawn from outlets in 7 provinces. These provinces have been selected on the basis of levels of tourist activity creating opportunities for promotion and sale of PNG coffee. The intention of CIC is to use the barista training programme to encourage increased sales and promotion of smallholder produced coffee through tourist outlets. Marketing of smallholder coffee to tourists creates another opportunity to increase income going directly to smallholder production and processing groups.

(a) Gender-related issues

Identify and address any specific needs and opportunities linked to gender in the project. This should include an analysis of the possible positive/negative effects of the project on gender equality. For instance, how are different genders involved (e.g. as producers, farmers, traders, workers in food business operations) in particular value chains of relevance to the project, what constraints (if any) do they face and how could they be addressed to take advantage of new opportunities? How are different genders expected to benefit from the project? Inclusion of gender-specific indicators, wherever possible, is encouraged.

Men and women are both involved in coffee production and processing and should benefit equally from access to the opportunities created by the project. However, in CIC's experience, women are often excluded from access to training opportunities in the male dominated society of rural PNG. CIC will thus ensure that the farmer profiling and training needs analysis activities are gender equitable and inclusive. In setting up and running the peer group training sessions and any activities associated with awareness creation and implementation of the management systems, it will be necessary to make clear to the management of the grower/processor groups that involvement in the project is conditional on women's equal participation in the project activities. This approach has proved successful in other projects such as the World Bank funded PPAP programme. The CIC team will ensure that the core team of instructors including women and that ~50% of the farmers who receive the peer group training are female.

9. Project objective, outputs and activities (including logical framework and work plan)

Describe the immediate objective (purpose or outcome) of the project, the outputs (measurable results that contribute to the objective) and the activities that will be carried out to achieve the specified outputs. This description should be based on, and consistent with, the logical framework for the project.

The objective of the proposed coffee project is for “increased financial returns, yields, quality/safety and market access for smallholder coffee growers & processors and grower/processor groups”.

To be more competitive in terms of quality/safety and volume the PNG coffee industry needs to support the smallholder supply base to adopt better management systems for primary production and coffee processing. The market for arabica coffee is very quality conscious paying higher prices and premiums for higher grades of coffee. Lower grades not only sell for a low price but are also subject to price discounting on the major markets such as the New York Coffee Exchange. If the smallholder growers and processors produce higher quality and bigger volumes they will not only be able to access better market opportunities but will also obtain a higher return on their investment. Experience suggests that farmers and processors respond positively to higher incomes and will invest more resources in their coffee gardens, thereby creating a virtuous circle.

Investments in coffee can take several years to yield their full potential, but based on CIC's calculations if at least 50% of the groups targeted by the project invest in better management systems they should see at least a 15% increase in sales of coffee in tonnes and 20% increase in value of coffee sales within 3 years of the start of the project. Within 5 years of the start of the intervention tonnage should have increased by 20% and value by 25%. These calculations are based on an upward shift in quality, whereby at least 50% of coffee sold by the grower/processor groups is of PSC (Premium Smallholder) grade and not more than 50% is of Y1 grade. To deliver the objective, the proposed coffee project has the following outputs and activities.

Output 1. Members of smallholder groups implement risk-based management systems to improve yields, safety & quality of coffee. Groups implement better governance and business practices.

1.1 Review of available information & existing approaches (GAP, processing, governance, business management, training etc) to create a common resource. The proposed coffee project is intended to add value to previous efforts both in PNG and internationally. Much has already been done on various aspects of management of food safety and quality smallholder production and processing of coffee, management of Ochratoxin “A” is well

understood internationally. CIC and the exporters already have useful materials on good agricultural practices, group governance and business management and a useful selection of training materials. However, some of the materials required for a systematic approach to management of food safety and quality for smallholder production are weak or absent. Some aspects of good agricultural practice are new for farmers in PNG. The concept of peer group training is novel but has the potential to dramatically improve delivery of extension advice and training messages to rural communities. The first activity for the proposed coffee project will be to make a review of the information and approaches already available and to prepare a resource of material to avoid wasting resources creating materials that can be had off the shelf. CIC and partners will also identify the weaknesses and gaps in the current materials that will be filled in during the proposed project.

1.2 Awareness creation for smallholder grower groups & private sector companies (signing of stakeholder agreements). Whilst developing this proposal, CIC have sought the interest of a group of coffee processor/export companies and smallholder grower/processor groups. Meetings were held with all of the exporters and a selection of smallholder grower/processor groups all of whom expressed a strong desire to be included in the proposed coffee project. Two of the smallholder groups (Binax Coffee Cooperative & Untoa Kosa Rainbow Coffee Cooperative) provided letters of support (see Appendix 4). Activity 1.2 will focus on meeting with the members of the twelve-smallholder grower/processor groups to explain the proposed coffee project's activities, potential benefits and to offer the groups and individual members the opportunity to formally sign up as participants in the project. Past experience shows that not every household in a grower/processor group will make a formal commitment at the start of the project, but records will be kept of those who seem likely to commit at a later date so that they can be brought in when they are ready to make the necessary commitments.

1.3 Updating and consolidation of existing baseline information on the grower/processor groups. For effective management it is essential to have a detailed profile of each household in the 12 grower/processor groups linked to the proposed coffee project. These profiles contain basic information on area of land planted with coffee trees, application of good agricultural practices, use of inputs, yield figures for the previous season, grade(s) of coffee sold with volumes etc. The profile is a useful tool for the M&E team as it sets the baseline for the project. However, it also forms a vital part of the management system providing information to the buyer on the supply base and enabling the growers to see their current status and to compare this with improvements resulting from investment in better management practices. The grower/processor groups will keep this information in hard format. The buyers and the CIC team will have access to the data in electronic format as part of the management system. For the proposed coffee project it will be necessary to prepare detailed profiles for 1,200 households (100 member households per grower/processor group). Some information is already available as the export companies and CIC already work with these groups but gaps are likely to exist and the existing information is not consolidated or in the format required for development of an effective food safety and quality management system hence the need to update and consolidate the baseline information into a new set of profiles.

1.4 Design, piloting & roll out of smallholder friendly food safety and quality management systems (production & processing) suitable for group based production/processing (group based management systems to optimise output) includes governance & business management for groups. The design and implementation of effective food safety and quality management systems for smallholder production and processing of coffee is at the heart of the proposed coffee project for PNG. As a first step, CIC will work with the private sector partners to draft guidance and record keeping documents for management of food safety and quality during production and processing of coffee. These systems are intended primarily for use by grower/processor groups but can also be used by individual smallholder

farmers. A traceability system with appropriate records to ensure both vertical and horizontal traceability of coffee will be included. Vertical traceability of coffee should be to farm level; farm records to enable horizontal traceability of key processes will be held on farms in a farmer file and also at the group level. Having a double record sets reduces the potential for accidental loss of important data.

For primary production, the focus will be on good agricultural practices (GAP). GAP measures will include planting material (for new/replacement planting and better pruning practices for established trees), efficient use of soil and water, optimal use of inorganic and organic fertilisers, effective use of crop protection products and application of integrated crop management (ICM). CIC's ICM package will include coffee garden scouting for identification of pests & diseases and determination of control thresholds. Management controls will also be developed for correct harvesting techniques and garden hygiene to eliminate pest and disease reservoirs. Post-harvest controls will cover storage and transport of coffee cherries.

Management of food safety and quality during processing (by smallholder groups) will include best practices and guidance on correct procedures for de-fleshing, fermentation, washing, drying, resting, de-hulling and grading of coffee. CIC will incorporate procedures for minimising SPS risks associated with development of ochratoxin "A" during drying, storage and transport of coffee. Control measures for food safety will be based on the Codex guidance on this subject CAC/RCP/69-2009 and industry requirements developed by International Coffee Organisation and European Coffee Federation.

CIC will also support the smallholder grower/processor groups to introduce standardised records for production, handling and sale of coffee (including volumes linked to grades), deliveries of coffee to customer and receipts for delivery. These records should improve understanding within the value-chain of costs of production, yields and returns on investment linked to improvements in quality.

The draft materials for the food safety and quality management systems will be piloted with 5 of the groups over a 6-month period to enable weaknesses to be identified and modifications and improvements to be made. The final version of the management systems will be rolled out to the 12 grower/processor groups during the second year of the project, mentoring and support will be provided through CIC and private sector extension personnel. Adoption of the management systems will be monitored through examination of group records and buyer feedback (especially records of quality and volume) verified by audits as part of the national coffee protocol developed as part of Activity 2.1.

1.5 Piloting of group based green coffee processing to optimise quality & value addition – documentation of business case for investment in SME processing. Smallholder grower/processor groups have several options for dealing with their coffee post-harvest. The simplest option is to sell the coffee cherries to one of the large processor/exporters. This approach requires the least effort, fewer management controls and minimises SPS risks. However, coffee cherries have a relatively low-value on the market. Many smallholder groups wish to add value to their production by producing either parchment or green coffee. Parchment coffee is an intermediate product requiring further processing to convert it into green coffee. To prepare parchment coffee using the wet process, coffee cherries are de-fleshed using a pulping machine. The outer flesh is discarded and the coffee beans (with an outer layer of mucilage) are fermented in open tanks washed and then sun-dried. The sun-dried product is known as parchment coffee. Parchment coffee has a lower volume than fresh cherries, has a longer shelf-life and is easier to transport than fresh cherries. Parchment coffee has a higher-value than fresh cherries but requires a higher level of management controls to avoid reductions in quality during processing. SPS risks are higher as opportunities exist for contamination with ochratoxin "A" during drying, storage and transport and coffee berry borer larvae can survive in parchment coffee creating

opportunities for pest spread during transport of the parchment coffee to the processor/exporter's factory. Export companies interviewed during development of this proposal complained about inconsistent and poor quality of smallholders' parchment coffee due to inadequate equipment and poor management of processing in rural areas. Production of green coffee is the final step of the process and this product has the highest value on the market. Green coffee is produced by resting parchment coffee for several weeks in open bags or storage bins. After resting the parchment coffee is de-hulled to form green coffee which is then graded.

To obtain the highest level of value-addition and best return on their investment smallholder grower/processor groups need to be able to produce green coffee. However, most of the groups lack the equipment for processing of coffee and the necessary management systems are absent resulting in inconsistent quality and increased SPS risks due to production of Ochratoxin "A" during drying and storage. CIC has supported 5 groups to install equipment for coffee processing and will support another 5 groups during the life of the proposed coffee project. This equipment is powered by solar electricity (solar panels, storage battery and inverter supplied as part of the package) to reduce operating costs and environmental impact. The cost of processing equipment is being shared between CIC and the smallholder grower/processor group and will not be a cost for the STDF. However, there is still discussion regarding the business case for this type of smallholder processing and the requisite safety and quality management systems are lacking. Implementation of management systems for processing will be covered under Activity 1.4 of the STDF project. Under Activity 1.5, CIC and partners will work closely with groups producing green coffee to document the business case for smallholder processing of green coffee. A robust business case will prove useful for encouraging investments in processing by smallholder groups and joint investments by export companies with smallholder groups.

1.6 M&E to collect and synthesise data on delivery of project objectives & documentation of success stories. The monitoring evaluation component is discussed in detail in section 18 of this proposal. CIC will provide the specialist personnel for the monitoring and evaluation of the proposed coffee project. The main job of the M&E team will be to collect the data and provide the analysis necessary for measurement of delivery and impact of the project in terms of progress towards meeting the objectively verifiable indicators (OVIs) defined at objective and output level of the logical framework (see Appendix 1). The team will also document narrative and pictures for individual success stories. Success stories are useful for promotion of the outcomes of the project to the local donor community, the coffee industry and grower/processor groups external to the project. These stories will also be made available to STDF with contact details of stakeholders named in the story. This will allow the STDF to make their own follow-up of impact and help tell the human story behind the proposed coffee project.

1.7 Development of electronic resource of all information /materials generated by the project with global access, hosted via CIC website. The fieldwork in PNG has obvious benefits for the PNG coffee industry but CIC believe that the outcomes of the proposed coffee project could have a much wider impact if made available to coffee value-chain stakeholders in other coffee producing countries. To achieve this aim it is essential to present the material in a widely-used language and for this reason CIC provide a master set in English to supplement the materials in Tok Pisin developed for use in PNG. CIC will create an electronic resource of best practice for the management of quality and safety in smallholder production and processing of coffee. The resource will include the management systems, the national protocol for smallholder coffee and the peer group training system. To ensure sustainability the electronic resource will be hosted on the CIC main website and this material will continue to be updated after the end of the project. Regular updating is ensured by incorporating the outcomes of the project into the regular work programme of CIC and the private sector partners and via the creation of a national curriculum for education of adults

on coffee linked back to the existing national curriculum for coffee created for schools in PNG. To raise awareness of this resource internationally, CIC will request linkages between the CIC website and those of the ICO and the STDF.

1.8 Dissemination seminar for coffee industry stakeholders & donor representatives. This activity is intended to raise awareness of the successful outcomes of the STDF coffee project among coffee processing and exporting companies who were not directly involved in the project. CIC will work with the private sector partners and grower/processing groups as the key messages will be stronger when presented directly by those directly involved in the coffee value-chain. The efforts of the partners will be supported by presentations by experts from CIC. The seminar will include a discussion forum for the industry to make recommendations and plan for scaling up and sustainability of the outcomes of the project. Representatives of the major donor organisations will be invited as further donor support would be beneficial in pushing forwards with wider uptake of the outputs of the coffee project.

Output 2. Appropriate & verifiable production & processing protocols for smallholder production and processing of coffee developed in PNG and adopted by the coffee industry.

2.1. Development and implementation of smallholder friendly protocols for coffee (PNG driven certification with annual audit by CIC to verify compliance with control criteria for successful food safety management during production and processing of coffee).

CIC believe that it would be useful to work with their private sector partners to develop a national protocol for management of food safety and quality for smallholder based production and processing of coffee deriving from the international standards of CAC. The protocol would be a valuable tool for assessing the effectiveness of implementation of the food safety and quality management systems and uptake of training messages and would also highlight weak areas requiring corrective actions.

The protocol will define control points with compliance criteria for all aspects of production and processing of coffee involving smallholders. There will be an auditors' checklist and a sanction matrix for non-compliances to assess the seriousness of the non-compliances and determine if the audit score constitutes a pass or fail. Procedures will be provided for corrective actions in the event of a failing score. The protocol will have options for conventional and organic production and individual or group certification and define where control points can be deemed as non-applicable. Auditing will take place annually the auditor will come from the CIC coffee inspection team. The inspector is not involved with providing extension advice or training and is not part of the value-chain and is therefore independent. The audit will be integrated into the normal process of farm and processor inspections conducted by CIC and thus will not incur additional costs for the smallholder groups.

Development of the draft version of the protocol will be done by a team drawn from CIC and private sector partners. The protocol team will put together the basic documents in consultation with the grower and processor groups. The draft version will then be piloted with two grower/processor groups to obtain feedback from the stakeholders and determine the strengths and weaknesses of the draft documents. The protocol will be modified taking account of any issues identified during the pilot and then rolled out to the grower/processor groups involved in the STDF coffee project. Audits will be conducted at the end of years 2 and 3 of the project without incurring additional costs for the smallholders (see above). The results from the audits and requirements for corrective actions will be analysed and used to guide the extension and training teams to identify areas requiring more support.

Output 3. National coffee curriculum for adult learners and peer group train programme developed and implemented. National certificate course for coffee baristas developed and made available for members of the hospitality and tourism industries.

3.1 Development & implementation of national curriculum for coffee production and processing, development and implementation of peer group training programme for smallholder growers/processors of coffee. The provision of training on coffee production and processing is provided by CIC, private sector partners and by some non-governmental organisations such as faith groups that support smallholder production and processing of coffee. However, concerns have been raised that some instructors provide conflicting or inaccurate messages, training may take place at inappropriate times of the year and training programmes are not standardised. The number of instructors is also limited and this makes it difficult to reach large numbers of coffee households on a regular basis. Provision of training for smallholder coffee growers and processors requires innovation to standardise the training programmes and introduce techniques that provide a greater reach by making more effective use of the available instructors. CIC and partners believe they can address the first issue by developing a national curriculum for training of adults on coffee production and processing and linking the delivery of the curriculum to the coffee calendar. The quality of training provision can be improved by providing a standardised training programme for key instructors (CIC & private sector) that covers the key training messages and latest thinking on training techniques.

The final issue requires an innovative approach to reach a wider audience whilst maintaining the same level of qualified instructors. CIC and partners believe that the cascading peer group training approach (used successfully in East and Southern Africa for smallholder producers of export quality fruits and vegetables) offers a way forward for the coffee industry in PNG. The starting point for the system will be for eight subject matter specialists (drawn from CIC and the private sector) to come together to create training materials suitable for use in peer group training in PNG.

The content of the peer group training system will include:

- Template for the training needs analysis of instructors;
- Instructors manual on peer group training techniques;
- Instructors manual on good management practices for production of coffee by smallholders;
- Instructors manual on good management practices for processing of coffee by smallholders;
- Sample questions for oral assessment of competence of peer group trainers;
- Smallholder booklets illustrating key training messages for production and processing of coffee;
- Resource of material for preparation of peer group training posters including a library of line drawing artwork (prepared by a local artist) and photographs of good and bad practices.

The subject matter specialists and instructors will have access to all of the above material in electronic form. In addition, they will have access to the following materials which are NOT intended for direct use in peer training at rural level:

- Copy of the national curriculum for training of adults on coffee production and processing;
- Copy of the coffee calendar;
- Copy of power point presentations delivered as part of the instructors' course;

- Video clips of good and bad practices in production and processing of coffee and peer group training techniques for use in instructor training;
- Copies of a selection of completed peer group posters (model sets) to give advice on possible layouts;
- An electronic resource of copies of relevant training and extension materials prepared in PNG and internationally;
- Guidance document on how to assess the performance of a peer group trainer during an actual peer group training session.

The subject matter specialists will provide refresher training and upgrade of skills for 60 of CIC's best instructors. The content of the training programme will be guided by the outcome of a training needs analysis. The instructors will receive training and access to materials to enable them to provide training in peer group skills for members of the smallholder grower/processor groups. The peer group approach is designed to equip members of the smallholder groups to create sets of training posters using a resource of line drawings and photographs of good and bad practices provided as part of the proposed coffee project. The peer group trainers provide training to their peers using short discussion sessions (~10 minutes per poster). A training session typically involves small groups of trainees moving around a set of 6 posters hosted by 6 peer group trainers. At the end of the session, the leader of the session provides a short summary of the training and answers any outstanding questions. The peer group approach is more effective than conventional methods as the peer trainers and their posters are always present within the group creating opportunity for ad-hoc refresher trainings for individual members of the group when required.

The 60 instructors will provide training for 1,500 peer group trainers across the 12 grower/processor groups over a 12-month period. The 1,500 peer group trainers will provide a much-expanded resource for training on key aspects of coffee production and processing at the rural level. These trainers will be able to reach all of the individuals within the households that belong to the group on a regular basis. The expert instructors will make mentoring visits to the grower/processor groups to ensure that training messages are being delivered correctly and in an effective manner. Once the peer group system is established the expert instructors will continue to provide annual refresher training for the peer group trainers to update their knowledge and ensure that good practices are maintained.

3.2 Development of practical barista training for national outlets and training for coffee producers to target sales to cruise ship visitors (linking high-quality product from project groups to premium markets).

Tourism is a growth industry for PNG - according to the PNG Tourism Promotion Authority (PNG-TPA), visitor arrivals have increased from 77,730 in 2006 to 197,632 persons in 2016. The total contribution to the PNG economy from visitors has increased from US\$222 million in 2006 to US\$627 million in 2016. The PNG-TPA predicts that visitor numbers will increase to ~300,000 per annum by 2021 with an estimated income for the economy of US\$964 million. Tourism creates opportunities for local promotion and sale of high-quality PNG coffee from the smallholder groups who have made the effort to improve quality and output. Tourists who enjoy good coffee on holiday are likely to purchase coffee to take home with them. Some will be inspired to look for PNG coffee in the shops back home. This should help drive customer demand for PNG coffee in target markets such as Australia, Japan and the USA. However, the marketing of the coffee can be let down by poor preparation at point of sale. This is mainly due to the fact that the majority of baristas in PNG have received no recognised training in how to prepare a high-quality cup of coffee.

As part of Activity 3.2, CIC will collaborate with the Australia Pacific Technical College (APTC) to create and deliver a certificate course for coffee baristas on a cost sharing basis.

The proposed coffee project will pay for the course fee, and the trainee or trainee's company will take care of travel and subsistence costs. APTC has been selected as they are the leading college for vocational training in PNG and have the resources, capacity and established programme of courses for the hospitality industry making them the ideal partner. The plan is to train 55 baristas from hotels, coffee shops, coffee outlets (including some run by grower/processor groups) and the local airlines in the skills necessary to provide a high-quality cup of coffee. The 55 baristas will be drawn from outlets in 7 provinces/towns. These provinces have been selected on the basis of levels of tourist activity creating opportunities for promotion and sale of PNG coffee. The list of target provinces/towns is summarised in table 2 below. The number of trainee per target location is a reflection of visitor arrivals and the development of coffee businesses in the area. The two highland provinces have relatively small numbers of visitors but have high numbers of outlets for coffee sales, hence the higher numbers of trainees for these areas.

Table 2 List of provinces selected for the barista training programme

| Name | Visitors 2016¹ | % of total | Rationale | Trainees |
|----------------------------|----------------------------------|-------------------|---------------------------------|-----------------|
| National Capital District | 106,605 | 50 | Capital of PNG | 15 |
| East New Britain (Rabaul) | 14,586 | 7 | Cruise ships, diving & culture | 6 |
| Milne Bay Province | 13,619 | 6 | Cruise ships, diving & culture | 6 |
| Madang Province | 7,596 | 4 | Cruise ships, surfing & culture | 5 |
| Western Highlands Mt Hagen | 6,326 | 3 | Culture & wildlife | 10 |
| Eastern Highlands Goroka | 4,930 | 2 | Culture & wildlife | 10 |
| East Sepik Wewak | 3,846 | 2 | Surfing, diving & culture | 3 |

¹ Based on data for visitor arrivals in 2016 supplied by the PNG Tourist Authority

The course content will be developed in collaboration with the industry to ensure it matches the end-users needs. The course will be accredited and in keeping with the normal practice of the APTC the course standard will match those of equivalent courses in Australia and New Zealand, thus trainees will have an internationally recognised qualification. CIC will make direct contact with businesses in the target areas to offer them the opportunity to select staff to attend the course.

Building stronger relationships with some of the top outlets for coffee in PNG will create an opportunity for CIC to promote high-quality smallholder produced coffee to these outlets. Smallholder grower/processor groups will be able to access this opportunity if they demonstrate the ability to produce higher quality coffee consistently. This activity can be linked to the national cup of excellence competition thus giving the smallholders a powerful incentive to work hard to implement better management practices within their groups.

10. Environmental-related issues

Briefly discuss any environmental-related issues and implications that are relevant to the project. This should cover the environmental implications of project activities,

including any SPS control measures promoted, and their potential positive and/or negative implications or consequences. Specifically:

- **To what extent does the project contribute directly or indirectly to environmental protection (e.g. through reduced use of pesticides/chemicals or use of less toxic pesticides, adoption of integrated pest management systems, reduced burden on land through improved animal production practices, etc.)?**
- **Does the project have any possible negative implications on the environment (e.g. increased use of pesticides, chemicals, antibiotics)? If so, what are these consequences and how will they be managed or reduced? See Qn. 15 (j) of the Guidance Note.**

Much of PNG's smallholder production is currently either organic or only uses relatively limited amounts of herbicides and insecticides and inorganic fertilisers. This is mainly due to the farmer's perception of the high cost of inputs and lack of understanding of the costs of production versus the potential benefits of a more intensive production system. In addition, most farmers have little knowledge of commercial farming of coffee. Current yields are well below the potential for the available land area and varieties of coffee. In the future, it seems likely that more farmers and farmer groups will seek to increase yields from the available land resulting in an increase in the use of chemical inputs. Under the current poorly managed system there are considerable risks of application of inappropriate or banned chemicals or incorrect doses of approved ingredients. Without proper management, yields may be increased but at the expense of the environment and worker safety.

The outcomes of the proposed coffee project would have a positive impact as it would introduce a smallholder friendly safety and quality management system for primary production of coffee. Under this system farmers would keep basic records of farm inputs and would implement the basics of integrated crop management (ICM). Improved linkages between the farmers, CIC/DAL and the private sector buyer will improve the flow of information to the farms on correct choice of chemicals, dosage, pre-harvest intervals and conditions for usage. Coffee garden scouting will set pest and disease thresholds for use of chemical control. The ICM system will offer alternatives to pesticides and options for complementary use of reduced amounts of pesticide with other control measures. Implementation of the outcomes of the project will allow yields to be increased and quality increased in a sustainable manner without risk to the environment or worker safety. As part of the coffee project, a national protocol for coffee production and processing with annual audits (auditing to be integrated into the routine annual inspections conducted by CIC to avoid the potential burden of audit costs associated with private voluntary standards) will be developed by CIC and the private sector partners in collaboration with the farmer groups. The protocol will be designed to meet both the needs of the producers and processors in PNG and the requirements of the major international buyers of PNG coffee. It is CIC's intention to keep the PNG protocol as simple and cost effective as possible but the content will be based on international standards (CAC).

In developing the smallholder food safety and quality management system and national protocol for coffee production and processing the CIC team and private sector partners will include options for organic farming. Material for the organic option will be aligned closely with international market requirements such as those found in the NASAA (National Association for Sustainable Agriculture Australia Limited) standard of 2016.

CIC envisage only positive outcomes from the outcomes of the proposed coffee project and do not believe there will be any negative environmental impacts.

11. Risks

Briefly discuss the major risks identified in the logical framework and explain what actions will be taken to mitigate or manage them.

In the design of the logical framework CIC made the following assumptions:

- There are no unforeseen incursions by emerging pests or diseases that result in significant reductions in product volume or quality (High Risk);
- Smallholder farmer groups are committed to implementation of better practices (Low Risk);
- Private sector partners support smallholder groups to implement better practices effectively (Low Risk).

A failure in one or more of these assumptions would impact negatively on delivery of the proposed activities, hence the risks associated with each of these assumptions must be understood and managed effectively.

Emerging pests and diseases represents the highest level of risk due to the identification of coffee berry borer (*Hypothenemus hampei*) in the highlands of Papua New Guinea in mid-February 2017. Coffee berry borer (CBB) is probably the most serious pest of coffee with the potential to cause dramatic reductions in quality and reductions in volumes of coffee of between 40% and 80% if no remedial action is taken. CBB is not a known problem for coffee production in PNG. There were incursions by CBB in 1992 and 2009-2010 but these were in remote areas and were easily contained and eradicated. The present incursion is associated with areas close to the main highlands highway with much greater potential for pest spread. The CIC, DAL and National Agriculture Quarantine Inspection Agency (NAQIA) have taken prompt action to put in place surveillance teams and to establish check-points on the main road. Six provinces have been declared as quarantine areas with severe restrictions on movement of coffee cherries and parchment coffee. Government officers will seize and destroy any coffee showing signs of CBB infestation. Follow-up actions will involve tracing infestations back to farms and destruction of infested trees.

Given the seriousness of the CBB outbreak the advisability of going ahead with the proposed project could easily be raised. However, in reality the proposed project is of vital importance in the long-term fight against CBB and other future pests and diseases. CBB is favoured by poor management of primary production including close planting of trees, absence or inefficient pruning, weed growth and poor hygiene (including fallen cherries left on the ground and unpicked cherries left on the trees) in the coffee garden and a lack of pest and disease management. Poor management of post-harvest processing can result in high moisture contents in the dried coffee. Moisture contents of >13.5% for arabica and >12.5% for robusta will favour the survival of CBB larvae in parchment coffee. High moisture contents will also favour the production of ochratoxin "A" the most serious food safety risk associated with coffee. Limited adoption of good agricultural practices (GAP) and poor management post-harvest are associated with the majority of smallholder coffee farms in PNG. The proposed project aims to develop and roll out a smallholder friendly food safety and quality management system for production and processing of coffee with associated training packages and national curriculum for adult education on coffee and an auditable standard with annual verification of compliance. The outcomes of the coffee project will make a significant contribution to management of CBB and other pests and diseases. CIC plan to introduce a system of coffee garden scouting (a novel innovation for smallholder coffee in PNG) that will not only assist farmers in management of known pests but provide

more rapid feedback to the authorities of any new pests or diseases appearing on coffee farms in PNG.

The majority of PNG's smallholder coffee farmers are unfamiliar with implementation of quality and safety management systems for production and processing of coffee. Past experience in other parts of the world suggests that not all farmers will be willing or able to adopt the food safety and quality management systems developed under the project. However, CIC are confident that a significant percentage of farmers will adopt these measures and that such farmers will become the backbone of the future development and prosperity of the PNG coffee industry. Discussions with stakeholders during the development of this proposal provided encouraging examples of farmers and farmer groups who recognise the benefits of adopting better food safety and quality management practices on their farms.

Outspan-Coffee provided the example of a smallholder farmer who facing problems with falling yields and quality resulting in reduced income levels. In 2013 this farmer produced just 600kg of Y1-Y3 grade coffee making an income of US\$579 from coffee sales. In 2014 the farmer adopted a package of GAP measures including optimal pruning of the trees and better management of post-harvest processing of the coffee cherries. In the 2015 season the farmer produced 300kg of PSC (Premium Smallholder Coffee) grade coffee and made an income of US\$675. In 2016 the yield of the farm had increased to 1,020kg of PSC giving an income of US\$2,295. The farmer has re-invested some of the income in replacement coffee seedlings and is confident that yield of PSC coffee can be doubled.

The 100 farmers of the Unggai Bena Coffee Cooperative in the Eastern Highlands have worked with CIC and private sector buyers to adopt GAP and better management for coffee processing over the last 7 years. A price premium of US\$0.32 per kg of dry coffee beans has been introduced for higher quality coffee. These farmers have benefited from additional income (from the quality premium) of US\$321,543 over the 7year period. The 2017 premium of US\$64,308 (shared between 100 households) was paid in the form of equipment and materials to support further improvements on the coffee farms.

These examples demonstrate that PNG smallholders have the potential to benefit from adoption of an enhanced food safety and quality management system for coffee production and processing. As part of the project the CIC team will conduct a baseline and farm profiling exercise and sign up farmers and farmer groups to work with CIC and private sector partners to develop and implement the improved management practices, protocol and peer group training packages. Previous experience of CIC has allowed us to select farmer groups with a high level of potential for successful adoption of the food safety and quality management system. Not all smallholder farmers in a grower group will choose to participate and some may even join up and then drop out for various reasons. However, CIC's experience suggests that well governed small-scale grower groups will self-monitor the implementation of the food safety and quality management system and will replace non-performers with better growers.

Market access is a vital part of the value-chain and thus for the proposed project CIC has selected existing small-scale grower groups with established connections to major coffee exporters that in the experience of CIC have shown willingness to invest in development of smallholder based supply chains. Five companies have been selected on the basis of previous track record of forming close partnerships with smallholder grower groups for mutual gain. CIC recognises that the relationship between the growers and exporters is sometimes strained in PNG with both sides complaining of bad practices by the other party. Mutual distrust could become a major hindrance for delivery of the project. However, CIC will act as an independent mediator to resolve any issues between the growers and exporters. Data collected as part of the operation of the smallholder groups management

system, and from the exporters as part of the project M&E system should prove invaluable for improving transparency and providing objective and rational arguments for resolution of any disputes.

12. Sustainability

Explain how the results of the project will be sustained in the longer-term, addressing financial and institutional sustainability. See Qn. 15 (k) of the Guidance Note.

To understand the potential for long-term sustainability of the results of the STDF coffee project it will be necessary to look at each of the main outputs of the project. The main outputs of the proposed coffee project will be:

- A set of smallholder friendly food safety and quality management systems for production and processing of coffee;
- An auditable national protocol (based on international standards) for coffee production and processing that is adapted to the needs of small-scale growers and processors in PNG in terms of simplicity and cost-effectiveness;
- A national curriculum for adult education on coffee production and processing that cross links extension activities to the established national curriculum for education on coffee production and processing in schools;
- A peer group training programme with a minimum of 60 qualified instructors drawn from public and private sector agencies that links extension activity into the national coffee curriculum for adult learners and uses the coffee calendar to ensure timely delivery of appropriate training messages;
- A national certificate course for coffee baristas available for members of the hospitality and tourism industries in PNG.

The long-term success of the smallholder friendly food safety and quality management systems will be determined by the business case for implementation as seen by the coffee exporting companies and grower/processor groups. Positive results in terms of increased yield, higher quality and better price per kg for the end-product will encourage more growers to want to implement the improved practices. However, the bottom line will be determined by costs versus benefits for both the grower/processor groups and the export companies. Implementation of the food safety and quality management systems will give the growers and processors a much better understanding of the costs versus income. If the benefits significantly outweigh costs this will drive the process of adoption of better management practices and encourage greater investment in coffee production and processing at rural level. To be successful the grower/processor groups need the support of their export companies. These companies want to see more product and better and more consistent quality. They will invest in supporting the adoption of improved food safety and quality management systems by their grower/processor groups as long as they see a good return on their investment (in terms of a higher volume of higher quality and higher value product). Experience from elsewhere in the world both for coffee and in high value horticulture have demonstrated the validity of CIC's thinking.

The national protocol (based on CAC standards) for coffee production and processing is a good idea within the national context. However, the business case for the protocol will be determined not only by the costs of implementation and maintenance of compliance but also by the reaction of international buyers to development of the protocol by PNG. If the buyer shows no interest in the protocol, does not value a PNG certification or simply demands

compliance with one of the international private voluntary standards the local protocol will be undermined. However, the national protocol still offers the industry value in terms of providing a harmonised mechanism for determining the level of compliance with good practices by small-scale growers and processors of coffee. If the costs and complexity of operation are kept to a minimum the protocol will have a good chance of becoming a successful part of the future food safety and quality management system for the PNG coffee value-chain.

The peer group training system and national curriculum for adult education on coffee production and processing build on the existing training and extension systems operated by CIC and the private sector. The outputs from the coffee project offer improvements in terms of quality of extension and training and ability to extend training messages to larger numbers of households in a cost-effective manner. CIC and the private sector have the necessary resources to continue to operate the systems established under the project. If the implementation of the smallholder friendly food safety and quality management systems is successful, the grower/processor groups will have a vested interest in expanding the peer group training programme at rural level. Getting the right training messages to all of their members and providing regular reinforcement of these messages will be an essential part of ensuring that the group gets better yields, higher quality and better income from their product.

The national certificate course for coffee baristas will become part of the training offer of the Australia and Pacific Technical College (APTC) in Port Moresby for members of the hospitality and tourism industries. Tourism is a growth industry for PNG, according the PNG Tourism Promotion Authority (PNG-TPA) visitor arrivals have increased from 77,730 in 2006 to 197,632 persons in 2016. The total contribution to the PNG economy from visitors has increased from US\$222 million in 2006 to US\$627 million in 2016. Bonafide tourists are increasing in number as is their contribution to the economy, in 2016 tourists contributed US\$209 million to the PNG economy. The PNG-TPA predicts that visitor numbers will increase to ~300,000 per annum by 2021 with an estimated income for the economy of US\$964 million. Hospitality is perhaps unsurprisingly the most popular course on offer at the APTC campus in PNG. In 2016, hospitality (food and beverage services) accounted for 11% of student enrolments. However, the hospitality course accounted for 64% of female applicants. The CIC team believe that adding a certificate course for coffee baristas to range of vocational courses on offer will prove popular and commercially sustainable due to the growth in tourist arrivals especially in the coffee producing provinces.

The proposed project will engage committed local stakeholders to develop and roll out a training programme targeted at smallholders which the public/private sector stakeholders are committed to maintain, use, sustain and scale-up in the future. It is based on strong national demand, local ownership and buy-in. This will enhance an ensure sustainability.

III. BUDGET

13. Estimated budget

A summary of the US\$ costs for the proposed coffee project for PNG (STDF/PPG/553) is given in Appendix 3. A detailed breakdown in PNG Kina and US\$ is provided in the attached spreadsheet. The spreadsheet in PNG Kina provides details of the breakdown of individual costs in terms of numbers of days of input, costs per day etc.

14. Cost-effectiveness

Explain how the project may be considered a cost-effective contribution to addressing the SPS problem(s) identified above, compared to alternatives (including no action). See Qn. 15 (p) of the Guidance Note.

The PNG coffee industry supports the livelihood of 34% of the population, the end-product has excellent potential to meet demand in high-quality, high-value international markets. However, the industry has undergone a consistent reduction in volumes and product quality over the last 20 years. New SPS risks in the form of pests such as the coffee berry borer threaten to destroy the industry. Many of the problems faced by the industry can be traced back to the lack of good management within the smallholder driven value-chain and cost-effective approaches for delivering and reinforcing training messages to large numbers of smallholder farmers. Taking no action to address these problems is not an option as the industry could be reduced to a non-entity. This would deprive at least 2.5 million rural people of their livelihood and take away PNG's 2nd largest sustainable source of export income.

CIC's innovative approaches for creating smallholder friendly management systems, national standards and peer group training programmes linked into a national curriculum for teaching adult learners on coffee production and processing offer value for money and long-term sustainability for the coffee industry in PNG. The potential for increased income via improved quality safety and export out-turn far outweighs the total cost of the investment required for the coffee project. The outcomes of the project have much wider applicability for smallholder driven coffee value-chains in other countries. Adaptation of the material should be straightforward at relatively low-cost and thus provide added value in the years to come.

IV. PROJECT IMPLEMENTATION & MANAGEMENT

15. Implementing organization

Identify the organization(s) responsible for project implementation and attach evidence of its technical and professional capacity to implement the project (i.e. a list of achievements and record of financial probity). If an STDF partner or third party acceptable to the STDF is proposed to implement the project, attach written consent from that organization (Appendix 5). See Qn. 15 (q) of the Guidance Note.

This proposal results from a PPG which was submitted to STDF by DAL. DAL and CIC took the lead in forming a team to work with the international consultant to deliver the PPG and prepare the proposal for a project grant for the coffee value-chain. DAL and CIC share the viewpoint that the proposed project offers a highly significant opportunity to build the capacity of CIC staff in design, management and delivery of international projects independent of an international managing agency. Reliance on international agencies to manage delivery of projects is very common as this is considered a low-risk approach. However, CIC believe that having complete control vested in a national organisation ensures that activities are better orientated to national requirements, provides a much greater sense of ownership and greatly improves the chances of long-term sustainability of project outcomes. For these reasons, the lead implementing organisation for the coffee project will be the Coffee Industry Corporation (CIC) which is a public-sector agency coming under the Department of Agriculture and Livestock (DAL). The CIC (www.cic.org.pg) was created in 1991 with the passing of the Coffee Act of 1991 that mandated CIC to regulate and provide services to the coffee industry of Papua New Guinea. CIC was created through the merger of several smaller bodies that had served the coffee industry since 1963. The CIC in its present form is divided into 2 divisions, namely the Industry Operations Division (IOD) and the Research & Grower Services Division (R&GSD). The IOD has responsibility for formulation of regulation and policy and official control of the coffee industry. Official control

functions include licencing and inspection of processing and export facilities, and inspection and certification of coffee products prior to export (this includes control of SPS risks in coffee). The IOD also deals with quality control and management of SPS risks in primary production. Officers from the inspection team are involved in dealing with the 2017 outbreak of coffee berry borer.

The R&GSD has three major research and extension sites spread across the major coffee producing provinces. The R&GSD is mainly responsible for strategic and adaptive research and education and training. On the research side the R&GSD focusses on demand driven adaptive research, involving on farm trials, establishment of model coffee gardens for research, demonstration and training purposes. The research team also works on development of better strategies for pest and disease control which are then disseminated through the education and training section. The extension and training section has 12 provincial extension and training coordinators and 40 extension officers. Activities include development of advisory and training materials, provision of technical advice and training to growers and processors, provision of training on governance and business practices for farmer groups, support for formation of cooperative associations and commercial grower/processor groups, administration of the freight surety programme, coffee credit scheme and coffee tree nursery development and farm rehabilitation programmes. Until recently training was focussed mainly on farm but in the last 10 years CIC have worked with the National Department of Education (NDOE) and University of Goroka to develop a national coffee curriculum for use in schools. The development of the curriculum and teaching materials was supported by AUSAID in a project that finished in 2008. The aim of the national coffee curriculum for schools is to mainstream coffee production and processing knowledge as part of the normal education for children residing in provinces where coffee is the major source of income for most households. The national coffee curriculum for schools complements the work of the extension services and makes use of information and materials generated by R&GSD and private sector agencies.

The CIC has a relatively diverse funding portfolio. Internal income is generated through a levy on coffee sales, service fees for inspections and licencing and rental income from land and properties. In 2015-2016 the income from the coffee levy was US\$1.4 million. The core funding covers the routine operations of the CIC. However, CIC also has access to funding from central government and international donor agencies for specific projects. This funding is managed by a special section of the CIC under the leadership of the Special Projects Officer (SPO) and has its own finance and accounting personnel. Central government is currently providing US\$1.34 million for the freight surety scheme, additional funding for extension activities and nearly US\$0.7 million for the emergency response to the 2017 coffee borer outbreak. The CIC has fourteen projects supported by the EU with a total value of US\$2.8 million and one project funded by AUSAID with a total value of US\$150,000. However, the biggest source of external funding is currently the coffee component of the World Bank funded Productive Partnerships for Agriculture Project (PPAP). The PPAP has a total funding of US\$50.2 million (~US\$25 million allocated to coffee) and will run until 2019. This project has a management unit embedded in the CIC headquarters in Goroka in the Eastern Highlands. The PPAP has played a major role in funding the rehabilitation of the coffee industry in PNG via nursery and planting projects and support for grower and processor groups.

The CIC has almost 55 years of experience of providing technical advice and support for the coffee industry and is well placed to take the central role in the proposed coffee project working in close partnership with the coffee processing and export companies and the commercial grower/processor groups. CIC has the financial capacity to support the implementation of the coffee project and to sustain support for the successful outcomes of the project in the longer-term. Increasing output and sales of coffee would itself have a

direct benefit for CIC as the income from the coffee sales levy would rise in proportion to the increased sales by the coffee industry.

16. Project management

Explain how the project will be managed, clearly indicating roles and responsibilities. If a Project Steering Committee is to be established for this purpose, specify its role, membership and meeting schedule, and explain how decisions will be made, etc. See Qn. 15 (r) of the Guidance Note.

The main implementing agency for the proposed coffee project in PNG will be CIC. CIC will make use of its existing management structures for project management. CIC will appoint an overall project leader who will be responsible for project management including liaison with the project leaders of the partner organisations and M&E specialist and preparation of the 6 monthly progress reports (technical & financial) for the STDF. The financial side of reporting will utilise the existing structures of CIC, internal financial reporting will be on a quarterly basis with phased release of funds based on successful delivery of activities from the previous phase. Financial reporting to STDF will follow the rules and guidelines defined by STDF. All external reports will be subject to approval by the CEO of CIC prior to release. However, the CEO of CIC will ensure that approval is given at least 1 week prior to the scheduled release date to ensure timely delivery to the STDF.

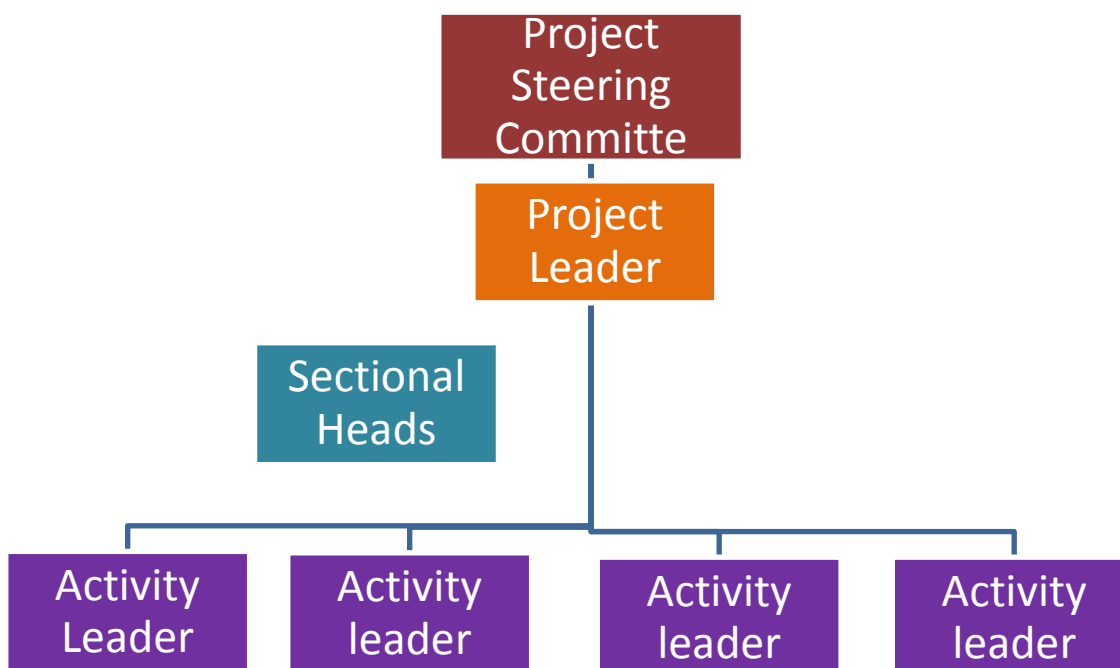
To ensure quality control and independent oversight of delivery of the activities CIC will establish a Project Steering Committee for the project. The permanent membership of the Project Steering Committee will consist of the CEO-CIC, General Managers of CIC, Senior Project Officer (SPO) of CIC, CIC project leader, project leaders from the private sector partners and representatives of the grower/processing groups and a representative of the Department of Agriculture and Livestock. CIC will invite other agencies, including interested donors and other development partners, to attend specific PMC meetings, where relevant. Attendance by external agencies will ensure the outputs, experiences and lessons achieved under the project can be picked up and mainstreamed in other bigger programmes, ensuring coherence, synergies and maximising impact potential. The SPO of CIC has been included as this officer is responsible for all CIC managed projects and has the authority to allocate accounts staff to take responsibility for financial management of the project. The Project Steering Committee will convene 4 weeks prior to each scheduled date for reporting to the STDF. The Project Steering Committee will have an oversight of project delivery and the authority to make recommendations for any adjustments required to ensure optimal and timely delivery of project activities and workplans.

The internal management structure for the project at CIC is summarised in Figure 7. The CIC project leader will have overall leadership but for the purposes of implementation the various project activities will be grouped under their appropriate CIC management sections. Each section will appoint an activity leader who will normally be responsible for delivery of several activities. The activity leaders will report directly to the project leader at CIC, as well as their section leaders at CIC. However, the section leaders will have no managerial authority with regard to the operational activities and management of the project. Please note that one of the activity leaders will be responsible for the M&E team for the project and will provide the project leader with the 6 monthly M&E report and data analysis.

CIC will be the implementing agency and the private sector partners will sign agreements to work with CIC and nominate focal points for implementation of the project. CIC have budgeted for the cost of development of the food safety and quality management system, protocol for production and processing of coffee, peer group training system and initial training of instructors from both private and public-sector agencies. Costs of training instructors from the private sector will be covered by CIC using funds from the STDF project. This will not involve any transfer of funds to the private sector partners or any sub-

contracting. Sustained roll out of the project will be funded and maintained by CIC and the private sector partners. Each partner organisation will provide the project leader at CIC with a 6-monthly progress report.

Figure 7. Internal management structure for the proposed coffee project at CIC



These internal progress reports will be scheduled for delivery 6 weeks prior to the scheduled date for reporting to the STDF. This is to allow time for the overall project leader at CIC to extract material from the internal reports for incorporation into the progress report for the STDF. The 6-week interval also ensures that the findings of the internal reports can be taken into account when the PSC meets.

V. *REPORTING, MONITORING & EVALUATION*

17. Project reporting

Provide information on the reporting schedule, including the type and number of reports (i.e. inception report, progress reports, final report) to be prepared. These reports will provide the basis for systematically monitoring progress and give recipients an opportunity to make substantive comments on any unanticipated issues that require attention. Progress reports should normally be submitted every six months unless an alternative reporting schedule is agreed. See Qn. 15 (s) of the Guidance Note.

The management structure and internal reporting system has been described in the previous section. CIC as the main implementing agency will be responsible for provision of progress reports to the STDF. These external reports will be sent by email to the STDF at 6 monthly intervals on the last working day of the month. A separate financial report with reconciliation

of funds and invoice for the next 6 months of funding will also be prepared. Both narrative and financial reports will be prepared according to the requirements of the STDF as specified by them in the head contract signed by STDF and CIC. The progress reports provide a record of progress that should be in the public domain and subject to feedback by stakeholders in PNG. CIC assumes that STDF will make copies of the narrative sections of the progress reports available on their website. However, CIC wishes to place copies of the narrative reports on their website with a facility for electronic feedback by stakeholders. This would be in addition to the publication of the reports on the STDF website.

The exact dates for each report will be determined when the start and finish dates for the project are agreed. However, an outline reporting schedule for progress reports to STDF is given below.

Year 1 end of quarter 2: Project inception report
Year 1 end of quarter 4: Progress report (end of year 1)

Year 2 end of quarter 2: Progress report
Year 2 end of quarter 4: Progress report (end of year 2)

Year 3 end of quarter 2: Progress report
Year 3 end of quarter 4: Final report including report of the dissemination seminar for the PNG coffee industry & donor representatives

The progress reports are intended mainly for project management purposes but will also document success stories provided by the M&E team. The project implementing team will also produce technical reports and materials related to the delivery of the activities. Copies of all materials will be provided to the STDF in an electronic format. Some of these materials would be challenging to send via email to the size of the files (such as video clips and photo libraries) and will be therefore be sent on a memory stick by courier.

18. Monitoring and evaluation, including performance indicators

Describe how progress made in project implementation will be monitored and evaluated. With reference to the logical framework, provide information on the key indicators (quantified to the extent possible) that will be used to monitor and measure the success of activities carried out. See Qn. 15 (t) of the Guidance Note.

The CIC has a section that specialises in providing monitoring and evaluation services for all projects directly managed by CIC. The M&E team for the STDF coffee project will have four staff including the M&E leader. The M&E leader will have responsibility for reporting to the STDF project leader at CIC. Internal M&E reports will be generated on a quarterly basis. However, the half yearly reports which feed into the progress reports to the STDF will be delivered to the CIC project leader by the M&E leader 6 weeks before the reporting deadline for the STDF progress report. This is to allow time for synthesise of the M&E findings into the progress report and for discussion of the M&E data by the Project Steering Committee.

The main job of the M&E team will be to collect the data and provide the analysis necessary for measurement of delivery and impact of the project in terms of progress towards meeting the objectively verifiable indicators (OVI's) defined at objective and output level of the logical framework (see Appendix 1).

The objective level OVIs are that within 3 years of the start of the project, at least 50% of the groups targeted by the STDF project record:

- 15% increase in sales of coffee in tonnes

- 20% increase in value of coffee sales
- At least 40% of coffee sold is of PSC grade or higher and not more than 60% of coffee sold is of Y1 grade.

CIC will continue to monitor results over a five year period. CIC and the private-sector estimate that 5 years on from the beginning of the project at least 50% of the smallholder groups targeted by the intervention will have recorded a 20% increase in tonnage of coffee sold and 25% increase in value of coffee sales. At least 50% of coffee sold will be of PSC grade or higher and not more than 50% of coffee sold will be of Y1 grade.

These OVI's are the real measure of impact of the proposed project providing a measure of whether adoption of better food safety and quality management systems, protocol for production and processing and peer group training programmes results in significant increases in quality, yield and income for the growers/processors. The implementation of the food safety and quality management systems will provide a greater understanding of investments in costs of production versus returns in the form of increased income due to better quality product. The coffee project is intended to run for 3 years but coffee is a seasonal crop and changes take time to become effective. CIC believe that success in the project would take around 5 years to achieve significant impact. This is not a problem for us as the project outputs will be integrated into the normal work of the grower/processor groups, coffee exporters and CIC.

The output level OVI's are more mechanistic and will provide the project partners, CIC project leader and the Project Steering Committee with a measure of progress with delivery of the project. The OVI's for each output are as follows.

Output 1 By the end of year 3 of the project:

- 1.1 At least 50% of the members of the smallholder grower/processor groups (~650 households) implement the improved management systems.

Output 2 By the end of year 3 of the project:

- 2.1 At least 60% of the members of the smallholder grower/processor groups who implement the management system (~400 households) adopt the national standard and pass the verification audit.

Output 3 By the end of year 2 of the project:

- 3.1 National curriculum for adult learners and peer group training packages completed;
- 3.2 At least 60 instructors drawn from 6 provinces complete the instructors course;
- 3.3 Instructors provide peer group training for at least 1,500 individuals in the 12 grower processor groups;
- 3.4 At least 50 coffee baristas from businesses in 7 provinces pass the National certificate for coffee baristas.

The M&E activities start in year 1 with updating of profiles for the members of the 12 grower/processor groups. This activity sets the baseline for CIC's understanding of the status of the growers/processors. What yields do they achieve, what is the quality of their product and what income does it provide. What management practices are already in place and what are the areas of weakness for the groups and the individual households that impact on maximising the return on investment in coffee production and processing. CIC will

also be conducting a training needs analysis to provide a baseline of the capacity and needs of the instructors prior to the proposed intervention.

In years 2 and 3 of the project, the M&E will make regular monitoring visits to the grower processor groups and compile and analyse data on volumes of coffee sales, quality and income. The M&E team will document individual success stories for submission as part of the 6 monthly progress reports to the STDF.

19. Dissemination of the projects results

Describe how the project results will be disseminated within the country and/or more widely. Explain if, and how, the project may be replicated or its results used more widely. See Qn. 15 (u) of the Guidance Note.

The proposed coffee project is designed to draw together existing materials available in PNG and externally that can contribute towards improved yields and better management of quality and food safety for smallholder coffee growers and processors. CIC also intend to develop new materials such as a peer group training system, national curriculum for adult learners, smallholder friendly food safety and quality management system and auditable national protocol for smallholder production and processing of coffee and a national certificate level barista training and business management course. These additional items are novel for the PNG coffee industry, some of the ideas and approaches have been adapted from successful smallholder programmes for fruits and vegetables from outside of PNG and the content of the national protocol is based on the international standards of CAC. However, the actual content will be adapted for use by the coffee industry in PNG. The outputs of the proposed project will provide an invaluable resource for the future growth of PNG's coffee industry in the longer-term. The material and concepts developed in PNG would have much wider applicability for smallholder coffee growers and processors outside of PNG. CIC wish to share the benefits of the STDF intervention as widely as possible and hence will implement a dissemination strategy that provides not only long-term sustainability within PNG but international access to the material in a form appropriate for use outside of PNG.

As part of the delivery of the coffee project all participants will be provided with copies of all relevant materials. The strategy for longer-term sustainability is two pronged. CIC will create an electronic resource centre for information and extension materials on smallholder production and processing (covering all aspects of productivity, quality, food safety, group governance and business management) as part of the existing CIC website in PNG. The resource centre will be integrated into the main CIC website rather than creating a project specific site as the CIC main site is resourced from core funds ensuring it longevity. Consequently, at the end of the project the material will not be frozen to become an obsolete resource within a few years. As an integral part of the national coffee curriculum for adult learners (developed as part of the coffee project) the material will be a live resource subject to regular updates and additions. CIC will cross-link relevant material from the adult programme to the national coffee curriculum for schools (already developed prior to the proposed coffee project) thus extending the training messages to school children in coffee growing provinces of PNG over many years.

The coffee industry is driven by the coffee exporters and smallholder grower/processor groups, the CIC plays a regulatory and supporting role. For this reason, the proposed project has been designed to make use of and strengthen partnerships between CIC and 5 of the major coffee exporters and 12 grower/processor groups. These private sector partners will play a key role in development and delivery of the outputs of the STDF intervention. CIC have no direct control over the activities of private businesses but believe that the partners (and the wider industry in PNG) will welcome efforts to develop a national

curriculum for coffee production and processing with standardised training messages. It is hoped that the outputs developed with support from STDF will be taken up and used widely by commercial extension agents and those working for NGO's and faith based groups and will be integrated either directly or in adapted form into their own extension programmes. In order to make available the outputs of the STDF project and to encourage wider uptake CIC will hold a one day seminar in the final year of the project for representatives from all of the coffee processing and export companies. CIC will invite representatives from other stakeholder organisations such as grower/processor groups, NGO's (involved in supporting the coffee industry) and representatives of the major donor agencies (AUSAID, European Commission & World Bank) to attend. The one day seminar will focus on providing details of the smallholder friendly food safety and quality management systems, national protocol for coffee, coffee curriculum and peer group training system and the outcomes of the project. Stakeholders will have the opportunity to discuss the implications of the STDF funded work and prepare recommendations and a strategy for wider uptake.

PNG has the most diverse culture in the world with over 800 languages in use. As a common vernacular people make use of "Tok Pisin" which is universally spoken and understood across PNG. All of the primary material generated by the proposed project for use in PNG will be made available in Tok Pisin. However, CIC recognise that Tok Pisin is not used outside of PNG and will provide an international section as part of the resource centre on the CIC website. The international section will contain a complete set of all of the materials generated as part of the project in English. CIC are very keen on making the material as widely available as possible and would like to explore the formation of external links to their site. CIC would welcome the opportunity to have a link from the STDF website to the resource centre on the CIC website. CIC will also contact the International Coffee organisation (ICO) to discuss the possibility of a link to the resource centre from their site.

ATTACHMENTS

- Appendix 1:** Logical framework (see attached template)
- Appendix 2:** Work Plan (see attached template)
- Appendix 3:** Project Budget (see attached template)
- Appendix 4:** Letters of support from organizations that support the project request
- Appendix 5:** Written consent from an STDF partner that agrees to implement the project **OR** evidence of the technical and professional capacity of another organization proposed to implement the project.
- Appendix 6:** Terms of Reference for key staff involved in project implementation

APPENDIX 1: Logical Framework of the STDF coffee proposal (STDF/PPG/553)¹

| | Project description | Measurable indicators / targets | Sources of verification | Assumptions and risks |
|--------------------------------------|---|---|---|---|
| Goal | Increased competitiveness & sustainability of PNG coffee industry in terms of consistent supply of high quality safe coffee from smallholder driven value-chain, resulting in increased sales to premium markets, impacts positively on the livelihoods of 2.5 million rural households”. | <p>Increased exports of coffee in tonnes</p> <p>Increased value of coffee exports</p> <p>Increased percentage of higher grades (A/AA, X/AX & PSC) premium coffees and reductions in percentage of lower-grade (Y1-Y3 or lower) coffee</p> <p>Increased sales to speciality single-origin markets.</p> | <p>CIC & ICO production and export data confirms upward trend in volume and value of PNG coffee exports.</p> <p>CIC data shows improvements in quality in terms of increased percentage of higher grades of coffee and reduction in percentage of lower-grades of coffee.</p> <p>Industry & CIC data shows increased sales to speciality markets.</p> | <p>Industry & public-sector agencies manage incursions by invasive pests or diseases.</p> <p>Small-scale growers, processors and export companies implement improved management systems effectively.</p> <p>Government continues to recognise and support agriculture as the driver of the rural economy.</p> <p>Climatic conditions remain stable and conducive for coffee production.</p> <p>Long-term upward trends in global market demand and value/kg are maintained.</p> |
| Immediate objective (purpose) | Increased financial returns, yields, quality/safety and market access for smallholder coffee growers & processors and grower/processor groups. | <p>Within 3 years, at least 50% of the groups targeted by the STDF project record:</p> <p>15% increase in sales of coffee in tonnes</p> <p>20% increase in value of coffee sales</p> <p>At least 45% of coffee sold is of PSC grade or higher and not more than 50% of coffee sold is of Y1 grade.</p> | <p>CIC data, grower/processor group records & buyer data relating to targeted groups.</p> <p>Grower/processor groups will collect data as part of management systems, data will link into buyer & CIC systems.</p> | <p>Industry & public-sector agencies manage incursions by invasive pests or diseases.</p> <p>Small-scale growers, processors and export companies implement improved management systems effectively.</p> <p>Climatic conditions remain stable and conducive for coffee production.</p> |
| Expected results (outputs) | 1.0 Members of smallholder groups implement risk-based management systems to improve yields, quality & safety of coffee. Groups implement better governance and | 1.1 At least 50% of the members of the smallholder grower/processor groups (~650 households) implement the improved management | 1.1 CIC, private sector and grower group records provide evidence of successful implementation of the management systems by members of the | <p>1.1 Members of smallholder farmer groups are committed to implementation of better practices.</p> <p>1.2 Private sector partners support smallholder groups to</p> |

¹ See the CIDT Handbook on Project Identification, Formulation and Design, available on the STDF website, for guidance on the preparation of logical frameworks.

| | | | | |
|-------------------|--|--|--|---|
| | <p>business practices.</p> <p>2.0 Appropriate & verifiable production & processing protocols for smallholder production and processing of coffee developed in PNG and adopted by the coffee industry.</p> <p>3.0 National coffee curriculum for adult learners and peer group train programme developed and implemented. National certificate course for coffee baristas developed and made available for members of the hospitality and tourism industries.</p> | <p>systems.</p> <p>2.1 At least 60% of the members of the smallholder grower/processor groups who implement the management system (~400 households) adopt the national protocols and pass the verification audit by the end of year 3 of the project.</p> <p>3.1 National curriculum for adult learners and peer group training packages completed by the end of year 1.</p> <p>3.2 At least 60 instructors drawn from 6 provinces complete the instructors course by the end of year 1.</p> <p>3.3 Instructors provide peer group training for at least 1,500 individuals in the 12 grower processor groups by the end of year 2.</p> <p>3.4 At least 50 coffee baristas from businesses in 7 provinces pass the National certificate for coffee baristas by the end of year 2.</p> | <p>smallholder grower/processor groups.</p> <p>2.1 CIC inspection records and copies of checklists, certificates and notifications of failed audits.</p> <p>3.1 Copies of national curriculum and training materials available electronically.</p> <p>3.2 CIC records of training needs analysis, course attendance sheets, examination records & certificates.</p> <p>3.3 CIC & private sector records of training programmes including attendance records & electronic copies of posters created by trainees.</p> <p>3.4 APTC & CIC records of trainee profiles, attendance and examination records.</p> | <p>implement better practices effectively.</p> <p>2.1 Private sector in PNG & international buyers of coffee see the value of a PNG national protocol for smallholder coffee production and processing.</p> <p>3.1 Poor weather conditions in the highland provinces delay roll out of the peer group training programme.</p> <p>3.2/3.3 Unforeseen SPS emergency diverts instructors away from training programme to help with pest or disease control.</p> <p>3.4 Companies involved in the hospitality and tourism industries support the barista/coffee business course and allow time for members of their staff to attend the course.</p> |
| Activities | <p>1.1 Review of available information & existing approaches (GAP, processing, governance, business management, training etc) to create a common resource.</p> <p>1.2 Awareness creation for smallholder grower groups & private sector companies</p> | <p>1.1 Central resource of information created with analysis of knowledge gaps available by end of Q1 of year 1.</p> <p>1.2.1 Signing of collaborative agreements with the 5 exporters involved in the project.</p> | <p>1.1 Electronic resource available on the STDF project page (restricted access) of the CIC website & on memory sticks for use by project stakeholders.</p> <p>1.2.1/1.2.2 Copies of collaborative agreements available for private sector companies</p> | <p>The following are the major assumptions at activity level:</p> <p>There are no unforeseen incursions by emerging pests or diseases that result in significant reductions in product volume or quality.</p> <p>Smallholder farmer groups are committed to implementation of better practices</p> |

| | | | | |
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| | <p>(signing of stakeholder agreements).</p> <p>1.3 Updating and consolidation of existing baseline information on the grower/processor groups.</p> <p>1.4 Design, piloting & roll out of smallholder friendly management systems (production & processing) suitable for group based production/processing (group based management systems to optimise output) includes governance & business management for groups.</p> <p>1.5 Piloting of group based green coffee processing to optimise quality & value addition – documentation of business case for investment in SME processing.</p> | <p>1.2.2 Awareness creation sessions and signing of collaborative agreements with 12 grower/processor groups by end of Q1 of year 1</p> <p>1.3 Profiling of 1,200 households in the 12 grower/processor groups who have signed up to participate in the project. Profiling completed by end of Q2 of year 1.</p> <p>1.4.1 Draft materials for management system completed by end of Q2 of year 1.</p> <p>1.4.2 Piloting of draft of management systems with 5 groups & finalisation of management system materials by end of Q4 of year 1.</p> <p>1.4.3 Roll out of management system to 12 groups & 1,200 member households beginning Q1 of year 2, complete by end of Q4 of year 2.</p> <p>1.4.4 Mentoring of groups through to end of year 3</p> <p>1.5.1 Pilot system for green coffee processing at group level fully operational by end of Q2 of year 2.</p> <p>1.5.2 Mentoring ongoing to Q4 of year 3.</p> | <p>and grower/processor groups.</p> <p>1.3 Electronic copies of farm profiles & baseline report available.</p> <p>1.4.1 Copies of management system materials available electronically.</p> <p>1.4.2 Reports of piloting programme with record of revisions and modifications to management systems based on stakeholder feedback.</p> <p>1.4.3 Reports for each group detailing adoption of management systems & user feedback.</p> <p>1.4.4 Mentoring reports & final report with analysis of challenges & solutions for smallholder management systems.</p> <p>1.5.1 Report of installation, commissioning & initial training of group in green coffee processing.</p> <p>1.5.2 Mentoring visit reports & buyer & CIC reports of</p> | <p>Private sector partners support smallholder groups to implement better practices effectively.</p> |
|--|--|--|---|--|

| | | | | |
|--|--|---|--|--|
| | <p>1.6 M&E to collect and synthesise data on delivery of project objectives & documentation of success stories.</p> <p>1.7 Development of electronic resource of all information /materials generated by the project with global access, hosted via CIC website.</p> <p>1.8 Dissemination seminar for coffee industry stakeholders & donor representatives.</p> <p>2.1. Development and implementation of smallholder friendly protocols for coffee (PNG driven certification).</p> <p>3.1 Institutional capacity building for supporting agencies (public & private sector)- implementation of standardised annual training programmes linked to seasonality of production. Assessment and upgrading of capacity of public & private extension agencies (eg church groups) to meet national training standards.</p> | <p>1.6 M&E system &, baseline/profiling (see 1.3 above) available at end of Q2 in year 1. M&E visits every quarter during years 2 &3.</p> <p>1.7 Activity will be ongoing with full e-resource available by end of year 3, initial version available Q1 of year 2.</p> <p>1.8 Seminar complete by end of Q3 of year 3.</p> <p>2.1.1 Completion of draft protocol documents by end of Q4 of year 1.</p> <p>2.1.2 Piloting of draft protocol with 2 groups, protocol modified based on smallholder & industry feedback by end of Q1 of year 2.</p> <p>2.1.3 Roll out to grower groups in Q2 of year 2 and annual audits at end of years 2 & 3.</p> <p>3.1.1 Training needs analysis for stakeholders involved in coffee extension activities completed by end of Q4 of year 1.</p> <p>3.1.2 Standardised annual training programme (national curriculum) agreed by end Q4 year 1.</p> <p>3.1.3 Training of core</p> | <p>product quality.</p> <p>1.6 M&E quarterly reports and consolidated 6 monthly report with analysis.</p> <p>1.7 E-resource available for public access on CIC website.</p> <p>1.8 Report of dissemination seminar included as part of final report to STDF at end of year 3.</p> <p>2.1 Copies of draft protocol & checklist available electronically.</p> <p>2.1.2 Report of pilot of protocol with record of modifications and stakeholder feedback.</p> <p>2.1.3 Report of implementation of protocol, records of audits with analysis of grower performance and training needs.</p> <p>3.1.1 Report of training needs analysis for the selected groups.</p> <p>3.1.2 Copy of national curriculum for coffee and training materials for instructor & peer group training courses.</p> <p>3.1.3 Copies of</p> | |
|--|--|---|--|--|

| | | | | |
|--|--|--|--|--|
| | <p>3.2 Promotion of PNG coffee nationally and internationally via tourism opportunities. Activity involving development of practical <i>barista</i> training for national outlets and training for coffee producers to target sales to cruise ship visitors (linking high-quality product from project groups to premium markets).</p> | <p>team of 60 instructors from 6 provinces completed by end of Q2 of year 2.</p> <p>3.1.4 Delivery of training messages to 1,500 members of the grower groups by instructors in an appropriate form using cascading peer group training techniques (include some school teachers where appropriate). Peer group training complete by end of year 2. Refresher training to end of year 3.</p> <p>3.2.1 Development of training packages for <i>barista</i> and coffee producers completed by Q4 of year 1.</p> <p>3.2.2 Roll out of barista training programme for 55 personnel from the hospitality industry in Q1 of year 2 completed by end of Q4 of year 2.</p> | <p>training reports with evidence of competence.</p> <p>3.1.4 Reports of peer group training sessions with evidence of participant uptake of training messages.</p> <p>3.2.1 Copies of barista training package available.</p> <p>3.2.2 Report of barista training course & course records of APTC including details of performance of trainees in anonymous form.</p> | |
|--|--|--|--|--|

APPENDIX 2: Work Plan STDF coffee project (STDF/PPG/553) ²

| Activity | Responsibility | Year 1 | | | | Year 2 | | | | Year 3 | | | |
|---|--|--------|-------|-------|-------|--------|----|----|----|--------|----|----|----|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Output 1 Smallholder groups implement risk-based management systems to improve yields, quality & safety of coffee. | | | | | | | | | | | | | |
| 1.1 Review of available information & existing approaches (GAP, processing, governance, business management, training etc) to create a common resource. | CIC & Private sector partners | 1.1 | | | | | | | | | | | |
| 1.2 Awareness creation for smallholder grower groups & private sector companies (signing of stakeholder agreements). | CIC | 1.2 | | | | | | | | | | | |
| 1.3 Updating and consolidation of existing baseline information on the grower/processor groups. | CIC | 1.3 | | | | | | | | | | | |
| 1.4 Design, piloting & roll out of smallholder friendly management systems for production & processing of coffee. | CIC, Private sector partners & grower/processor groups. | 1.4.1 | 1.4.2 | 1.4.3 | 1.4.4 | | | | | | | | |
| 1.5 Piloting of group based green coffee processing to optimise quality & value addition at group level. | CIC, Selected grower/processor groups & relevant private sector partners | | | 1.5.1 | 1.5.2 | | | | | | | | |
| 1.6 M&E to collect and synthesise data on delivery of project objectives & documentation of success stories. | CIC | | | | | 1.6 | | | | | | | |
| 1.7 Development of electronic resource of all information /materials generated by the project with global access, hosted via CIC website. | CIC & Private sector partners | | | | | 1.7 | | | | | | | |

² Please shade or otherwise indicate when the activity will take place.

APPENDIX 2: Work Plan STDF coffee project (STDF/PPG/553) ³

| Activity | Responsibility | Year 1 | | | | Year 2 | | | | Year 3 | | | |
|---|---|--------|---------------|-------|-------|--------|-------|----|--------------------------|--------|----|-----|----|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| 1.8 Dissemination seminar for coffee industry stakeholders & donor representatives. | CIC | | | | | | | | | | | 1.8 | |
| Output 2 Appropriate & verifiable production & processing protocols for smallholder production and processing of coffee developed in PNG and adopted by the coffee industry. | | | | | | | | | | | | | |
| 2.1. Development and implementation of smallholder friendly protocols for coffee (PNG driven certification). | CIC, Private sector partners & grower/processor groups. | | 2.1.1 | | 2.1.2 | | 2.1.3 | | | | | | |
| Output 3 National coffee curriculum for adult learners and peer group train programme developed and implemented. National certificate course for coffee baristas developed and made available for members of the hospitality and tourism industries. | | | | | | | | | | | | | |
| 3.1 Implementation of standardised annual training programmes linked to seasonality of production. | CIC & Private sector partners | | 3.1.1 & 3.1.2 | | 3.1.3 | | 3.1.4 | | 3.1.4 Refresher training | | | | |
| 3.2 development of practical <i>barista</i> training for national outlets and training for coffee producers to target sales to cruise ship visitors (linking high-quality product from project groups to premium markets). | CIC & APTC | | | 3.2.1 | | 3.2.2 | | | | | | | |

Coffee Industry Corporation (CIC) & Australia Pacific Technical College (APTC)

³ Please shade or otherwise indicate when the activity will take place.

APPENDIX 3: Budget (US\$)⁴

The following table provides a summary of the budget for the STDF coffee proposal (STDF/PPG/553) in US\$. Full details of budget breakdown in PNG Kina and US\$ are provided in the attached spreadsheet.

| | STDF | CIC/company contributions | Other |
|--|----------------------|---------------------------|-------|
| Output 1. Members of smallholder groups implement risk-based management systems to improve yields, quality & safety of coffee. Groups implement better governance and business practices. | | | |
| 1.1 Review of available information & existing approaches (GAP, processing, governance, business management, training etc) to create a common resource. | US\$2,744 | US\$2,198 | |
| 1.2 Awareness creation for smallholder grower groups & private sector companies | US\$21,823 | US\$11,425 | |
| 1.3 Updating and consolidation of existing baseline information on the grower/processor groups. | US\$49,840 | US\$30,629 | |
| 1.4 Design, piloting & roll out of smallholder friendly management systems | | | |
| 1.4.1 Design of management system | US\$7,702 | US\$2,567 | |
| 1.4.2 Piloting and refinement of system | US\$46,214 | US\$57,574 | |
| 1.4.3 Roll out of management system | US\$7,413 | US\$25,514 | |
| 1.5 Piloting of group based green coffee processing to optimise quality & value addition. | US\$9,708 | US\$70,476 | |
| 1.6 M&E to collect and synthesise data on delivery of project objectives & documentation of success stories. | US\$23,107 | US\$21,720 | |
| 1.7 Development of electronic resource of all information /materials generated by the project with global access, hosted via CIC website. | US\$32,093 | US\$2,054 | |
| 1.8 Dissemination seminar for coffee industry stakeholders & donor representatives. | US\$9,628 | US\$1,027 | |
| Output 2. Appropriate & verifiable production & processing protocols for smallholder production and processing of coffee developed in PNG and adopted by the coffee industry. | | | |
| 2.1. Development and implementation of smallholder friendly protocols for coffee | | | |
| 2.1.1 Development of protocols including private sector partners. | US\$5,071 | US\$14,634 | |
| 2.1.2 Piloting & refining of protocols. | US\$963 | US\$3,042 | |
| 2.1.3 Roll out of protocols to groups. | US\$8,858 | US\$39,744 | |
| 2.1.4. Regular mentoring & annual audit of performance of smallholder grower groups. | US\$6,354 | US\$71,400 | |
| Output 3. National coffee curriculum for adult learners and peer group train programme developed and implemented. National certificate course for coffee baristas developed and made available for members of the hospitality and tourism industries. | | | |
| 3.1 Development & implementation of national curriculum for coffee production and processing, development and implementation of peer group training programme for smallholder growers/processors of coffee. | | | |
| 3.1.1 Training needs analysis for stakeholders involved in coffee extension activities | US\$105,200 | US\$4,698 | |
| 3.1.2 Standardised curriculum and content developed to meet national standards (by subject matter specialists) | US\$63,383 | US\$4,108 | |
| 3.1.3 Training of core team of instructors | US\$237,165 | US\$23,030 | |
| 3.1.4 Delivery of training messages to grower groups by instructors in an appropriate form using cascading peer group training techniques | US\$25,674 | US\$10,976 | |
| 3.2 Development of practical barista training for national outlets and training for coffee producers to target sales to cruise ship visitors (linking high-quality product from project groups to premium markets). | US\$67,170 | US\$2,516 | |
| STDF contribution: | US\$730,110 | | |
| Counterpart contribution: | | US\$399,332 | |
| Total Budget: | US\$1,129,433 | | |
| Counterpart as % of total: | 35% | | |

⁴ Use the headings in the budget table above as a basis to prepare a budget table, preferably as an Excel chart.

Appendix 4: Letters of support from organizations that support the project request



OFFICE OF THE SECRETARY
Telephone: +675 3007083; Facsimile: +675 3258511
3rd Floor, Central Government Office, WAIGANI, National Capital District, PNG
Department of Agriculture and Livestock, P.O. Box. 2033 Port Moresby, NCD, Papua New Guinea



1st May 2017

STDF Secretariat
World Trade Organisation
Centre William Rappard
Rue de Lausanne 154
CH-1211 Geneva
Switzerland

Dear STDF Secretariat

Subject: STDF-PG-553-Coffee-DR5 - Enhancing Trade for Coffee Farmers in Papua New Guinea - Support Letter

I am happy to submit to you a letter from the Papua New Guinea (PNG) Department of Agriculture and Livestock (DAL) in support of the project proposal "**STDF-PG-553-Coffee-DR5**" - titled "**Enhancing Trade for Coffee Farmers in PNG**".

In December 2015, the DAL, PNG Coffee Industry Corporation (CIC) and PNG Cocoa Board submitted an application for assistance from the Standards and Trade Development Facility (STDF) within the World Trade Organisation (WTO) in Geneva to explore opportunities for access to high-value niche markets for our cocoa and coffee products. Our request was approved and we have been working with the consultant, Dr. Andrew Graffham, since November 2016 to prepare one proposal for coffee and one for cocoa.

Key priorities in agriculture by the O'Neill-Dion Government under the "Aotau Accord" were aimed at achieving three (3) outcomes for our people and our country, and these were:

1. Increase export and domestic production and/or revenues from agriculture;
2. Increase number and volume of new investments in the agriculture sector; and
3. Increase the number of indigenous men and women in small, medium and corporate businesses in the agriculture and agriculture-related sectors.

Coffee is the main cash crop of the highlands people and contributes substantially to foreign exchange earnings, employment and national GDP. In the last 5 years, coffee accounted for 27% of total agricultural export and 6% of GDP translating to about K450 million annually. In 2016, coffee exports generated over K600 million for the

PNG economy. Coffee income feeds into transport, construction, manufacturing, retail and, wholesale, insurance, banking and other allied industries. It is grown in 18 of the 22 provinces in PNG by more than 450,000 households representing around 3.3 million people. Over the last 10 years, the PNG coffee industry has returned to the Government through export revenues on average of K25 for every K1 appropriated under the national budget.

The medium to long term outlook for coffee trade globally is very promising with consumption growth rate increasing at around 4%. So the demand for PNG origin coffee will remain buoyant and strong growth is forecasted in the longer term.

In 2013, the Government began removing inherent and established impediments in the industry by amending licensing guidelines and legal and financial requirements in order to increase active participation by nationals in the industry and exporting of coffee. The Government has approved reserved licenses for indigenous Papua New Guineans and business co-operatives including women in coffee. These initiatives collectively aim to promote new market opportunities and increase participation, incentives and competition with the ultimate view to enhance both quality and volume of PNG coffee. Furthermore, these initiatives we are taking aims to improve supply chain management and reduce value-chain actors and in so doing maximise returns to farmers.

The Coffee Industry Corporation (CIC) has set an ambitious target to increase productivity of village farmers from around 600 kg/ha currently to 800 kg/ha by 2017 and to 1,200 kg/ha by 2018. For the plantation sector, our plans are increase productivity from around 1,200 kg/ha in 2016 to 1,800 kg/ha in 2017 and to 2,000 kg/ha in 2018. At current market prices, coffee revenue is projected to increase from K450 million in 2016 to K480 million in 2017 and to K510 million in 2018. Currently the coffee industry is estimated to formally employ about 20,000 people in 2016. In 2017 this number is expected to increase to 25,000 and then to 28,000 in 2018. At the same time we are projecting an increase in the number of SME's from 60,000 in 2016 to 66,000 in 2017 and then to 68,000 in 2018.

This project proposal strongly complements and will enhance the efforts the PNG Government has taken over the last five (5) years to increase production and quality of coffee produced by local farmers in the rural areas who currently account for over 80% of the total volume exported, and therefore, I recommend it highly for support by the STDF.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Vele P. Ila'ava', with a horizontal line extending from the end of the signature.

Vele P. Ila'ava

Secretary

Copy: **Mr. Charles Dambui**
Chief Executive Officer, PNG Coffee Industry Corporation



COFFEE INDUSTRY CORPORATION LTD CHIEF EXECUTIVE'S OFFICE

P.O. Box 137
GOROKA
Eastern Highlands Province, 441
Papua New Guinea

Telephone: (675) 532 1266
(675) 532 2466
Facsimile: (675) 532 1351
Email: ciceo@cic.org.pg

20th April 2017
Our Ref.: CEO07:00/CD:rs

STDF Secretariat
World Trade Organization
Centre William Rappard,
Rue de Lausanne 154,
CH-1211 Geneva,
Switzerland

Dear STDF Secretariat,

SUBJECT: COFFEE INDUSTRY CORPORATION LTD'S SUPPORT FOR STANDARD & TRADE DEVELOPMENT FACILITY (STDF) PROJECT PROPOSAL

The Coffee Industry Corporation (CIC) Ltd is the regulator of the Papua New Guinea's (PNG) coffee industry and also provides research and extension services to the sector. CIC contributed to the development of this proposal entitled "Enhancing trade for coffee farmers in Papua New Guinea" with the endorsement of PNG's Department of Agriculture & Livestock.

CIC will engage itself with STDF to implement this project. The project is expected to improve coffee productivity and increase income of majority of rural farmers engaged on coffee.

CIC has the capacity to support this important project and willing to engage itself fully.

Yours Sincerely
COFFEE INDUSTRY CORPORATION LTD


Mr. Charles Dambu
CHIEF EXECUTIVE OFFICER

"Yumi tukautim Kofi na Kofi bai tukautim Yumi"



KOSEM LIMITED

P O Box 41, Barz, Jeksa Province, PNG
Phone: (675) 540 2210
Fax: (675) 540 2202
Email: mark@kosem.com.pg

Date: Friday, May 19, 2017
File: KL004

STDF Secretariat
World Trade Organization
Centre William Rappard,
Rue de Lancy 154,
CH-1211 Geneva,
Switzerland

Dear STDF Secretariat,

SUBJECT: KOSEM LIMITED'S SUPPORT FOR STANDARD & TRADE DEVELOPMENT FACILITY (STDF) PROJECT PROPOSAL.

Kosem Limited is a development partner in Papua New Guinea's coffee industry. We support the proposal entitled "Enhancing trade for coffee farmers in Papua New Guinea" submitted by the Department of Agriculture & Livestock and PNG Coffee Industry Corporation Ltd.

Kosem Limited would like to engage itself with STDF by partnering with CIC to implement this project. The project is expected to improve coffee productivity and increase income of majority of rural farmers engaged on coffee.

Kosem Limited has the capacity to support this important project and willing to engage itself fully.

Yours Sincerely,

**MARK MUNNUL (MR.)
OPERATIONS MGR / DIRECTOR**

Attached below: project summary



Superior Enterprises Limited

A 100% PNG FAMILY OWNED COMPANY

PO Box 750, BOROKO, National Capital District, Papua New Guinea
Tel: +675 320 2200 | 320 2045 | Email: supakofi92@gmail.com

26 May 2017

STDF Secretariat
World Trade Organization
Centre William Rappard,
Rue de Lausanne 154,
CH-1211 Geneva,
Switzerland

Dear STDF Secretariat,

SUBJECT: SUPPORT FOR STANDARD & TRADE DEVELOPMENT FACILITY (STDF) PROJECT PROPOSAL

Superior Enterprises Limited is a development partner in Papua New Guinea's coffee industry. We support the proposal entitled "Enhancing trade for coffee farmers in Papua New Guinea" submitted by the Department of Agriculture & Livestock and PNG Coffee Industry Corporation Ltd.

Superior Enterprises Limited would like to engage itself with STDF by partnering with CIC to implement this project. The project is expected to improve coffee productivity and increase income of majority of rural farmers engaged on coffee.

Superior Enterprises Limited has the capacity to support this important project and willing to engage itself fully.

Yours Sincerely,



ROMIAS MILLS WAKI
GENERAL MANAGER



Attached below: project summary

Untoa Kosa Rainbow Coffee Cooperative
Tairoa/Gadup
Obura Wonerara
Eastern Highlands Province

Date:

Ref:

STDF Secretariat
World Trade Organization
Centre William Rappard,
Rue de Lausanne 154,
CH-1211 Geneva,
Switzerland


Dear STDF,

SUBJECT: UNTOA KOSA RAINBOW COFFEE COOPERATIVE SUPPORT TO CIC PROPOSAL SUBMISSION FOR STANDARD AND TRADE DEVELOPMENT FACILITY (STDF)

Untoa Kosa Rainbow Coffee Cooperative is a smallholder grower group in Eastern Highlands of Papua New Guinea (PNG). The project proposal entitled "Enhancing trade for coffee farmers in Papua New Guinea" which will assist in improving productivity of coffee farmers and increasing the income of majority of rural farmers engaged on coffee. Untoa Kosa Rainbow Coffee Cooperative is very grateful for the Department of Agriculture and Livestock and the PNG Coffee Industry Corporation (CIC) Ltd for taking the lead in developing this proposal.

Untoa Kosa Rainbow Coffee Cooperative has the capacity to support this important project and willing to engage itself fully.

Yours Sincerely,


07/05/2019
CHAIRMAN


07/05/2019
DEPUTY CHAIRMAN

Binax Coffee Cooperative
Tapo- Agarabi LLG
Kainantu, EHP
Papua New Guinea

Date:

Ref:

STDF Secretariat
World Trade Organization
Centre William Rappard,
Rue de Lausanne 154,
CH-1211 Geneva,
Switzerland


Dear STDF,

**SUBJECT: BINAX COFFEE COOPERATIVE SUPPORT TO CIC PROPOSAL
SUBMISSION FOR STANDARD AND TRADE DEVELOPMENT FACILITY (STDF)**

Binax Coffee Cooperative is a smallholder grower group in Eastern Highlands of Papua New Guinea (PNG). The project proposal entitled "Enhancing trade for coffee farmers in Papua New Guinea" which will assist in improving productivity of coffee farmers and increasing the income of majority of rural farmers engaged on coffee. Binax Coffee Cooperative is very grateful for the Department of Agriculture and Livestock and the PNG Coffee Industry Corporation (CIC) Ltd for taking the lead in developing this proposal.

Binax Coffee Cooperative has the capacity to support this important project and willing to engage itself fully.

Yours Sincerely,

 - 07/05/17
CHAIRMAN

 07/05/17
DEPUTY CHAIRMAN

Appendix 5: Written consent from an STDF partner that agrees to implement the project **OR** evidence of the technical and professional capacity of another organization proposed to implement the project.

This appendix is not applicable for this proposal as the leading implementing agency will be the Coffee Industry Corporation (CIC) and not an STDF partner or other third-party organisation. The technical and financial capacity of CIC to manage and deliver the STDF coffee project and prior experience of managing projects funded by external donor agencies was discussed in detail under section 15 of this proposal.

Appendix 6: Terms of Reference for key staff involved in project implementation

This appendix is not applicable as the STDF coffee project for PNG will be implemented directly by CIC and private sector partners and does not involve national or international experts.

Appendix 7: List of useful documents for management of ochratoxin “A” contamination in coffee

Codex Alimentarius Commission (www.fao.org/fao-who-codexalimentarius/standards/en/)

- Code of practice for the prevention and reduction of ochratoxin “A” contamination in coffee CAC/RCP/69-2009

Food and Agriculture Organisation

(www.fao.org/fileadmin/user_upload/aqns/pdf/coffee/guidelines_final_en.pdf)

- Guidelines for the prevention of mould formation in coffee

International Coffee Organisation (www.ico.org)

- Guidelines for the prevention of mould formation in coffee document ED/1988/06
- OTA risk management: Guidelines for green coffee buying document ED/1939/05

European Coffee Federation (www.ecf_coffee.org)

- Quality control system for coffee with respect to occurrence of ochratoxin “A” in the coffee chain
- OTA risk management: Guidelines for green coffee buying