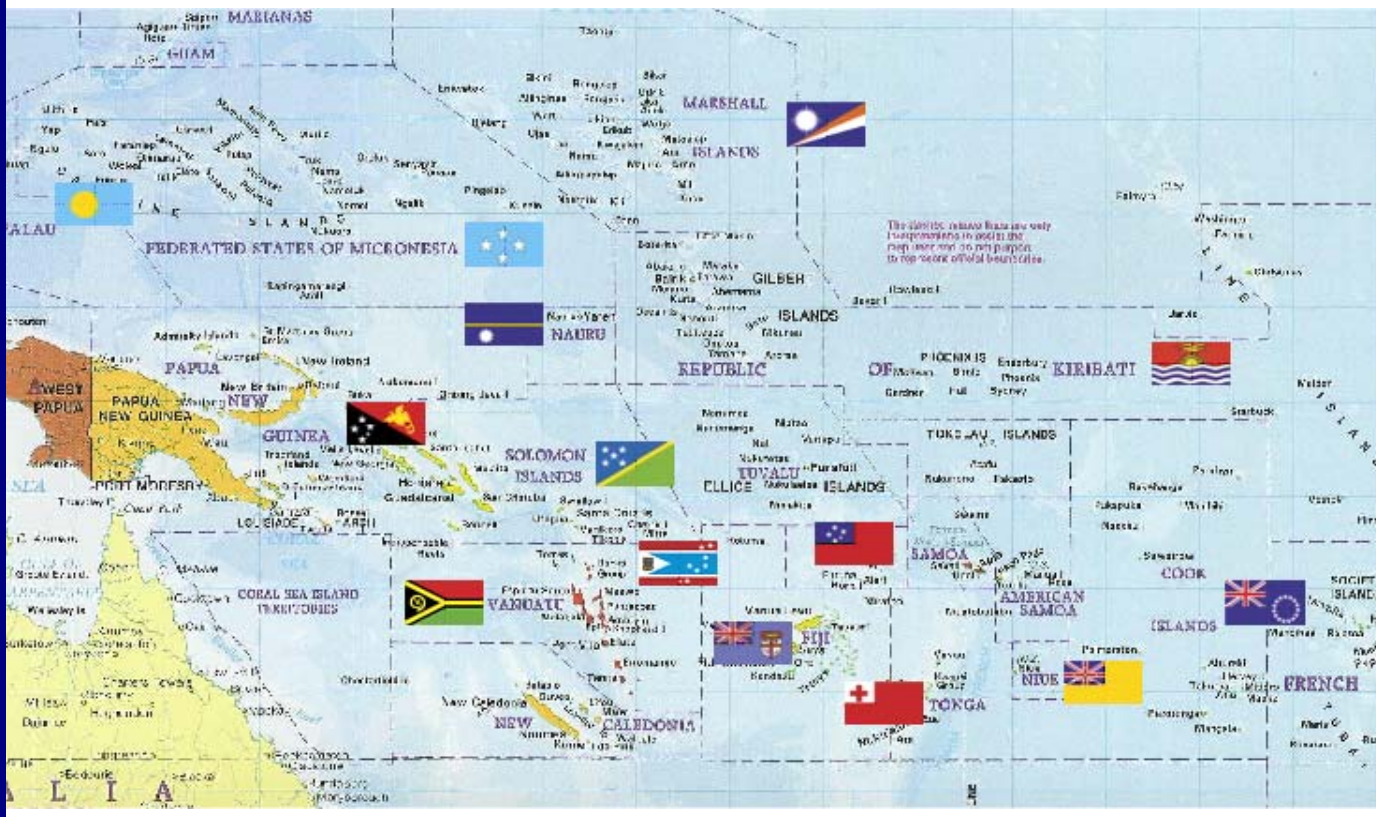
Project Document

Support to the Regional Programme for Food Security in the Pacific Island Countries



Trust Fund for Food Security and Food Safety

Italian Contribution

Support to the Regional Programme for Food Security in the Pacific Island Countries

PROJECT TITLE:	Support to the Regional Programme for Food Security in the Pacific Island Countries
Symbol:	GTFS/SAP/198/ITA
Donor:	Government of Italy
Contribution:	US$ 4 500 000
Government Implementing Agency:	Ministries of Agriculture: Cook Islands, Federates States of Micronesia, Fiji Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua, New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu
Duration:	Three years: 2003 to 2006
Estimated starting date:	October 2003

Brief description:

The project, funded through the Fund for Food Security and Food Safety (TFFS), Italian contribution, will fund an important "time slice" of a wider Regional Programme for Food Security (RPFS) and act as a catalyst for mobilising further financing and donor support for the wider programme.

The importance of a regional perspective and particular problems faced by small island economies also underpins the main rationale for adopting a regional approach to food security, which aims to address common problems such as (i) low productivity (subsistence) agriculture; (ii) critical gaps in technology transfer and adoption of modern techniques and inputs; (iii) poor market integration of producers and consumers; (iv) decline in traditional export earnings; (v) low HR development and institutional capacity in research, extension, policy and trade, and (vi) low awareness of WTO related issues and protocols.

Given the range and diversity of issues, it is recognised that this project alone cannot singularly address all of the key (vertical and horizontal) issues. To maximise its impact, therefore, project activities need to complement those of other development partners and donors in the region. Accordingly, in strategic areas, the project will work closely with relevant CROP agencies like the University of the South Pacific (USP) and Secretariat of the Pacific Community (SPC). Co-ordination with the EU Development of Sustainable Agriculture Project (DSAP) is also envisaged.

The project will have two main components;

Component (I) - Enhancing Food Production and Security: US$ 3,075,000.

This component will focus investments on specific production related (supply side) activities.

At present, rainfed subsistence agriculture, poor husbandry practices and inappropriate and inadequate use of modern technologies and inputs have resulted in low productivity farming, which is poorly integrated with markets. Limited irrigation or inefficient water management techniques are employed, whilst farm-mechanisation, out side plantations, is almost nonexistent. The diversity of opportunities and constraints facing Pacific Island countries mean also that countries differ in the primary sectors and sub-sectors to which they assign high priority. Pilot, community based activities in each participating country in line with key sub-sector priorities in agriculture, forestry and fisheries will be funded under this component.

Component (II) - Strengthening Agricultural Trade and Policy: US$ 395,000.

To maximise impact, the agriculture sector has to operate under a favourable environment of appropriate policy and trade instruments. Although trade can bring new opportunities for exports and products from developing countries, such opportunities have to be understood and developed in the PICs. Conversely, more free trade can also bring additional problems such as threats, through cheaper imports, to competitiveness of local produce in domestic markets and dumping of sub-standard imports and bio-safety hazards. To meet emerging challenges and opportunities, countries, therefore, need to (a) have effective agriculture policies in place to ensure national resources are deployed as optimally as possible and (b) build national capacity and awareness in domestic and international trade (bio-safety, customs and quarantine), so that they are aware of safety issues and compliant with internationally accepted standards such as Codex Alimentarius and WTO legislations.

Under Component II, the strategic activity will be to build institutional capacity in trade facilitation related to establishment of sanitary and phytosanitary standards for agricultural exports. .

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LIST OF ABBREVIATIONS

ACP	Africa, Caribbean and Pacific Group of the Cotonou Agreement
CBO	Community-Based Organizations
DASP	EU/SPC Development of Sustainable Agriculture in the Pacific
EC	European Commission
EEZ	Exclusive Economic Zones
EU	European Union
FAO	Food and Agriculture Organization
FIVIMS	Food Insecurity and Vulnerability Information Systems
GOI	Government of Italy
GSP	Generalized System of Preference
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
NPMU	National Project Management Unit
NPSC	National Project Steering Committee
OIE	International Office for Animal Disease
PACER	Pacific Agreement on Closer Economic Relations
PARTA	Pacific Area Regional Trade Agreement
PIC	Pacific Island Countries
PIF	Pacific Islands Forum
PIFS	Pacific Islands Forum Secretariat
RAP	FAO Regional Office for Asia and the Pacific
RPFS	Regional Programme for Food Security
RPMU	Regional Project Management Unit
RPSC	Regional Project Steering Committee
SAPA	FAO Sub-Regional Office for the Pacific Islands
SPARTECA	South Pacific Regional Trade and Economic Cooperation
SPC	South Pacific Commission
SPFS	Special Programme for Food Security
SPS	Sanitary or Phytosanitary Standards
SSC	South-South Cooperation
TCOS	SPFS Coordination and Monitoring Service
TCP	Technical Co-operation Programme
TFFS	FAO Trust Fund for Food Security and Food Safety
WTO	World Trade Organization

EXECUTIVE SUMMARY

(i) The World Food Summit in 1996 set the goal of halving the number of hungry people in the world by 2015. To meet this goal, FAO established a Trust Fund for Food Security and Food Safety (TFFS), to which The Government of Italy has contributed US$100 million to finance projects under FAO's Special Programme for Food Security (SPFS), particularly through regional initiatives and support to small island developing countries. The Trust Fund project will provide US$4.5 million to build upon the national development and food security policies of the Pacific Island Countries (PICs), which *inter alia* aim to efficiently increase domestic food production and trade, and reduce dependence on food imports. The project will fund an important "time slice" of a wider Regional Programme for Food Security (RPFS) and act as a catalyst for mobilising further financing and donor support for the wider programme. In addition, both the Trust Fund Project and the RPFS will benefit significantly from technical assistance provided to participating countries under South- South Cooperation (SSC), which is viewed as an integral part of the Regional initiatives. FAO's technical unit responsible for SPFS (TCOS) is currently developing the detailed operational plan for SSC implementation. Participating countries will also contribute resources to production (supply side) activities and to project management at national level.

(ii) Agriculture, particularly the export sector, fisheries and tourism are extremely important to the economies of the PICs, The high degree of dependence on such sectors, however, makes the relatively weak island economies vulnerable to externally induced economic shocks and to climatic factors. These include the Asian economic crisis of 1997/98 and short term (El Nino) and long term (global warming) weather effects. In addition, PICs face new economic challenges related to increased globalization and rapidly changing trading regimes. Countries recognize that such natural and economic problems require collective regional responses through organizations such as the Pacific Islands Forum (PIF) and the Forum secretariat (PIFS). Regional initiatives include the Pacific Regional Trade Agreement (PARTA), which will progressively remove tariffs and duties amongst participating countries, and the mandate given to PIFS to coordinate a regional perspective on issues related to international trade and aid such as the Cotonau Agreement and preferential access to EU markets.

(iii) The importance of a regional perspective and particular problems faced by small island economies also under pins the main rationale for adopting a regional approach to food security. Commonly shared problems in the PICs include: (i) limited natural resources and fragile environment; (ii) economic uncertainty and low growth reliant mainly on tourism and primary exports; (iii) small and poorly integrated domestic markets; (iv) little product differentiation/comparative advantage leading to limited intra-regional trade; (v) high freight costs due to distances from international markets; (vi) high energy costs; (vii) poor infrastructure and transport; (viii) low human and institutional capacity and (ix) large dependence on the public sector and limited private sector development.

(iv) In response to these constraints and concerns, there is growing awareness amongst the Island countries that appropriate strategies and investments are required to ensure future food security and sustainable use of natural resources. In meeting these objectives, agriculture will play a critical role, both in production and trade, though presently its capacity to do so is limited by various factors. Key amongst these are; (i) low productivity (subsistence) agriculture; (ii) critical gaps in technology

transfer and adoption of modern techniques and inputs; (iii) poor market integration of producers and consumers; (iv) decline in traditional export earnings; (v) low HR development and institutional capacity in research, extension, policy and trade, and (vi) low awareness of WTO related issues and protocols.

(v) In addressing these, the development strategies of PICs have common elements which *inter alia* include increasing agricultural productivity and food self-sufficiency, reducing food imports, diversifying production, improving marketing and export performance, developing human capacity and improving the quality of life of poor and vulnerable groups. The Italian Trust Fund Project will provide strategic impetus to these areas and in doing so will enhance overall food security. However, given the range and diversity of issues, it is recognised that this project alone cannot singularly address all of the key (vertical and horizontal) issues. To maximise its impact, therefore, project activities need to complement those of other development partners and donors in the region. Accordingly, in strategic areas, the project will work closely with relevant CROP agencies like the University of the South Pacific (USP) and Secretariat of the Pacific Community (SPC)[1]. The project will also complement efforts of other on-going FAO initiatives, as well as those funded by donors, such as the EU Development of Sustainable Agriculture Project (DASP). An additional consideration in designing the project was FAO's considerable comparative advantage in providing technical expertise and support specifically to activities related to food production and food safety.

(vi) The project will have two main components;

- **Component (I) - Enhancing Food Production and Security: US$3,075,000.** The Trust fund will focus investments on specific production related (supply side) activities under Component I of the project. At present, rainfed subsistence agriculture, poor husbandry practices and inappropriate and inadequate use of modern technologies and inputs have resulted in low productivity farming, which is poorly integrated with markets. Limited irrigation or inefficient water management techniques are employed, whilst farm-mechanisation, out side plantations, is almost nonexistent. The diversity of opportunities and constraints facing Pacific Island countries mean also that countries differ in the primary sectors and sub-sectors to which they assign high priority. Component I will fund pilot, community based activities in each participating country in line with key sub-sector priorities in agriculture, forestry and fisheries. Also, there is considerable scope for applied research and development of appropriate technologies for smallholder agriculture and for developing participatory approaches to addressing specific production problems. In countries where such need is considered a high priority, assistance support will be provided through Component I.

- **Component (II) - Strengthening Agricultural Trade and Policy: US$395,000.** To maximise impact, the agriculture sector has to operate under a favourable environment of appropriate policy and trade instruments. This is all the more important, given increasing globalisation and freer trade. Although trade can bring new

[1] FAO has recently signed a Memorandum of Understanding, for greater collaboration with SPC. Similar MOUs with SPREP and FFA have been signed.

opportunities for exports and products from developing countries, such opportunities have to be understood and developed in the PICs. Conversely, more free trade can also bring additional problems such as threats, through cheaper imports, to competitiveness of local produce in domestic markets and dumping of sub-standard imports and bio-safety hazards. To meet emerging challenges and opportunities, countries, therefore, need to (a) have effective agriculture policies in place to ensure national resources are deployed as optimally as possible and (b) build national capacity and awareness in domestic and international trade (bio-safety, customs and quarantine), so that they are aware of safety issues and compliant with internationally accepted standards such as Codex Alimentarius and WTO legislations. Despite these *urgent* requirements, PICs remain significantly constrained by weak human and institutional capacity, a problem exacerbated by size. With the exception of Papua New Guinea, for example, all the PICs have populations of well under one million, which has meant that a small and relatively fixed number of national staff have had to deal with an increasing volume and complexity of trade and policy issues. Investments in expanding and enhancing capacity in human resources, therefore, would have significant returns. Under Component II, the strategic activity will be to build institutional capacity in trade facilitation related to establishment of sanitary and phytosanitary standards for agricultural exports. Establishing linkages between relevant regional CROP academic and research institutions and specific counterpart institutions in Italy and involving them in joint implementation of Component II activities will be actively pursued by the project. An important aspect of such a joint effort would involve, strengthening the sanitary and phytosanitary pathway for, among other crops, Kava, a specific area of need highlighted in the Communiqué of the Fifth Meeting of FAO South West Pacific Ministers for Agriculture, in Suva, Fiji, April 2003.

(vii) Total Project cost is estimated at US$ 5.7 million of which the Italian Trust Fund will contribute US$4.5 million, counterpart funds from Governments US$1.2 million.

(viii) A breakdown of the Italian Trust Fund contribution by Item and main expenditure category is indicated below:

Item	**US$**	**% Cost**
(i) Enhancing Food Production and Security	3,075,000	68.33%
(ii) Strengthening Agricultural Trade and Policy	395,000	8.78%
(iii) Project Management	533,000	11.84%
(iv) Project Formulation, M&E and Miscellaneous	144,168	3.20%
(iv) FAO Support Costs [a/]	352,832	7.84%
Total	**4,500,000**	**100.00%**
Expenditure Category	**US$**	**% Cost**
(i) Expendable/Non Expendable Equipment	3,105,000	69.00%
(ii) International Consultants	260,000	5.78%
(iii) Regional Consultants and national personnel	351,000	7.80%
(iv) Travel	170,000	3.78%

(v) Training	60,000	1.33%
'(vi) Technical support services	90,000	2.00%
(vii) General Operating Expenses	111,168	2.47%
(viii) FAO Support Costs [a/]	352,832	7.84%
Total	**4,500,000**	**100.00%**

[a/] FAO support costs are calculated at 7% on expendable/non expendable procurement, 13% on all other costs.

(ix) The project will be implemented by FAO's Regional office for Asia and the Pacific (RAP), which will have overall operational responsibility, including that of the Regional Project Management Unit (RPMU) to be established at FAO's Sub-Regional Office for the Pacific Islands (SAPA), in Samoa. A Regional Project Steering Committee (RPSC) will play an important management support role (to the Project Co-ordinator), notably in deciding on resource reallocations and in guiding project direction and activities. At the national level the project will be managed and implemented by a National Project Management Unit (NPMU), under a National Project Steering Committee (NPSC). The NPMU will be in the Ministry responsible for Agriculture. At local level project activities will be coordinated and implemented under the guidance of community based organisations (CBOs). In the absence of exiting organisations the NPMU will establish CBOs in collaboration with community heads and NGOs with experience of working in particular areas.

PART I: PROJECT AGREEMENT

Within the framework of its agreement with the Government of Italy (the Donor Government) and upon request from the Governments of the Pacific Island Countries (the Government), the Food and Agriculture Organization of the United Nations (FAO) will supply assistance for the execution of the following project once the Donor Government has accepted the project.

Project Title:	Support to the Regional Programme for Food Security in Pacific Island Countries
Project Symbol:	GTFS/SAP/198/ITA
Italian Government Contribution:	US$ 4,500,000

A detailed Project design and work plan is outlined in Part II of the document.

A. FAO OBLIGATIONS

FAO will be responsible for the recruitment, international travel, salaries and emoluments of international staff shown in Part II (Section E: Inputs). Except counterpart staff assigned by the Governments, FAO will also be responsible for the recruitment, salaries and emoluments of national experts and consultants indicated in Part II (Section E: Inputs). All staff will work under the direction of the Regional Project Co-ordinator, who, on behalf of FAO, has immediate technical responsibility for execution of the project.

FAO will procure and provide equipment and supplies outlined in Part II (Section E: Inputs). The equipment will remain the property of FAO for the duration of the project. Its ultimate destination will be decided by FAO in consultation with participating Governments.

FAO will arrange for periodic technical supervisory visits for reviewing and evaluating project progress as outlined under (Section H2: Project Review and Evaluation). The full cost of these will be met from the Project budget.

All FAO's obligations arising under this Project Agreement shall be subject to (i) the decisions of its governing bodies and to its constitutional, financial and budgetary provisions, and (ii) the receipt of the necessary contribution from the Donor Government. Any obligations assumed by FAO may, at any time, be taken over by the Donor Government.

FAO may, in consultation with participating Governments, execute part or the entire project by sub-contract. The selection of the sub-contractors will be made, after consultation with the Governments, in accordance with FAO's procedures.

B. GOVERNMENT OBLIGATIONS

The Participating Governments will take all necessary measures to facilitate the execution of the project and to assist the FAO staff in obtaining such services and facilities as may be required to fulfil their tasks. The Governments will apply to FAO, its property, funds and assets, its officials and to the persons performing services on its behalf, in connection with the Project, (i) the provisions of the Convention on Privileges and Immunities of the Specialized Agencies and (ii) the currency exchange rate established with the United Nations.

The Participating Governments will deal with any claims brought by third parties against FAO, its personnel or other persons performing services on its behalf in connection with the project, except when it is agreed by FAO and the Governments that such claims arise from gross negligence or wilful misconduct of such persons.

The Participating Governments will be responsible for the recruitment, salaries and social security measures of the national staff. The Governments shall also provide the facilities and supplies shown in Part II (Section E), "Inputs by the Recipient Governments".

The Participating Governments will grant to the staff of FAO and of the Donor Government and to persons acting on their behalf, access to the Project site and to any material or documentation relating to the Project and shall provide any relevant information to such staff or persons.

The Participating Governments are responsible for the cost of import and customs clearance of project equipment, its transportation, handling, storage, and related expenses within the country; its safe custody, maintenance, insurance and replacement, if necessary, after delivery to the project site.

C. REPORTING

FAO will report on the project to the Donor and recipient Governments as detailed in Part II (Section H.1) "Project Reporting".

The Participating Governments will agree to the dissemination of information like descriptions of the project and of its objectives and results, for the purpose of educating public opinion.

D. AMENDMENTS AND TERMINATION

This Project Agreement may be amended or terminated by mutual consent. Termination will also take effect sixty days after receipt by either party of written notice from the other party. In the event of termination, the obligations already assumed by the Governments shall remain in force to the extent necessary to permit orderly withdrawal of the funds and assets of FAO and of personnel performing services on its behalf.

This Project Agreement will enter into force upon signature by FAO and Participating Governments.

On behalf of:
the Government of Italy

Name:

Title:

Date:

On behalf of:
the Food and Agriculture Organization
of the United Nations
Name:

Title:

Date:

On behalf of:
the Government of Cook Islands

Name:

Title:

Date:

On behalf of:
The Government of Federates States of Micronesia

Name:

Title:

Date:

On behalf of:
the Government of Fiji
Name:

Title:

Date:

On behalf of:
the Government of Kiribati
Name:

Title:

Date:

On behalf of:
the Government of Marshall Islands
Name:

Title:

Date:

On behalf of:
the Government of Nauru
Name:

Title:

Date:

On behalf of:
the Government of Niue
Name:

Title:

Date:

On behalf of:
the Government of Palau
Name:

Title:

Date:

On behalf of:
the Government of Papua New Guinea
Name:

Title:

Date:

On behalf of:
the Government of Samoa
Name:

Title:

Date:

On behalf of:
the Government of Solomon Islands
Name:

Title:

Date:

On behalf of:
the Government of Tonga
Name:

Title:

Date:

On behalf of:
the Government of Tuvalu
Name:

Title:

Date:

On behalf of:
the Government of Vanuatu
Name:

Title:

Date:

PART II. PROJECT DESIGN

A. GENERAL BACKGROUND

The World Food Summit in 1996 set the goal of halving the number of hungry people in the world by 2015. To meet this goal, FAO established a Trust Fund for Food Security and Food Safety (TFFS) with an initial target of US$500 million. The Government of Italy has contributed US$100 million in support of the Trust Fund, mainly for projects under FAO's Special Programme for Food Security (SPFS), particularly through regional initiatives and support to small island developing countries. Under FAO's regional initiative, the Italian contribution to the Trust Fund will support Regional Programmes for Food Security in both the Caribbean[2] and Pacific Island Regions.

The Pacific Island Countries (PICs) face common constraints related to size, remoteness, geographic dispersion and vulnerability to natural hazards. In view of these limitations, food security regionally and in individual PICs can be improved significantly by supporting more efficient production, value addition and reduction in post harvest losses and improvements in trade, institutional capacity and exports.

The Italian Trust Fund will provide US$4.5 million in support of a larger Regional Programme for Food Security in the Pacific Island Countries, for US$11.47 million, prepared by FAO in 2002. The Trust Fund, and the wider programme for food security in the region, will be further complemented by FAO through South-South Cooperation (SSC). A parallel programme for SSC in the PICs is currently being designed and prepared by FAO's SPFS Coordination and Monitoring Service (TCOS). Participating countries in the programme will also contribute resources.

A.1 Regional Overview and Agriculture Sector

International development aid in many of the Pacific Island Countries (PICs)[3] remains important due to the relative weakness of most of the economies in the region. Agriculture, particularly the export sector, is also a key component, together with fishing and tourism. The high degree of dependence on such sectors, however, makes the island economies vulnerable to outside shocks and to climatic factors. Economic recession and slow down elsewhere, such as the Asian economic crisis of 1997-98 and the potential knock-on effects of SARS[4] in 2003, which are beyond the islands' control, have adverse effects on the economy, particularly if it affects the vital tourist industry. In addition, there have been new economic problems due to increased globalization in recent years. Emerging issues related to globalization are being addressed through regional organizations such as the Pacific Islands Forum (PIF) and the Forum Secretariat (PIFS). All island members of the PIF are also members of the ACP (Africa, Caribbean and Pacific) group within the Cotonou Agreement, which is the successor to the Lomé Convention. This provides them preferential access to the EU market and a share of aid programmes and other assistance administered by the European Commission. The PIFS has

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2 Project GTFS/RLA/141/ITA Promoting CARIFOUM/CARICOM Food Security Project.

3 Pacific Island Countries, classified as developing countries, include Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, the Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

4 Severe Acute Respiratory Syndrome, which has affected key sectors (particularly Airlines and Tourism) in several Asian Economies.

been given a mandate to co-ordinate a collective view on issues that arise within these arrangements. In 2001 the PIF heads of state adopted the Pacific Area Regional Trade Agreement (PARTA). The agreement requires the progressive removal of all tariffs and other duties on goods traded between parties. For most countries, this will mean significant changes in domestic revenues since they rely heavily on tariffs and several have no, or minimal, taxes on personal or business income. The islands also use regional forums to raise pertinent issues in a global context, particularly generating awareness of the risks associated with global warming and consequent environmental problems, such as vulnerability to rising sea levels in low-lying coral atolls.

The PICs vary considerably in size, availability of natural and mineral resources and economic development. The larger islands include Papua New Guinea (almost 90% of land area) the Solomon Islands, Vanuatu and Fiji. These are mainly volcanic and generally rich in biological and physical resources. In marked contrast, the atoll countries (Federated States of Micronesia, Kiribati, Nauru, Niue, the Republic of the Marshall Islands, Tuvalu and Palau) are small, have limited natural resources and poor soils. The remaining countries (Cook Islands, Tonga and Samoa) lie somewhere in between.

The total population of the 14 PICs is estimated at 7 million (2000), with Papua New Guinea accounting for some 70% and Nauru, Niue, Palau and Tuvalu together for less than 1%. Regionally, population growth is around 2.2% annually. Outward migration is important, providing a major source of both national and household income. Indigenous cultures and traditions remain generally strong and continue to play an important role in political, economic and cultural life. Strong cultural and social systems, in turn, provide an important safety net against absolute poverty, particularly amongst vulnerable groups.

In terms of Human Development Indices[5] (HDI), there are three broad categories: the smaller island states, Cook Islands, Palau, Niue, Samoa, Tonga, Tuvalu and Fiji, rank amongst the highest; the Micronesian states of Kiribati, Marshall Islands and Federated States of Micronesia are in the middle strata; and the large Melanesian countries of Vanuatu, Solomon Islands and Papua New Guinea, rank in the lower strata. The majority of the population live in rural areas and rely heavily on agriculture, forestry and fisheries as a source of food security. Table 1, indicates HDI ranking and topographic and economic characteristics of PICs.

[5] Note; only indicative as available HDI are not current and are of limited reliability.

Table 1. Human Development Index [a/] Rankings and Geographic and Economic Characteristics

Country	(HDI) Ranking	Population	Land Area (km2)	Sea Area 000 (km2)	GDP/Capita (US$)
High HDI	**1–53**				
Palau	46	19,100	488	629	10,921
Medium HDI	**54–137**				
Cook Islands	62	18,700	237	1,830	6,844
Niue	70	1,900	259	390	4,229
Fiji	101	824,700	18,333	1,290	3,138
Nauru	103	11,500	21	320	N/A
Tonga	107	100,200	649	700	2,437
Samoa	117	169,000	2,935	120	2,142
Tuvalu	118	9,900	26	900	1,905
FSM	120	118,100	701	2,780	3,051
Marshall Islands	121	51,800	181	2,131	2,470
Kiribati	129	90,700	811	3,550	718
Low HDI	**138–173**				
Vanuatu	140	199,800	12,190	680	1,905
Solomon Islands	147	447,900	28,370	1,340	1,193
PNG	164	4,790,800	462,243	3,120	1,140
Totals PICs		**6,905,900**	**527,444**	**19,780**	

[a/] The UNDP Human Development Index, which measures changes over time in the level of human development, is based on three indicators: longevity, as measured by life expectancy at birth, educational attainment, as measured by adult literacy rate (2/3 weight) and combined gross primary, secondary and tertiary enrolment ratio (1/3 weight), and standard of living, as measured by GDP/capita at the purchasing power parity (PPP) rate.

Sources: UNDP Human Development Report 2002.
SPC Selected Pacific Economies – a Statistical Summary (SPESS) 1999.

The contribution of the agricultural sector to the GDP ranges from 3% in the Federated States of Micronesia to 40% in the Solomon Islands. Table 2, indicates the relative importance of the sector by country.

Table 2. Relative Importance of Agriculture of Pacific Island Countries

	Geographic Type	Importance of Agricultural Sector
Cook Islands	High islands and atolls	Considerable: main export earner subsistence a significant component of GDP
FS of Micronesia	High islands and atolls	Some small export earnings, some domestic cash income and some subsistence
Fiji	High islands a few minor atolls	Fundamental – main employer and net foreign exchange earner, subsistence a significant proportion of GDP
Kiribati	Predominately Atolls	Considerable – important for subsistence – copra important for out-island cash income and some foreign exchange
Marshall Islands	Atolls	Limited - some subsistence and income earned from copra
Nauru	Raised Coral Island	Insignificant
Niue	Raised coral Island	Significant – subsistence and some root crop exports
Palau	High islands and atolls	Some - market gardening
Papua New Guinea	High islands a few small atolls	Fundamental – overwhelming source of employment – provides a substantial proportion of net export earnings - subsistence a significant component of GDP
Samoa	High islands	Fundamental – subsistence found to be strength of economy
Solomon Islands	High islands – A few atolls	Fundamental – overwhelming source of employment – provides a substantial proportion of net export earnings - subsistence a significant component of GDP
Tonga	High islands – a few small atolls	Fundamental – agricultural led economic growth
Tuvalu	Atolls	Some - subsistence and some cash income from copra
Vanuatu	High islands – a few small atolls	Fundamental – overwhelming source of employment – provides a substantial proportion of net export earnings - subsistence a significant component of GDP

Source: McGregor, 1999.

Farming is predominantly small scale, low in productivity and based mainly on family labour and low adoption of modern technologies. Produce is largely consumed on farm, with limited amounts marketed. Root crops are the main staple, commonly grown with coconuts, breadfruit, bananas and plantains. Although the agriculture sector in Fiji is more commercial, subsistence farming still remains important. The PICs have substantial marine resources, with fish providing an invaluable source of revenue, food and protein. Although in-shore aquaculture is poorly developed it has considerable potential.

Typical constraints faced by producers in the region include poor quality and availability of planting material, lack of efficient pest control and monitoring programmes, high post-harvest losses and inadequate agro-processing, poor animal health, high cost of feed and a poorly developed domestic and export industry. Technology transfer and information systems to encourage producers to be more price and market responsive, therefore, can be developed significantly, to enhance efficiencies.

Specifically for export markets, meeting assured quality and quarantine standards still remain major impediments. Currently, although national food laws are at various levels of development, food standards and regulations are generally inadequate. These considerations and the process of meeting WTO agreements for existing members[6] and negotiations for entry of potential members will be major issues in future trade and export development strategies. In addition to WTO, Regional trade in agriculture is also subject to a number of other agreements. These include, the South Pacific Regional Trade and Economic Co-operation Agreement (SPARTECA), which allow preferential access to Australia and New Zealand, the Cotonou Agreement for European markets and the Generalised Systems of Preference (GSP) for Europe, USA and Japan.

A.2 Strategic Development and Food Security Framework

Common constraints facing the economies of the Pacific Island Countries include:

- narrow resource base and fragile natural environment;
- low economic growth, reliant on tourism and primary exports;
- small and poorly integrated domestic markets;
- limited intra-regional trade due to similar commodities and high logistical costs;
- large distances from international markets and high cost of international freight;
- high costs of energy;
- limited Infrastructure and transport;
- low human and institutional capacity, exacerbated by significant out-migration; and
- large public sector and limited private sector involvement.

[6] WTO members in the Region include Fiji, Papua New Guinea and the Solomon Islands. Amongst the remaining countries, principally Samoa, Tonga and Vanuatu have applied for accession.

Although the region, as a whole, is classified as low-middle income with an average GDP per capita of around US$1,337, economic growth has not resulted in broad based social development. Key social indicators have registered little improvement in recent years and compare unfavourably with many countries. In addition, to address economic difficulties a number of countries in the region are engaged in economic reforms to reduce national debt and public spending and encourage private sector development. However, these adjustments have further exacerbated underlying problems of poverty. The reduction in public sector expenditure has resulted in unemployment and loss of incomes, which together with under-resourced health and education services have worsened the conditions of the poor. Consequently segments of the population remain vulnerable to food and economic insecurity. Recent surveys indicate large differences in income and wellbeing within PICs (Table 3). In Fiji, for example, research has shown that 25 per cent of households cannot afford a basic standard of living and that the poorest do not have guaranteed access to land, jobs or assured income. In Papua New Guinea, income is highly skewed. Although the average GDP per capita is estimated at about US$1,140, some 80% of the population are believed to have an annual income of less than US$350. Available household income and expenditure data from the Solomon Islands also reveal marked inequality in household incomes, despite considerable value of subsistence production and the importance of social and kin distribution systems. Many urban and rural households have poor living conditions, which lack safe drinking water and sanitation. In Kiribati, a significant number of households live in overcrowded conditions, whilst only less than 20% are in paid employment. Most household expenditure is on food.

Table 3. Poverty Levels [a/]

Country	Percentage Dying less than 40	Combined Social Weight [b/]	Human Poverty Index
Niue	6.7	0.7	4.8
Tonga	8.4	2.3	5.9
Cook Islands	6.4	5	6.1
Tuvalu	9.8	5	7.3
Fiji Islands	7.4	10.3	8.5
Samoa	10.3	9	8.6
Palau	7.3	14	10.8
Nauru	17.4	0	12.1
Kiribati	16.3	11	12.6
Marshall Islands	13.2	15.2	19.5
FS of Micronesia	10.5	32	26.7
Vanuatu	12.2	18.7	46.6
Solomon Islands	13.7	25.7	49.1
PNG	22.6	36.7	52.2

Source: Pacific Human Development Report 1999.
[a/] Higher values indicate higher extent of poverty.
[b/] Combined Weight (% illiterate, no access to health services and >5 year old who are underweight).

The main agricultural and food security objectives in the PICs are to increase domestic production and productivity, through modern technologies, and reduce dependence on food imports. In particular, emphasis is on diversification, including fruits and vegetables, to develop high value export markets and, domestically, to augment the diet and nutritional status of the population. Accordingly, improving efficient production, strengthening technology transfer and developing capacity in trade and policy, especially in a changing global environment, are seen as crucial areas in enhancing food security, market development and economic growth. To this end adequate attention should be given to the reform of national research and extension systems, the implementation of efficient advisory services and the

introduction of effective communication methods and tools to support knowledge and information sharing, capacity building and technology adoption.

A.3 Relevant FAO Assistance

Relevant FAO assistance in the Region in food security, agriculture and poverty alleviation are guided by Communiqués from the South West Pacific Ministers of Agriculture meetings and currently focus on the following main areas:

- Food Security Mapping and Nutrition;
- Farming Systems and Market Development;
- Plant Protection;
- Livestock Production;
- Fisheries Production;
- Environmental Protection and Sustainable Forest Management; and
- Agriculture Policy and Trade Facilitation.

Food Security Mapping and Nutrition

Assistance covers activities related to development of the Food Insecurity and Vulnerability Information and Mappings Systems (FIVIMS) and Food and Nutrition programmes, covering food safety and quality, Codex Alimentarius and Nutrition Policy. Key activities undertaken include:

- Study on existing information systems and databases relevant to FIVIMS in Samoa;
- FIVIMS Strategy Workshop in Samoa;
- Regional Expert consultation on FIVIMS initiatives in the Asia Pacific Network for Food and Nutrition;
- Studies to review capacity of food laboratories in Fiji, Samoa, Solomon Islands, Tonga and Vanuatu under TCP/RASA/2801 (Strengthening food analytical capabilities);
- FAO Regional workshop for Codex Delegates on Fish & Seafood Quality Management;
- Technical assistance in developing the Samoan National Nutritional Plan of Action;
- FAO, WHO and SPC consultation on Pacific Islands Food Safety and Quality; and
- FAO-WHO workshop on Food Safety and Codex Alimentarius.

Farming Systems and Market Development

FAO assistance is provided to improve farming systems and marketing in support of sustainable livelihoods of farm households. Within the framework of UNDP and FAO TCP projects, advisory and supervisory services (ATS/STS) are provided to a number of countries. Key activities undertaken in 2002 include:

- A regional workshop on preparing training manuals for extension workers on farm management, group agri-businesses and marketing extension;

- Advisory assistance to Vanuatu and PNG on TCP projects in Capacity Building for Farming Systems Development in Support of the Special Programme for Food Security and Improved Food Production;

- Advisory assistance in support of a UNDP project for Private Sector Development.

- Advisory assistance in implementation of UNDP Palau country project on Capacity Building in Farm Management, Marketing, Value-addition Technologies for Sustainable Livelihoods;

- Technical support to Fifth WTO Roundtable on The possible impact of the WTO on marketing of agriculture products and food security in the Pacific Island Region; and

- Technical assistance in preparation of farm management and marketing training and extension material for advisory/extension services.

Plant Protection

FAO Plant Protection plays a significant role in technical and advisory strengthening of national Plant Protection and Quarantine services. The regular programme of the SAPA Plant Protection service is sub-divided into four components. (a) International Plant Protection Convention (IPPC) - work through national and regional plant protection organisations on matters related to plant health standards and improvement of bio-security and quarantine (b) Integrated Pest Management (IPM) – to assist member countries develop tools and apply methods on IPM and participate in training programmes to increase skills in pest control and decision-making in pest management. (c) Pesticide Management – to assist member countries update their International Code of Conduct on Distribution and use of Pesticides and monitor implementation of the Code and (d) Empress - focus on migratory pests, such as Coconut Flat Moth out-breaks in Cook Islands and spread of Coconut leaf beetle (Brontispa) in Nauru. Key activities undertaken include:

- Technical assistance in preparation of farm management and market training and extension material for advisory/extension services;

- Technical assistance in Quarantine Measures for Organic Banana Export to New Zealand from Samoa;

- Technical assistance in determining potential native Flatworms through inventory and identification in Niue, Tonga, Cook Islands, Christmas Island (Kiribati) and Vanuatu. Strengthening Biological Control of Giant African Snail via Flatworm predator Platydemus manakwari;

- Technical assistance in Fruit Fly Survey in the Lines and Phoenix Group;

- Technical assistance in assessment of Rodent damages to food crops in Tonga;

- On-going technical assistance to Kiribati on IPM of Rats in Coconut plantations;

- Technical assistance to Vanuatu on the impact of Meremia peltata weed on food crops in Vanuatu;

- Technical assistance to Cook Islands on control of the Balloon vine weed on food crops;

- TCP project - Mass propagation of Taro varieties resistant to Taro Leaf Blight disease in Samoa;
- TCP project - Rodent management in Coconut plantations in Kiribati; and
- TCP on Integrated management of Fruit Piercing moth on fruits and vegetables in Vanuatu.

Livestock Production

Livestock provide an important source of food security in the Region. To support this FAO assistance has been provided in the following areas;

- A Regional TCP (TCP/RAS/0172) on Training in Meat Processing Technology;
- FAO regional workshop on the State of World Animal Genetic Resources;
- Proposed FAO, CFC GTZ project on Meat Commodity Diversification and Upgrading of Meat Processing in Asia and the Pacific; and
- Proposal for EC/FAO assistance to the broiler industry.

Fisheries Production

In fisheries, activities and programmes focused on the sustainable conservation, development and management of fishery and aqua-culture resources in the Region. Specific FAO activities included continuing improvement of fisheries statistics and distribution of publications, in particular the Code of Conduct for Responsible Fisheries. Key activities undertaken in 2002 included:

- Fiji – On-going assistance to national shark fisheries management;
- Kiribati - Feasibility study on development of shrimp farming;
- Kiribati - Study on ecological and socio-economic factors in seaweed farming;
- Marshall Islands – On-going TCP on Seaweed cultivation;
- Niue - TSF on re-establishment of Hakupu Marine Conservation Area;
- PNG - Study on formulation of national fisheries management plan for sharks;
- PNG - Study on stock assessment of Sepik river system;
- PNG - CFC/FAO/INFOFISH Project on Promotion of processing and marketing of value-added tuna products from Island countries in the Asia-Pacific region;
- Tonga - On-going TCP on Development of seaweed farming;
- Tonga -Study on tuna and bottom fishery license management;
- Regional – On-going TCP on National HACCP-based fish inspection systems;
- Regional – On-going TF on Support for Improvement of Statistics on Coastal and Subsistence Fisheries and Aquaculture;

- Regional - Aquaculture Country Profiles for the Pacific Island countries;
- Regional - Updating Fishery Country Profiles and Atlas for 14 Pacific Island countries; and
- Regional - Study on Pacific island fisheries (regional and country information).

Environmental Protection and Sustainable Forest Management

The total value of forests and trees including bio-diversity in the Region is immense, with timber and non-timber forest products playing an important role in both the household and national economies of the countries. Forests are also are crucial in environmental protection providing erosion control and regulation of ground water. FAO assistance however, recognises vast differences between countries - in topography, economic status and social development – and, consequently, their specific needs in supporting member countries' national forest programmes (NFPs). Assistance is provided in the dissemination of technical information, specific advisory services in forestry-related development issues and assistance in strengthening forestry programmes. An important element is capacity building through workshops and training. National forest programmes and policies are also being strengthened through assistance to review and draft forestry legislation. Key activities covered in 2002 include:

- FAO/GTZ/SPC regional workshop on Pre-harvest Forest Inventory and Forest Statistics;
- Asia Pacific regional workshop on forest products statistics and reporting;
- National workshop on the Role of Forests and Trees Outside Forests in Samoa;
- Technical support to 19th Asia-Pacific Forestry Commission Meeting;
- Technical support to key forestry meetings; Heads of Forestry, UNFF, and Regional Code of Logging Practice;
- Technical support to SPRIG, AusAid funded South Pacific Regional Initiative on Forest Genetics and FORSPA, the Asia Pacific Forestry Research Project;
- Technical support to the Pandanus Conservation Project-Kiribati;
- FAO/SPC, Fiji Forestry Department and AusAID, provided technical and financial support to training of technical officers from Samoa, Tonga and Vanuatu in best timber utilisation practices;
- Technical assistance to Samoa Forestry Division in effective forest planning and management; and
- Technical assistance to Marshall Islands in study on coconut wood utilisation

Agriculture Policy and Trade Facilitation

On-going short and long term FAO assistance in policy and trade include:

- FAO regional workshop on the Uruguay Round Follow-up and Multilateral Trade Negotiations on Agriculture under FAO’s Umbrella Programme;
- National Strategies for Agricultural and Fisheries Development: Horizon 2015 for the Marshall Islands and Kiribati;

- The Fifth FAO Roundtable meeting for Pacific Island countries on WTO Agreement Provisions; and

- The TCP project (TCP/RAS/2906) to Evaluate the Benefits and Costs of WTO Membership for the Food, Agriculture, Fishery and Forestry Sectors of Small Island Countries in the Pacific;

A.4 Institutional Framework for Economic and Agricultural Development.

The main institutional framework for regional economic policy and development include:

- Pacific Islands Forum;
- Pacific Islands Forum Secretariat;
- Council of Regional Organisations in the Pacific;
- Secretariat of the Pacific Community;
- South Pacific Forum Fisheries Agency;
- University of the South Pacific School of Agriculture;
- University of the South Pacific School Institute for Research, Extension and Training in Agriculture;
- South Pacific Regional Environment Programme; and
- South Pacific Geo-Science Commission.

The Heads of Government of all the independent and self-governing Pacific Island Countries including Australia and New Zealand collectively form the Pacific Islands Forum (PIF). The Forum is the region's main political and economic policy making institution. The heads of state meet annually to develop collective responses to regional issues.

The Pacific Islands Forum Secretariat (PIFS) is the Forum's administrative arm and the secretariat for Forum-related events. The Forum Secretariat is responsible for implementing PIF policies and providing some coordination for the development assistance on regional basis. The Secretariat has four Divisions: Development and Economic Policy, Political and International Affairs, Trade and Investment and Corporate Services. The Trade and Investment Division assists member Governments in trade policy advice, co-ordinating various activities in Trade Facilitation and technical assistance.

The Council of Regional Organizations in the Pacific (CROP) is the co-ordinating body for the nine Regional Intergovernmental organisations:

- The South Pacific Forum Fisheries Agency (FFA);
- Pacific Islands Development Programme (PIDP);
- Secretariat of the Pacific Community (SPC);
- South Pacific Applied Geo-Science Commission (SOPAC);
- Pacific Islands Forum Secretariat (PIFS);
- South Pacific Regional Environment Programme (SPREP);
- South Pacific Tourism Organisation (SPTO);
- The University of the South Pacific (USP);
- The Fiji School of Medicine (FSM).

The Secretariat of the Pacific Community (SPC) has 27 members[7] and provides technical advice, training and assistance in economic development to 22 countries and territories in the Region. In Agriculture the Secretariat provides technical support, training and information to national and regional agriculture programmes under four key areas; (1) Plant Protection; (2) Crop Improvement (3) Animal Health and Production and (4) Forestry and Agroforestry Development.

B. PROJECT RATIONALE AND JUSTIFICATION

B.1 Issues in Agricultural Production and Food Security - Present Situation

The development policies of PICs have common elements which include raising the productivity of subsistence farming, increasing self-sufficiency in food production, diversifying production, improving marketing systems, promoting exports, developing human resources and improving the quality of life of poor and vulnerable groups. An increase in domestic agricultural and food production is viewed as being essential to enhancing national and regional food security and reducing dependence on imports.

Food production and security in many Islands is relatively fragile and susceptible to periodic external (natural) shocks. In recent years, the onset of several El Niño and La Niña induced weather patterns, severely affected food production and left large segments of the population in many countries reliant on emergency food aid. Most notable examples were severe frost and drought in PNG in 1997 and drought in Fiji in 1998, which resulted in severe food shortages. In the atoll countries, seawater incursions, due to rising sea levels, have reduced domestic food production and further increased dependence on imports.

In addition, most Island countries, especially those with considerable agricultural potential, see the influx of food imports (over several decades[8]) as having two main adverse effects: (i) diverting scarce foreign exchange reserves away from other productive sectors of the economy, which could alternatively stimulate growth and improve public services and; (ii) given the nature of food imports, lowering the nutritional status of the population and increasing health problems and expenditure[9].

Sustainable use of the vast forestry and fishery resources is also an important priority area. In particular Governments see the need for concerted efforts to preserve forests in areas of growing population pressure and to ensure the effective management of coastal fisheries.

In response to these concerns there is growing awareness amongst Island countries that appropriate policies and investments are required to ensure future food security and sustainable use of resources. In meeting this objective, agriculture will play a critical role, both in

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7 American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji, France, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United Kingdom, USA, Vanuatu, Wallis and Futura Islands.

8 Most Pacific Island Countries are net food importers. Migration and remittances, higher incomes and urbanisation, have resulted in fast growing demand for imports of convenience foods.

9 The trend away from traditional diets has contributed to a significant rise in diseases such as obesity, heart disease, hypertension and diabetes. The treatment of these has in turn greatly increased pressure on health resources and expenditure.

production and trade, though presently its capacity to do so is constrained by a number of factors. Key among these are:

- Low productivity (subsistence) agriculture;
- Critical gaps in technology transfer and adoption of efficient techniques and inputs;
- Poor market integration of producers and consumers;
- Decline in traditional export earnings;
- Low HR development and institutional capacity in trade and policy; and
- Low awareness of WTO related issues and protocols.

In addition to making agriculture more efficient and productive, through technology transfer and adoption of modern technologies and husbandry practices, integrating producers into markets and making them more market responsive are also seen as critical areas in future development strategy. Presently, the lack of human and institutional capacity in policy and trade remains an important constraint as do access to market information, infrastructure and services for producers. Strategic investments in trade related capacity building and human resource development, price and product information systems, in post harvest storage and processing would, therefore, have significant returns.

Currently there remains a considerable lack of information, knowledge and expertise, in most PICs, in participating in multilateral trade negotiations as well as taking advantage of trading opportunities, specifically in line with issues related to agriculture, economic development, poverty reduction and food security. Ad-hoc information and communication activities could contribute to solve these constraints. Specifically, in trade, principal areas requiring support include:

- Strengthening capacity in multilateral trade negotiations; and
- Strengthening capacity in WTO issues and agreements.

The first of these will improve capacity in analysis, formulation and negotiation of agricultural trade polices, building on benefits member countries have gained from the FAO/NZODA/Commonwealth sponsored annual Round Table meetings on WTO matters. The second would gear countries up to meet specific agreements under WTO within the timeframe of 1 January 2005, as set by the Doha Ministerial Conference. WTO, topics of relevance include:

- Agriculture;
- Market access for non-agricultural products;
- Aspects of TRIPS;
- Anti-Dumping actions;
- Subsidies and countervailing measures;
- Trade and Environment and Multilateral environmental agreements; and

– Agreements on the reform process on LDCs and NFIDCs.

B.2 Beneficiaries

The primary project beneficiaries will be rural, food insecure households, especially in vulnerable areas. In improving production and productivity in agriculture, through human resource and institutional capacity building and undertaking specific priority activities, the programme will make available improved technologies and know-how. Producers will be able to intensify production, improve productivity, diversify crops, interact better with markets and increase incomes. In conjunction with other on-going activities in nutrition and education, improved food production and use will also benefit rural households in utilising food products in more nutritionally effective ways and in reducing losses.

Women and youth, individually and in groups undertake a significant role in food production (particularly in Melanesia) and in post-harvest and marketing activities in Pacific Island countries. The roles that women and youth play in the production process, post harvest and marketing activities and the constraints faced by each, will be critical variables used by the country specific projects when determining client needs. Women and youth and their groups will be targeted at the grassroots level in country specific activities and where appropriate participate in the national steering committees.

In addition to farm households, staff in key sector institutions (research and extension) will benefit from training and capacity building activities (within country specific projects) to enable them to develop and disseminate more appropriate technologies.

At a national level, programme activities will complement a number of on-going initiatives in trade facilitation, which will ultimately benefit countries in understanding, meeting and trading in key international markets, particularly under WTO agreements and protocols.

A detailed identification of beneficiaries, on the basis of specific selection criteria, will be carried out during the inception phase.

B.3 Expected End of Project Situation

The programme will assist Pacific Island Countries in various dimensions of increasing domestic food production and productivity and, in complementing other development programmes, providing institutional strengthening and human resource development. At the end of the project countries will be expected to show greater potential in improving domestic production of food and food-related stuff and self-sufficiency, reducing dependence on food imports and in doing so re-deploying scarce foreign exchange reserves to other growth enhancing sectors of the economy. A growing trend in substitution of domestic food products for nutritionally poor imports is also envisaged which will have indirect health and nutritional benefits for consumers as a whole. The essential elements required to achieve and sustain these trends would be timely implementation of project activities, an effective monitoring and evaluation of impact and the full commitment of participating Countries

B.4 Project Strategy

The Trust Fund project would build upon the national development and food security policies of the PICs, which inter alia aim to efficiently increase domestic food production and trade, and reduce dependence on food imports. The project will fund an important "time slice" of a wider Regional Programme for Food Security (RPFS) and act as a catalyst for mobilising further donor support to the wider programme. The strategic framework for the project will be to increase income generation opportunities for rural households, under Component I (improving productivity and production in agriculture, forestry and fisheries) and to enhance that effort by complementing current actions that aim at strengthening regional and national capacity in agriculture and trade under Component II (strengthening trade and agriculture policy).

Country activities under Component I will be on areas specifically identified by the participating countries as their perceived priorities in the areas of agriculture, forestry and fisheries. The activities thus cover a broad spectrum ranging from developing fruit production and household food gardens, pig production, small scale water harvesting and irrigation to fishing and small scale crop and fish processing. Focusing on activities that represent national priorities reinforces ownership by participating countries and increases the likelihood of strong national commitment to implementation. Since country proposals were made with careful consideration given to implementation capacities, sustainability outlook for activity outputs and achievements would be further enhanced.

Component II will be consistent with key elements of a commodity pathway approach[10], which views production, marketing and trade in a continuum, as opposed to discrete and separate activities. Using this approach, although in the first instance emphasis under production will be to enhance productivity and output, issues which may be important in future marketing and trade, such as quality and safety, will also be encompassed, for example, in technology transfer and training. In essence, the approach addresses the entire production and distribution pathway for individual commodities and is developed with participation of local communities. Although the system is holistic in its approach irrespective of whether the commodity is for trade or subsistence, in practice it is appropriate to envisage a commodity pathway at two stages – pre-harvest and post- harvest.

Pre-Harvest -Production

As the pre-harvest or production part of the commodity pathway markedly influences product supply, quality and sanitary/phytosanitary properties, the ultimate purpose of production (for consumption or trade) influence the approach that needs to be adopted in developing a specific commodity pathway from start. For example if the primary purpose is food security in a subsistence economy, important considerations in developing sustainable farming systems would be community dietary requirements, preferences and traditions. If production is market driven, however, the production systems must be able to provide a consistent supply of marketable product. Here, quality and compliance with import (SPS) specifications of the importing country (export trade) or with quality and food safety requirements in local markets (domestic trade) are important and must be addressed during the production (pre-harvest) component of the pathway. In the Pacific islands agriculture is mostly semi-subsistence where production systems for trade and subsistence cannot be readily separated.

[10] As adopted by SPC.

Post-Harvest

Quality expectations of consumers and import (Sanitary and Phytosanitary) specifications of regulatory authorities in importing countries (export trade) or quality and food safety requirements in local markets (domestic trade) are key factors during the post-harvest stage of the commodity pathway. There are two national capacities needed to develop and sustain this part of the commodity pathway that are related to trade and sustainability. Both are a regulatory function of national quarantine and bio security agencies. The first is the capacity to comply with SPS standards, which will be the basis of import specifications of the importing country. The second is the capacity to technically support market access requests for potential exports and to undertake import risk analysis on potential imports. These are important capacity building activities, without which little increase in export trade can be expected. Alternatively, increased food imports without technically adequate import risk analysis will increase the threat of introducing serious pests and diseases, which are a threat to the environment and national food security.

In keeping with FAO's comparative technical advantage and its focus on enhancing national regional programmes for food security, the project will focus on production under Component I. This component will focus on specific commodity based activities in line with country sector and sub-sector priorities. For individual countries, the level of investment under component I will be determined by their human poverty index, level of malnutrition, percentage contribution of agriculture to GDP, total GDP, implementation capacity, population and population density. A matrix of these indicators and their rankings by country is presented in Annex 5. The indicators and their rankings form an objective basis for objective initial allocation of project resources to country specific activities. Available resources could be re-allocated during project implementation, guide the Project Co-ordinator, the RPSC, the donor and FAO in reallocating resources from activities, which for various reasons, face insurmountable problems. Funds will be released for priority activities in tranches depending on successful implementation and mid term evaluation of the main priority activity. This is to ensure that resources are used as optimally as possible and that an appropriate incentive mechanism is in built.

The approach under Component II will be to focus on priority activities in supporting trade facilitation of agriculture produce, which will complement and not duplicate efforts by other development partners and agencies. This will ensure the optimal use of resources in creating an adequate trade and service framework to support successful development of commodity markets.

Active involvement of relevant agencies in particular academic and research institutions in implementing activities under Component II would be essential. For this purpose, strong linkages between such CROP institutions and counterpart institutions in Italy will be forged. These institutions will help implement the Component II activities. The Project Co-ordinator has leadership role in establishing the linkages by identifying the institutions and liaison to secure agreement as to implementation roles. The institutions will implement research activities in the post-harvest areas that facilitate trade of existing and prospective export commodities in the region. The established relationship would be a significant element in ensuring sustainability of project achievements after the life of the project.

In view of the complexity of the programme, to ensure flexibility and better linkages of activities to regional and national priorities, the project strategy, outputs and activities will be

validated and further specified with support from relevant FAO technical units during project inception. Furthermore, during project inception phase complementary activities in key areas such as information, communication and extension will be identified to support project objectives and results.

B.5 Institutional Framework and Counterpart Capacity

An outline of the appropriate institutional framework for projects in development and agriculture is provided in Section A.4. In the larger agrarian Islands, counterpart capacity is not considered a problem and specific agreements with implementing agencies will be finalised during inception. In the smaller non-agrarian countries counterpart capacity may be a constraint (some of these countries do not even have a Ministry or Department of Agriculture). Again mechanisms for overcoming this will need to be developed during inception.

B.6 Management and Co-ordination

Project management will be at regional, national and local levels. Relevant FAO technical units will be requested to provide inputs in defining outputs and activities during the inception period in finalising the project implementation and work plan.

Regional Project Management (RPMU)

The project will be implemented under the supervision of FAO's Regional office for Asia and the Pacific (RAP) in Bangkok, which will have overall operational responsibility. The Regional Project Management Unit (RPMU) will be established at FAO's Sub-Regional Office for the Pacific Islands (SAPA), in Apia Samoa. The RPMU will comprise a Project Co-ordinator (Rural Development Specialist/Economist), an Assistant Project Co-ordinator (M&E Specialist) and a Secretary to provide administrative support and will work in close coordination with SAPA. Terms of Reference are provided in Annex 4 and include Project Monitoring.

Regional Project Steering Committee (RPMC)

A Regional Project Steering Committee (RPSC) will provide both management support (to the Project Co-ordinator) as well as technical guidance to RPMU. The RPSC will comprise one representative each of the donor, FAO/RAP, CROP agencies and one representative each of Melanesian, Micronesian and Polynesian countries. The RPSC will need to be established as soon as possible after the start of the Project and the Project Co-ordinator will work towards establishing this body during the inception period. The RPSC Chairperson will be elected at the Committee's first meeting. The main tasks of the RPSC include:

a) Ensure effective and efficient disbursement of project resources by deciding - based on advice of the Project Co-ordinator - on reallocation of resources within project components (e.g. in Component 1, from activity to activity within countries or from country to country) and from component to component.

b) Periodically assess progress of the Project against the indicators elaborated in the Project's and the country logical framework matrices.

c) Assess and approve or modify, if necessary, the annual work plans of the Project. The RPSC will advise the Project Co-ordinator of emerging issues and future direction or

activities, in which the project may involve.

d) Review and endorse or otherwise the annual reports of the Project.

The role of the RPSC in providing management support for the PC is vital. Effective and timely management decision-making is essential for successful project delivery to 14 countries at vastly different stages of development during a short project lifetime. This is particularly relevant to the need to quickly move resources from activities, which although of high priority to a country, are immobilised for various reasons to others that could be implemented relatively easier. A threshold level of implementation delays or other problems that would trigger such action would appear to be four months. An appropriate mechanism for timely notification of the Project Co-ordinator of such decisions and for execution of the decisions would need to be established as soon as possible after formation of the RPSC. Prior to establishment of such a mechanism, FAO SAPA will act on behalf of the RPSC while keeping members informed.

During the inception period and at commencement of implementation, the PC will develop (analyse components and costs of proposed activities) and confirm with national authorities, the country specific activities to be undertaken under the project. Similarly, the PC will confirm implementation details of the RPFS Component II activities. The country specific activities and implementation details of Component II will be tabled for endorsement at the first meeting of the RPSC or at its earliest possible meeting.

The following steps are guidelines for the decision-making process in relation to reallocation of resources from country specific activities that experience planning or implementation problems. The RPSC may modify these steps and add further guidelines for its role in deciding on reallocation of project resources.

(a) The PC will consult with relevant country officials and assess the feasibility that the problem activity could make sufficient progress within a reasonable time (not exceeding 4 months).
(b) Should the PC be satisfied adequate progress could be made within a reasonable time, the PC will inform the country authority and the RPSC of a new timeframe for implementation.
(c) Should the PC be unconvinced enough progress could be made within the reasonable time, the PC will inform the country official and examine other possible activities within the same country which could take the place of the problem activities.
(d) At his/her own discretion, the PC may recommend with justifications, to the RPSC, reallocation of resources to activities within the same country or in other countries or to other RPFS activities. Under such circumstances, the country authority may if it so wishes, requests the RPSC to reconsider the justifications and recommendation for the reallocation.

The RPSC will meet at least once a year. On years during which the Biennial meetings of FAO South West Pacific Ministers for Agriculture convene, the RPSC meeting should take place during the month prior to the Ministers' meeting. Another consultative mechanism to timely respond to particular problems submitted by the PC, such as an internet network, will be investigated during the inception phase.

National Project Management (NPMU)

At the national level the project will be managed and implemented by a National Project Management Unit (NPMU), under a National Project Steering Committee (NPSC). Functions and composition of NPMU will be detailed during the inception phase on the basis of country specificities and country projects. Overall, the NPMU will be in the Ministry responsible for Agriculture, whilst, where possible, the NPSC will consist of representatives of line agencies concerned with national food security (e.g. agriculture, trade, social development and health) and key stakeholders (local communities and NGOs). A National Project Coordinator (NPC) will head the NPMU and co-ordinate activities in liaison with line departments and RPMU. The Ministry responsible for agriculture will nominate the NPC. The NPC, who is likely to be full time involved in the project management, would preferably be an Agricultural Economist/Rural Development Specialist with experience in projects related to agriculture development and/or food security. The Government will contribute to the overall project and functioning of the NPMU in providing administrative and logistical support as and when required.

Specifically, the NPMU would be responsible for (i) overall co-ordination of the project, (ii) organization and supervision of all backstopping requirements for local and international assistance, (iii) organization and supervision of training programmes for Country SPFS staff and for farms in project areas, (iv) co-ordination and organization of training courses in collaboration with the RPMU for relevant aspects of the project (v) co-ordination of farm demonstrations programme, and (vi) procurement and distribution of equipment related to project activities.

At the onset of the project the NPMU would need to organize and ensure participation of the local communities in project areas and with assistance from the RPMU develop a detailed implementation plan. The EU Development of Sustainable Agriculture in the Pacific (DSAP) Project (operating in 8 countries) is expected to commence at the same time as the RPFS. DSAP mode of operation at the national level is similar to that of the RPFS. Strategically, it would be advisable for the RPFS to use where appropriate in participating countries the personnel involved in the DSAP national coordinating units, for operating the NPMU. Thereby, such persons could maintain a good overview of the complementary activities of the two projects in the country and thus avoid duplication. The NPMU would also be responsible for all reporting requirements, including auditing of accounts, and liaison and cooperation with FAO and other relevant projects and programmes that can support the activities of the project and for organizing workshops and seminars.

The Regional Project Management Unit and the National Programme Steering Committee will provide guidance to the National Project Management Unit.

Local Project Management (CBO)

At local level, project activities will be coordinated and implemented under the guidance of community based organisations (CBO). In the absence of such organisations the NPMU will actively seek to establish one in collaboration with community heads and NGOs with experience of working in particular areas.

The budget for Project Coordination and Management is detailed in annex 1 as item B.6.

C. DEVELOPMENT OBJECTIVE (GOAL)

In line with Government policies, the overall development goal of the project would be to improve both national and regional food production and security through reduced dependence on food imports and related foreign exchange expenditure. The project will directly support activities in raising productivity and production in agriculture, forestry and fisheries and strengthen capacity in agriculture trade and policy.

D. IMMEDIATE OBJECTIVES, OUTPUT AND ACTIVITIES

Regional and National food security in the Pacific is multifaceted and requires an appreciation of both production and non production factors, which collectively determine performance and efficiencies in agriculture, forestry and fisheries and their internal and external markets. In view of the range and diversity of these issues, it is equally recognised that no one project can comprehensively address all of the key (vertical and horizontal) issues and that overall impact is greatly enhanced when individual development initiatives work in partnership, with activities complementing, and not duplicating, each other. This reasoning, together with funding parameters, provides the basis for determining the focus and relative weight to be given to the immediate objectives and activities under the project. An additional consideration is FAO's considerable comparative advantage in providing technical expertise and support specifically to food production (supply side) and food security-related activities.

Accordingly, the project will have two immediate objectives (components), in relation to its overall development goal. These are;

(i) Enhancing Food Production and Security; and

(ii) Strengthening Agricultural Trade and Policy.

D.1 Enhancing Food Production and Security – US$ 3.0 Million

Background. The predominant system of rainfed subsistence agriculture, poor farm husbandry practices and inappropriate and inadequate use of new technologies and inputs, have resulted in low productivity and inefficient farming. Very limited irrigation or efficient water management techniques are employed, whilst farm-mechanisation, outside plantations, is almost nonexistent. There is considerable scope for applied research and development of appropriate technologies for smallholder agriculture and for developing participatory approaches to addressing and solving specific farm production problems. To enhance food security and develop markets for agricultural produce, therefore, will require a critical shift away from low input rainfed production systems to more diverse irrigated cropping systems employing improved practices and higher yielding seeds and inputs.

Fisheries contribute significantly to food security in Pacific Island countries through subsistence fishing and income generation particularly in the rural areas and outer islands. Aquaculture has become an attractive undertaking in many countries in the region. Similarly, developing community forestry in high countries (particularly PNG, Solomon Islands, Vanuatu and Fiji) and of agro-forestry in lower countries and atolls are important components of national food security efforts. For these reasons,

fisheries and forestry / agro-forestry development will feature in country specific activities.

In light of institutional and production constraints, component (i) will support production based activities (including fisheries and forestry / agro-forestry based activities) in each of the participating countries in line with national sector and sub-sector priorities**.**

D.1.1 Country Specific Production Activities - Country Modules - US$ 3.0 Million

Specific farm-level activities will be undertaken in each participating country over three years in line with the priority areas in individual country sector studies and strategies. The scope and size of project interventions and the allocation of project resources are based on the weightings of a number of indicators. Senior Officials of participating governments during their meeting in Apia, 9th to 11th June 2003 (to consider the RPFS documents), agreed to use this system to guide allocation of funding for country activities. They recommended using the following indicators and levels of priority:

Indicator	Weighting
Human Poverty Index	High
Level of Malnutrition	High
Vulnerability*	High
Implementation Capacity**	High
Percentage contribution of Agriculture to GDP	Medium
Population density	Medium
GDP per capita	Low
Population	Low

* Data and information will not be available until completion of comprehensive research work on the subject by SOPAC in 2004.

** The Senior Officials agreed on two indicators of Implementation Capacity - food security projects currently under implementation and overall projects under implementation. As data and information currently available on these indicators are at best patchy, the ranking was based on an assessment of NARES capacity[11] and of social / political stability of participating countries. Annex 5 provides details by country, of indicator data and their weightings as well as the resulting indicative allocations for participating countries. On the Annex 5 table, indicators by country are ranked as follows. For High, weightings are from 0 to 150; for Medium, from 0 to 100; and for Low, from 0 to 50.

Country specific production activities broadly cover major areas of SPFS, such as crop intensification and diversification, small animal production and water control as well as other areas of priority importance to the countries, in forestry / agro-forestry and fisheries. The total project budget for country specific interventions is US$3.0 million. In addition, it is estimated that the beneficiaries will contribute about US$500,000 (around 20% of the project funds) either in cash or kind, or both. Local contributions and conditions will be detailed during the inception phase when preparing comprehensive country work plans.

[11] Based on experience of FAO SAPA in the 14 FAO member countries and on discussions with persons in the Pacific agriculture knowledge system.

At this stage in formulation, the project interventions included are indicative and detailed project implementation plans and costs will need to be further developed by the RPMU and the countries concerned at inception. One of the qualifying activities to be carried out during this initial phase is the preparation of baseline data to monitor project activities and assess project impact, which includes the validation and targeting of Key Performance Indicators.
In addition, funds will be released for priority activities in tranches depending on successful implementation and mid term evaluation of the main priority activity. This is to ensure that resources are used as optimally as possible and that an appropriate incentive mechanism is in built. Projects by country - without cost estimates - are presented in the order of priority given by the countries. The indicative country allocations are presented in Annexes 1 and 5. This approach is adopted in response to the request by the June 2003 Senior Officials Apia meeting, for flexibility in country activity resource allocations. Also, the degree of flexibility allowed by such an approach would facilitate the involvement of other interested donors and of existing programmes (such as TeleFood), in funding and implementation of additional country specific activities.

A list - in the order of priority given by the FAO member countries in the Pacific - of country specific activities is presented below.

Country	**Activities**
Fiji	1. Development of Honey Production 2. Small Scale Backyard Gardening for Urban areas and Settlements 3. Beef Development Project
Papua New Guinea	1. Development of Domestic Rice Production 2. Development of a Fruit Tree Industry
Samoa	1. Chicken Production in Permaculture Farming System 2. Agricultural Produce Procession – Value Adding
Solomon Islands	1. Development of Food Processing 2. Development of Seed Gardens 3. Development of Pineapple Production and Export
Tonga	1. Smallholder Farming Systems Development
Vanuatu	1. Development of Rural Butchery in Outer Island Rural Areas 2. Development of Agro-forestry to enhance Food Security 3. Production of dehydrated root crop products
Cook Islands	1. Fruit Tree Development
FSM	1. Fruit and Tree Crop Development in Kosrae State 2. Development of Banana Production in Chuuk State
Kiribati	1. Strengthening the Development of Food Crops
Marshall Islands	1. Arno and Kwajalein Pig and Chicken Production 2. Nallu Mile Fishing 3. Laura Village Fish Processing
Nauru	1. Development of Backyard Gardening for Improved Food Security
Niue	1. Integrated Pest Management & Bi-wall Irrigation for Food Security 2. Mutahefonua Group Shredder/Mulcher for Organic Production
Palau	1. Development of Value Adding to Improve Food Security
Tuvalu	1. Development of Home Gardening for Food Security

Activities at country level would be implemented by the National Project Unit (NPU) through the CBOs, where appropriate, under the responsibility of the respective Ministries of Agriculture or other ministries/government bodies responsible for agriculture. The National

SPFS team, in countries where the programme is being implemented, will also work closely with the project. National profiles, constraints and strategic options in agriculture and food security and proposed project activities, by country, are given in the following page.

Activity Budget (D.2.2) is outlined in Annex 1

FIJI

Capital:	Suva
Land Area (km^2)	18,272
Sea Area/EEZ (million km^2)	1.26
Islands (No.)	322 (110 are inhabited)
Population (No.)	824,700 (2000)
Annual Growth (%)	1.6
Density (inhabitants/km^2)	45
Rural Population (% of total population)	54
GDP (US$ million)	1,902.4 (1997)
Agricultural GDP (% of total GDP)	16
GDP per caput (US$)	2,320 (1997)
Currency:	Fiji Dollar

A. General

Fiji is an archipelagic nation comprising about 320 islands with a total land area of 18,300 km^2 and a surrounding EEZ of about 1.3 million km^2. The group includes two large islands, several medium-sized islands, and numerous small islands and atolls. Most of the islands are surrounded by fringing and barrier coral reefs: some are of coralline origin. There are three substantial rivers, a few lakes and some man-made impoundments where fishing and aquaculture take place, but marine fisheries are predominant.

The largest sector of the economy is agriculture. Sugar exports, a growing tourist industry as well as garment exports are major sources of foreign exchange. Sugar processing alone makes up about one third of industrial activity.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture in the Economy. Despite increasing urbanization, agriculture remains the most important sector in the economy. Sector contribution (excluding fisheries and forestry) to total GDP is approximately 16%. Sugar and subsistence are still the dominant activities of the sector. Foreign exchange earnings from agriculture, fisheries and forestry have remained fairly constant in real terms at approximately 55% of gross exports. Low foreign exchange leakages from agriculture mean that the sector's share of net foreign exchange earnings is substantially higher than tourism or garments. Although agricultural workers are frequently under-employed, the sector remains the main source of employment throughout the country contributing to the distribution of national income.

Land Use, Farming Systems and Institutions. Approximately 2,900 km^2 of land (16% of the total) is suitable for arable agriculture and a further 7,900 km^2 (43%) can be used for tree crops and grazing. Some 83% of the land is owned by indigenous Fijians held under

"customary" communal tenure by land-owning groups (*mataqali*). Land, which is administered by the Native Land Trust Board (NLTB), cannot be sold but some of it can be leased to non-Fijians (and to Fijians as individuals). The largest portion of land in commercial agriculture is leased in the sugar cane areas, mainly to Indian farmers. This land is administered under the Agricultural Landlord and Tenant Act (ALTA). These leases are beginning to expire. The uncertainty of future leasehold tenure is a major contributing factor to the lack of investment in the sugar sector and increasing agricultural land degradation.

According to the 1991 Agricultural Census only 45% of arable land in Fiji is currently farmed as 95,400 farms. This is more than in previous years and confirms the trend that over the last 25 years land use was increasing faster than rural population and agricultural production. There is underutilization and inefficiency in agricultural land use that stem from unequal distribution of land ownership across all forms of land tenure.

Despite greater environmental awareness there is increasing land degradation. The major problem is widespread and indiscriminate burning. Farming on excessive slopes continues to cause serious soil erosion problems in traditional ginger/root crop areas, and marginal sugar lands. Some of this land is now becoming unusable for agriculture due to a combination of land degradation and economic pressure.

Historically, forests played a central role in the subsistence economy providing food, shelter and medicine. For villages close to the remaining tropical forest this continues to be the case. Although, the commercial value of timber resources has long been recognised, it is only now that the substantial commercial potential of renewable non-timber products is being recognised. Remaining area of natural forest is estimated at 860,000 hectares, representing around 50% of total area.

Within Fiji's 200 n miles EEZ some 1.3 million km^2 of ocean are rich marine resources for commercial exploitation and to meet subsistence needs.

Inshore fishery mainly comprises reef and inshore pelagic fish which are mainly for subsistence. The coastal pelagic resource in recent years has come under strain from the fishing practices of tuna long liners, some of whom are operating illegally within Fiji's EEZ. There has also been a net reduction in the mangrove area as this land has been converted to other uses (sugar cane, tourism developments, and urbanization). Some of the fringe reefs are under pressure from pollution, coral mining and hurricane damage.

The principal offshore fishery is tuna. There is also a significant deep-water bottom fish resource (particularly snappers) on the outer slope of the reefs and on the sea mounts. Fiji has developed in recent years a substantial industry based on the export of large tunas (yellow fin and big eye) to the Japanese and Korean sashimi market. Skipjack and albacore tuna (caught in Fiji's EEZ and imported) are canned by the Pacific Fishing Co (PAFCO). Resource assessments by the South Pacific Commission indicate that the tuna resource is fished at levels well below the maximum sustainable biological yield. However there are indications that long lining methods used for the large tunas are having adverse impact on the resource and on other species.

Major Challenges and Constraints. The most challenging food security issues for Fiji towards 2010 are sustaining domestic food production levels in line with food demand and market potential, and continuing the transition from subsistence to commercial agriculture.

Fiji's ability to meet this challenge is greatly enhanced by its comparative advantage in the production of traditional food crops. This advantage is based on farmers' ability to grow traditional crops, consumer preference, and unavailability or high cost of imported substitutes. If grown in the traditional manner, without chemicals and in rotation, these are highly sustainable activities.

Although farmers are well versed in growing traditional crops further improvements in research and extension can have high dividends, particularly in pest or diseases and making farmers aware of unsustainable agricultural practices. Quarantine has a crucial role to play in minimizing the risk of these introductions. Strategically located roads can open up significant markets for traditional food crops and provide an incentive for increased production of food crops as past road developments have shown. The nutritional value of traditional food compared with imported and processed food needs to be continually brought to the attention of the community. Farmers need to be made fully aware of the devastating consequences of indiscriminate burning on the productivity of food gardens. The rapid expansion in commercial taro production has brought with it unsustainable production practices which need to be addressed through education and in some cases through regulatory enforcement. The status of traditional foods and farming systems needs to be enhanced through school curricula, youth training programs, and via the media. The employment generating youth training programs currently being promoted by government should give priority to traditional food crop production as a high return/low risk activity. The traditional food production sector has as much to gain as any other from the demand generated from outward looking economic policies that lead to sustained economic growth. As incomes rise, so will the demand for high value traditional food.

Sugar is the most important agricultural export industry. However at best it faces the prospect of continuing erosion of preferential prices with the EU, or at worst the complete loss of these preferences. The impending shakeout of the world sugar economy may not necessarily be unfavourable for Fiji. Future viability for the Fiji industry will depend on being able to produce sugar at a profit at world market prices. Unlikely to survive are low yielding heavily indebted farms located on degraded land a long way from the mills. The remainder of the cane farms is expected to remain viable if costs can be reduced. Most of these farmers are likely to continue to see cane, with its minimal risk, as the preferred land use option. However in a more competitive environment they are more likely to be receptive to diversification possibilities. Fortunately, with the right incentives there is ample scope for the sugar industry to improve efficiency, particularly in the cane-growing sector of the industry. However the necessary investment required, to increase productivity will not occur unless there is long term security of land tenure.

Profitable opportunities have been identified for exporting certain high value niche products. Such products are not new to Fiji. More significant examples are fresh ginger to North America, mangoes to Japan, taro to New Zealand, egg plant to Canada, coconuts to Australia, organic banana puree to France, and kava to Germany. The lesson from this long experience is that marketing and not markets per se has been the major constraint. Quality, volume and continuity of supply are seen as marketing problems and for high value exports; they are the hallmarks of success, even more important than price competitiveness. Fiji, as a small producer, must always be at the premium end of quality scale. The net gains to the exporter and grower attributed to quality can be huge and usually represents the difference in terms of viability. Fiji's past experience has shown that high value export markets cannot be developed and sustained with small exporters securing supplies from farmers in an informal ad

hoc fashion. With the present structure of Fijian agriculture development of horticultural and other high-value export industries will be best undertaken by small farmers for marketing through commercial exporters and processors.

Strategic Options. Provided the issue of expiring land leases can be satisfactorily resolved a significant portion of the existing sugar industry can remain viable in the future, even at world market prices. However this will require significant, but achievable, reductions in costs. Thus the appropriate policy emphasis should be on improving the efficiency of the existing industry and not on encouraging large-scale transfer of lands out of sugar. This is indeed fortunate for no single crop or group of crops have been identified that could replace sugar in the foreseeable future. Yet, while recognising the continued existence of sugar, there is an urgent need to accelerate Fiji's diversification efforts. These efforts need to be directed in the areas where the country has a sustainable competitive advantage.

As a small island economy, Fiji faces obstacles in the development process that are not present in larger countries. It is inherently less diversified which makes it more vulnerable to both internal and external shocks. With a small population, economies of scale are difficult to achieve in domestic markets and investment in infrastructure more costly and often uneconomic. In addition to problems of smallness, Fiji is relatively isolated, is prone to natural disasters, and operates under a land tenure system that constrains availability, investment and hence productivity. However there are offsetting advantages that stem from climate, location, a relatively pest free and unpolluted environment, natural beauty, and an ability to grow a wide range of nutritional, traditional foods. Fiji's appropriate long-term agricultural strategy should be focused on minimizing the disadvantages of size and isolation and maximizing the advantages of Fiji's location and environment. The areas that best satisfy these requirements are traditional food production and high value niche exports. With suitable conditions in the right location these are the crops that can give the highest returns to farmers' land and labour resources and provide the greatest possible level of food security.

Despite the unfavourable future prospects for sugar, and other bulk commodities such as copra, agriculture has realistic potential to be a lead sector in growth and employment generation to Year 2010. Based on Fiji's identified competitive advantage relating to climate, location and environment some product growth opportunities have been identified. These include: fresh and processed fruit; root crops; spices and herbs; kava; indigenous nuts, floriculture; non copra coconut products; vegetables; handicraft raw materials; certified organic products; fresh fish exports; and value added timber products. The development of these opportunities depends on the private sector (farmers, fishermen, traders, processors, and exporters). Government and other agencies have a facilitating role in this development. Four key strategic functions for government have been identified to support the agricultural led growth and development. These are: safeguarding and enhancing Fiji favourable quarantine status; creating an environment for private sector investment; ensuring agricultural, fisheries, and marine development takes place within environmentally sustainable limits; and, facilitating the development and transfer of technology.

C. Project Interventions: Income Generation Activities

I. Development of Honey Production in Fiji

Honey has significant potential in Fiji, which has been confirmed by recent FAO, which confirmed the commodity's comparative advantage. Presently, the country imports

approximately US$3 million honey annually, due to the inability of domestic producers to meet demand. There is considerable recognised potential for expanding the 200 honeybee farms in the country supply both local and export markets.

The local contribution includes: Local staff supervising the project, training facilities and office for project staff.

Success Indicators.

- Increased supply of honey;
- In the local market increased production by small farmers;
- Expanded employment opportunities in the farming sector as a result of the enhanced income generating capacity of the project participants; and
- Enhanced Income source for the local farmers.

II. Small Scale Backyard Gardening for Urban Areas and Settlements

Attaining food security remains to be one of the biggest problems faced by people in urban areas and settlements. Urban migration from rural areas has increased by 40 percent in the last ten years as a result of more people moving to urban areas in search of employment opportunities. Most of these people live in poverty stricken areas and do not have access to knowledge and resources to produce enough food for their families.

The project would involve the promotion of new technologies to improve food production at household level. Backyard gardening through the use of improved planting materials will be promoted to people in urban areas.

Success Indicators

- Increased in the supply of locally grown vegetables and root crops;
- Improved nutrition to urban households;
- Improved background gardening techniques introduced to urban households;
- Expanded employment opportunities for people in urban areas as a result of the enhanced income generating capacity of the project;
- Increased contribution by the agriculture sector to the livelihood of people in urban areas.

Local contribution includes: staff to oversee the training and implementation of the project, office and training facilities.

III. Beef Development Project

The beef industry has an important role in terms of enhancing food security in rural as well as in urban areas as it is widely consumed by approximately 70 percent of the population.

In addition, there is a significant market for local beef for the local hotel tourist market. Currently domestic demand outstrips local supply as approximately F$3 million is spent to import beef from overseas.

This project will revitalize the ailing beef industry through the improvement in the quality of breeding animals to farmer's, improvement of infrastructure, and provision of necessary inputs to farmers to ensure improved beef production.

Success Indicators

- Increased supply of quality beef for the domestic market;
- Improved foreign exchange position by reducing beef imports;
- Enhanced linkage with local processors by increasing production of corned beef for exports;
- Improved quality of local beef to service the needs of the tourism market;
- Expanded employment opportunities for people in rural areas as a result of the enhanced income generating capacity of the project;
- Increased contribution by agriculture to the livelihood of people in rural areas.

Local contribution includes: staff to oversee the training and implementation, office and training facilities.

PAPUA NEW GUINEA

Capital:	Port Moresby
Land Area (km^2)	462,000
Sea Area/EEZ (million km^2)	3.1
Islands (No.)	Several large and some 600 small islands
Population (No.)	4,790,800 (2000)
Annual Growth (%)	2.3
Density (inhabitants/km^2)	10
Rural Population (% of total population)	85
GDP (US$ million)	4,740.7 (1997)
Agricultural GDP (% of total GDP)	26 (2000)
GDP per caput (US$)	1,100 (1997)
Currency	Kina

A. General

Papua New Guinea (PNG) comprises the eastern half of the island of New Guinea in the western Pacific Ocean, several large volcanic islands and some 600 small and scattered islands to the east and north in the Bismarck and Solomon Sea. The country is richly endowed with natural resources, but exploitation is constrained by the rugged terrain and the high cost of developing infrastructure. The topography of Papua New Guinea is among the most rugged in the world, with altitudes of over 4,000 metres. Large geographical diversity exists with offshore islands, lowland forests and extensive marches, dry savannah and temperate highlands. Some 90% of the country's area is classified as forests and woodland.

In addition to its National Government, PNG has a decentralised system of semi-autonomous Governments in each of its 19 Provinces. Besides the importance of agriculture, mining represents a substantial part of the country's economy, generating about a quarter of the GDP. Major exports include oil, gold, copper ore, logs, palm oil, coffee, cocoa, crayfish, prawns.

B. The Agricultural Sector

Agriculture in the Economy. Agriculture is the dominant economic activity in Papua New Guinea, providing livelihood for about 85% of the total population, either through subsistence agriculture or the cultivation of cash crops. The sector has a distinctly dual nature: traditional small holder farming systems, and the cash crop sub-sector producing for exports (e.g. plantations) and the urban markets (especially for import replacement). Forestry contributes less than crops to rural livelihoods, but is the second largest foreign exchange earner after mining.

Land Use, Farming Systems and Institutions. The agricultural potential is great, because of the abundance of fertile land and tropical climate. Of the 30% of land considered

suitable for agricultural development, only one-quarter is regularly under production and about another quarter is used at lower levels of intensity. The remaining half is far from villages, with poor market access and customary ownership restrictions. About 90% of the land with agricultural potential is held under customary land tenure within which clans grant to individual families the right to use, but not transfer, parcels of land. With increasing population growth and the spread of cash crops, the sustainability of the traditional use systems has been challenged.

Two distinct sub-sectors can be distinguished in agriculture: estates, which hire labour and which produce mainly tree crops for export; and smallholders, who grow cash crops, mainly for export, and staple root crops, fruits and vegetables for their own consumption or for sale on a small scale in their immediate vicinity. There are four main smallholder farming systems: (i) sago and taro-based systems in the wet lowlands; (ii) yams, bananas, and cassava-based systems in the dry lowlands; (iii) taro and sweet potato-based systems in the highlands and its fringes; (iv) sweet and Irish potato systems in the high altitude valleys. Smallholders have traditionally accounted for most of the output of the main export and staple agricultural commodities, namely coconut, cocoa, coffee, rubber, oil palm, cardamom, chillies and pyrethrum. Tea is the only export crop which is almost entirely grown on estates. The principal crops for domestic consumption include sweet potatoes, banana, taro, yam, cassava, sugarcane, maize and groundnut. Virtually all smallholder crops are rainfed, intercropped, have low input levels and low productivity. Food crops account for more than 50% of total agricultural output, of which about 25% of production is marketed.

The livestock sub-sector accounts for about 13% of agricultural production, of which subsistence pig and poultry production accounts for about two-thirds. Broiler production dominates the commercial sphere, followed by beef, eggs, crocodile skins and pork. Pigs play an important economic and cultural role in the village, particularly in the highlands, providing wealth, status and protein.

It is estimated that about one third of land has forestry production potential, but 70% of that area is still unlocated. Although most forests are owned by customary owners and clans, the Government issues logging licenses to private operators.

Major Challenges and Constraints

Major challenges facing PNG in increasing domestic food production and improving food security are decreasing/insecure world market prices for the major export crops (cocoa, coffee, rubber, palm oil), increasing demand for food imports (cereals, beef, mutton), environmental degradation (deforestation, soil erosion), and marginalization of the rural poor. The Government has identified a number of key constraints to overcoming these challenges:

- low productivity and production of agriculture crops, closely related to low farmer commitment;
- overvalued exchange rate reduces international competitiveness on the world market and requires government subsidies to keep production economically viable, to maintain employment and farm household incomes;
- unstable yields as a consequence of increasing soil erosion, declining soil fertility, increasing disease and pest pressure;

- low and declining share of national government budget to the Department of Agriculture and Livestock, from 9.3% in 1985 to approximately 2.0% in 1994;
- poor public service terms and conditions are disincentives to retaining high quality and experienced professional staff in rural areas;
- weak linkages between farmers, extension and research;
- poor transportation and infrastructure system increases production and transport costs, hinders market access and dissemination of new technology and market information;
- lawlessness in rural areas and existing land tenure system prevents villagers from working gardens and also increases costs particularly for plantations, buyers and processors; and
- culturally-related constraints slow the establishment of farmer co-operatives, and are the major source of land disputes.

Strategic Options

Consistent with the goals and commitments of the World Food Summit, PNG intends to pursue a dual track approach, which offers the best option for fostering agricultural development. Such an approach requires: creating a positive environment for increased production on the cash (tree) plantations; and addressing the needs of the smallholder sector, which is still the backbone of PNG agriculture. The first requires improvement of macro-economic policies, reforms, trade interventions and infrastructure. The latter requires a systems approach for upgrading agricultural services, especially for an improved and more adequate research and extension. Based on participatory analyses of existing farming systems in the different agro-ecological zones, constraints, potentials, options and related risks should be identified and taken as the basis for recommendations towards sustainable agricultural development and resource management.

C. Project Interventions: Income Generation Activities

I. Development of Domestic Rice Production

The project will assist in developing a smallholder rice production in order to encourage local food production in support of the National Food Security Policy and ultimately reducing rice imports.

The Japanese Government through JICA has been providing support in the areas of technical assistance, equipment and funding for smallholder rice production. Recently, JICA in collaboration with local consultants have carried out a consultancy work on the study of smallholder rice production in five model provinces. The Chinese Government through Taiwan has being carrying out variety and production trials in the country in support of the idea of local rice production.

In consultation with farmer leaders, youth, women, institutions, community leaders, NGOs and Community Based Organizations (CBOs), the project is geared towards addressing food insecurity at the farm household level, create employment opportunities, income

generation and improve nutritional status. At the national level the project will contributes to GDP and reduces dependency on imports.

- Increased local rice production
- Farm Machinery made available for milling
- Trainings conducted

II. Development of a Fruit Tree Industry

The tree Fruit industry in PNG is relatively untapped in many cases. PNG has fruits like mango; paw paw, citrus, banana, and nuts like cashew and macadamia nut that are yet to be vigorously promoted and developed in both intensified and diversified systems of small holder based farming. There is substantial market overseas for some of these nuts.

This project will specifically develop nurseries, extension material and training programmes for farmers in citrus, cashew and macadamia nuts. The project will also look at ways to develop export markets

DAL currently maintains the only citrus germplasm collection in the country but without an effective nursery programme. The citrus nursery is in a run down state.

SAMOA

Capital:	Apia
Land Area (km^2)	2,934
Sea Area/EEZ (km^2)	120,000
Islands (No.)	9 (4 are inhabited)
Population (No.)	169,200
Annual Growth (%)	0.6
Density (inhabitants/km^2)	58
Rural Population (% of total population)	79
GDP (US$ million)	175.9 (1996)
Agricultural GDP (% of total GDP)	19
GDP per caput (US$)	1,066 (1996)
Currency:	Tala

A. General

Samoa consists of two dormant volcanic islands together with a few smaller adjacent islands, whose total land area is just below 3,000 km^2. Barrier reefs enclosing narrow lagoons encircle much of the coastline except for the north coast of Upolu, the main island, where there is an extensive shelf area which extends up to about 20 km offshore. The country is vulnerable to devastating storms.

Agriculture employs two-thirds of the labour force, and furnishes 90% of exports, featuring coconut cream, coconut oil, and copra, lately also fish. The manufacturing sector mainly processes agricultural products. Tourism is an expanding sector, accounting for 15% of GDP; about 85,000 tourists visited the islands in 2000.

B. The Agricultural Sector

Agriculture, forestry and fishing generated about 19% of GDP in 1998. The principal cash crops are coconut (which, in its various form, accounted for 54% of domestic export earnings in 1997) and taro (also the country's primary staple food). Sales of taro provided 58% of all domestic earnings in 1993, but an outbreak of taro leaf blight devastated the crop in 1994 and reduced exports to almost nil in that year and subsequently. A campaign to revive the taro industry was launched in mid-2000. Breadfruit, yams, maize, passion fruit and mangoes are cultivated as food crops. Pigs, cattle, poultry and goats are raised, mainly for local consumption.

Samoa's forest area comprises almost 40% of the total land area. Substantial areas are under coconut, and smaller areas of mangroves are also present. The export of unprocessed logs has been banned. The country produces sawnwood for its domestic market. Small quantities of timber are also exported.

There are no freshwater bodies of any significance and thus no important inland fisheries, although a number of aquaculture projects are under way. Marine fisheries are predominant, but due to the proximity of neighbouring countries Samoa's EEZ does not extend to 200 nautical miles offshore in any direction, and at 120,000 km^2 the EEZ area is the smallest in the Pacific Islands region.

Strategic Options, Opportunities and Constraints. The most challenging food security issues for Samoa towards 2010 are sustaining domestic food production levels in line with food demands (import substitution) and market potentials, increasing the productivity and returns to subsistence and commercial agriculture (diversification and intensification), the improvement of the marketing structure, the rising volume and prices of poor quality and nutritionally inferior food imports, and increasingly, the existence of environmental degradation associated with poor land management practices (deforestation, soil and water degradation, and encroachment onto marginal uplands and ecologically vulnerable marine ecosystems). These resource management issues involve many Government agencies, private companies and communities, and could be addressed by implementing an integrated approach to land and natural resource management.

The Government has identified the following key constraints in the agriculture sector (i) absence of a coherent national agricultural and sub-sectoral policy and strategy; (ii) inadequate resource allocation; (iii) institutional constraints in agricultural governance (weak technology, statistics, information and management systems); (iv) direct Government interventions in agricultural trade and competition with private sector; (v) regulatory barriers to private sector participation and investment; (vi) lack of formal security of tenure arrangements on customary lands; (vii) weak land use planning capability and lack of an enabling institutional structure that promotes an integrated approach to land and natural resources management; (viii) limited participation (and interest) by resource owners/users in policy and decision making processes; (ix) inadequate levels of human resource development; (x) under-development and under-supported informal sector opportunities; (xi) low levels of agricultural product and market diversification and investment in agri-business support systems (post-harvest technology, agro-processing, information); (xii) slow growth and progress of finance markets (rural credit and savings mobilisation); and (xiii) poor market information dissemination.

There has also developed a tendency to downplay the significance of those constraints over which the country has really no control, such as that relative geographic isolation, heavy costs of shipping and transport, limited internal market, lack of all forms of resources except some limited fishing, land and forests and acute shortages of trained manpower. Migration may have aggravated the manpower shortage but it has not caused it.

In approaching 2010, a diverse, semi-subsistence village agriculture is key to maintaining equitable livelihood security. Scope exists for raising the level of productive efficiency of the traditional farming system and in adopting innovative food production technologies (e.g. agro-forestry) that are efficient and sustainable ecologically, and which would not sacrifice household food security. Policy reforms to boost commercial agricultural development should focus on the diversification of the agricultural base through private sector initiatives, on the development of processed products and on the diversification of markets.

Food security, nutrition and poverty alleviation targets for the Year 2010 are to eliminate severe protein-energy malnutrition and consequent health problems such as diabetes, hypertension, obesity and heart disease or even infant and maternal mortality rates

The national priority for forestry is a long-term effort towards reforestation through community and plantation forestry. Conservation farming and agro-forestry and watershed rehabilitation programmes are also high priorities. The first commercial sawlog production from this resource is not expected before 2006.

Samoa has a good potential growth rate that would triple its level of beef production by 2010. The country has also a significant potential for milk production particularly in the upland areas.

Because of their role in providing high-quality protein for local consumption, subsistence fisheries can be regarded as equally challenging. Although increasing the production of export fish (particularly tuna) may be a desirable and realistic goal, a concurrent and more crucial goal must be to prevent a further decline in the near-shore fisheries by encouraging coastal villages to develop their own conservation and fisheries management plans.

C. Project Interventions: Income Generation Activities

I. Chicken Production in a Permaculture Farming System

Traditional free-range, backyard chicken production results in heavy losses (eaten by dogs and pigs) and low production of eggs and chicken meat. Rural communities are spending increasing amounts of money on low quality, imported food products (mutton flaps, turkey tails, etc). The reduction in import taxes, as a result of Samoa's tariff reform programme in preparation for the WTO accession, has led to a huge increase in imported food products. Many of these have low nutritional value and pose health risks to Samoans who are increasing their consumption of high sugar, high fat foods.

The aim of this project is to encourage rural communities to refocus on producing traditional foods. Raising chickens with a permaculture farming system is one way of doing this. It is also anticipated that this will be an organic production system and the resulting surplus products for sale will achieve higher prices from health conscious consumers, and from the popular backyard/free-range chicken flavour most sought for by consumers.

Design of Units will focus on utilisation of locally available materials with very little procurement of inputs where possible.

Local Contribution include: personnel for research units, inclusive of local materials used; land site for research unit activities; maintenance of research site after 2 years; sustainable costs of evaluation, operation, planting material nursery and labour; and advisory services.

Success Indicators

- More efficient production with fenced in poultry, less egg and chick loss to preying dogs and pigs, allowing for increase in output, nutrition and income;

- Ease in duplication by low income families with the maximum use of locally available resources;
- Increase rural employment and income generation;
- Expected market response to fresh high quality, organic poultry products and can be expanded to export markets in the future; and
- Import substitution to higher quality local meat products;

II. Agricultural Produce Processing – Value Adding

Samoa is prone to natural disasters (cyclones 1990 and 1991, Taro Leaf Blight and Giant African Snail) all of which have drastic effects on food security. Not only this, its accession to the WTO and the trade reforms puts it in a more competitive situation with imports, and the lower income rural communities are most affected. Stringent sanitary and phyto-sanitary (SPS) measures by importing countries, has made exports from Samoa more difficult as well. It is thus essential that Samoa seriously look at down stream processing of its agricultural produce to ensure: Storage capacity of processed food stuff for longer storage and access to food ; ability to prolong shelf life for goods that ensures marketable commodities to the consumers and in turn ensure disposal of agricultural goods for the rural farming communities; ability to sustain export potential of agricultural commodities for farm produce disposal and SPS measures under the WTO rules; and enable a competitive edge for farm produce marketing and ensure income-earning capacity to the rural farming communities.

The project proposes simple, yet codex compliant, agro-processing equipment that can be readily made available to small business enterprises. The priority agricultural commodities are:

- Papaya (HTFA facility for exports expects at least 35% rejects that could pose some constraints to small farmers for disposal) – Processing into pulp – income generation and nutrition;
- Breadfruit (also HTFA sanitary facility for export) but also for storage life, a good source for food security and income generation.
- Perfume extraction – Samoa has a lot of colourful flowers that can be extracted for perfume use, a possible component involving Women in Business.
- Forestry – Centre for Value Added Timber (rubber tree wood, coconut wood, etc).
- Bee keeping – processing into bottled honey, wax processing, queen bee breeding.

A good example of the success of such an approach is the processing of coconut oil into cosmetics and cooking oil by Small Businesses under the Women in Business programs.

Success Indicators

- Ensure disposal of HTFA commodity rejects, eliminating excess loss especially to small farmers;
- Ensure market disposal and income generation;
- Ensure employment in the rural communities;
- Enable small farmer (and foresters) participation in export markets; and
- Reduce food insecurity within the rural communities

SOLOMON ISLANDS

Capital:	Honiara
Land Area (km^2)	28,000
Sea Area/EEZ (million km^2)	1.6
Islands (No.)	6 large and many small islands
Population (No.)	447,900 (2000)
Annual Growth (%)	3.4
Density (inhabitants/km^2)	16
Rural Population (% of total population)	87
GDP (US$ million)	286.4 (1993)
Agricultural GDP (% of total GDP)	40
GDP per caput (US$)	882 (1993)
Currency:	Solomon Islands Dollar

A. General

More than 380,000 people live in more than 5,000 villages, seven townships and one town (the capital, Honiara) over a land area of 27,000 km^2 scattered over six major islands and many smaller ones. The main islands are mountainous and covered with tropical rain forest. There are extensive reefs and lagoons. The climate is equatorial but tempered by the surrounding ocean. The mean annual temperature in the capital Honiara is 27^{o}C. There are no clearly defined seasons but between November and April, the weather is more uncertain and cyclones form, which can cause extensive damage, especially to food crops. Raifall is often heavy reaching 8,000 mm per year, but generally averaging 3,000-3,500 mm.

There are three main ethnic groups, the Melanesians, accounting for about 94% of the total population, and the Polynesians and Micronesians accounting for 5%. At least 87 vernacular languages are spoken in the various islands. About 85 per cent of the population live in the rural areas, where the lifestyle is still based on subsistence food production and fishing. The essence of social identity is the relationship with one's relatives in the extended family or "won-tok" (literally one-talk).

The economy of the Solomon Islands is characterised by a dualism, which originates from the country's past. There is a large under-capitalised rural sector, linked only by smallholder production of copra and cocoa to the commercial export sector, where fishing and logging account to 80% of the economic output. The economic growth averaged 4 per cent annually over the past decade, based on increased outputs from fisheries, forestry and agriculture, financed almost entirely by foreign capital.

Adverse weather conditions and cyclones in addition to world price fluctuations make primary sector export commodities such as copra, cocoa, palm oil, wood products and fish highly vulnerable. Several factors including poor transportation, the narrow economic base, and limited physical infrastructure contribute to the difficulty of developing a self-reliant economy. The country is still mainly a primary producer, with little processing capability. The shortage of trained human resources is also a fundamental constraint.

There are disparities in access to resources, services, income and education. The areas with the greatest resources attract the largest share of national investment, and also the largest share of migrants. Sound regional and sectoral allocation and resource management are required to prevent the deepening of such disparities.

There are clear indications that poverty has been exacerbated by the long running law and order problems, the on-going financial crisis, the contraction of economic activities and rising unemployment, compounded by high population rates. Almost all development work has ceased because of the on-going civil disturbance.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture and the Economy. The primary sector accounts for 42% of GDP in 1995 (agriculture, 18%; forestry, 11%; and fisheries, 13%) and 97% of total exports. Agriculture consists of three sub-sectors (a) subsistence small holder farming sub-sector; (b) large-scale commercial sub-sector consisting of corporate agri-business companies which operate on alienated and registered land; and (c) the intermediate communal sub-sector which comprises communally-owned agricultural enterprises. Most of the population (85%) live in rural areas, and are supported by subsistence agriculture. The subsistence smallholders farming include growing root crops, indigenous vegetables and tropical fruits, raising livestock and inshore fishing.

The livestock sub-sector consists of local inbred pigs and chickens which are integral part of traditional agricultural systems as well as commercial ventures involving cattle raising, broilers and layers as well as hogs which have developed with varied success, but on a relatively small to medium scale. Given the robust demand for both fresh and processed meat, potential for import substitution is an important issue for the sub-sector.

Close to 90% of the total land area are classified as forest and woodland (2.45 million hectares) but only 254,000 hectares are considered as commercially exploitable because of poor accessibility. Recent natural forest inventory preliminarily indicates the availability of 13 million cubic meters (m^3) of standing commercial timber, which at current unsustainable levels, improving logging practices and pursuing reforestation are critical policy issues.

Fish is a major component of the protein diet of the people of Solomon Islands with per capita consumption of around 36 kilograms per year in 1995. About 17% of all households integrated into the cash economy sell coastal fishery products. The value of subsistence fisheries was equivalent to almost US$16 million or 60% of the value of canned fish exports (US$26 million in 1995). The commercial fisheries sector is dominated by tuna fishing (both onshore and foreign-owned fishing operations). Sustainable tuna yield is estimated at 120,000 metric tons or almost three times the current level of exportation (42,682 tonnes in 1995). More than SBD 16 million are generated annually from fishing licence fees and transhipment fees.

Land Use, Farming Systems and Institutions. The main cash cropping activities can be divided into plantation and smallholder estates. Plantation estates are either owned by overseas companies, community groups, or individual entrepreneurs, producing a wide range of cash crops, including copra, cocoa, fruits and vegetables. In most farming communities the major staples are sweet potato, cassava, yams, dry land taro, and a wide range of fruits and leafy vegetables. The farming system that is commonly practised in food production is the

swidden system. The fallow period that is an important component of this system has been markedly reduced, leading to a gradual decline in soil fertility. As in many Pacific Island countries, household food production has become of secondary importance to commercial food production. Inevitably with cash crops having a higher priority, health (including nutrition) and living standards are affected.

At least 95% of land is communally owned. Land is considered as perpetual source of sustenance rather than a tradable commodity or resource. A large portion of the customary land resources is unutilised because of land tenure problems. Land disputes over ownership of customary land, rather than land availability, are an obstacle to the development of rural areas in Solomon Islands. In some areas there has been a general shift in cash cropping activities from traditional cash crops, notably tubers like taro and sweet potatoes to traditional fruits and vegetables for the urban market.

The livestock industry in the country is very limited and presently a proportion of the beef supply is imported from Vanuatu. There is a small animal industry in the rural areas, with farming of pigs, poultry, goats and bees for honey. Some households raise chickens and pigs as a household food source or for sale within their home garden system.

Irrigation is undeveloped in Solomon Islands. Irrigation development is now being pursued as more intensive commercial crop production becomes necessary for food security and export purposes. A pilot project to reintroduce rice farming and irrigated food and cash crops is underway. Irrigation and farm mechanisation technology may gradually evolve through investment in adaptive research and in response to market opportunities.

Major Challenges and Constraints. A major dilemma facing the nation at the present time is the law and order problems besetting the whole country and the yet unclear picture of when these problems may end. Under those conditions, only limited assistance can be planned. Increasing the productivity and income of traditional subsistence and commercial smallholder, communal and corporate plantation agriculture and improving its potentials for diversification and modernisation within the framework of population and unemployment pressures, wanton destruction of forest resources, land tenure insecurity and vulnerability to disasters, constitute the most important challenges to the development of rural economy of Solomon Islands. By 2010, Solomon Islands' population will increase to 563,000 people (medium variant estimates) with a potential labour force of more than 255, 200 people. Unless the Government succeeds in implementing responsive education, health and population policies, the pressure on food security and sustainable livelihood will rest on the agricultural sector. Furthermore, deforestation, watershed mismanagement, unsuitable agricultural practices, soil degradation, accelerated commercial development and encroachment on ecologically vulnerable areas, all need to be addressed.

The Government has identified a number of key constraints and challenges including:

- Shortage of experienced and qualified staff at all levels of Government and private sector.
- Disputes over the ownership of customary lands coupled with lack of security of tenure on, and non-commercialisation of, customary lands.

- Lack of integrated and holistic food security, health and nutrition policy and action plans.

- Inadequate resource allocation to the primary sector to fulfil its strategic role as provider of food, fodder and fuel, employment, foreign exchange and suitable environment for human life. The share of public resources to the MAF has been limited to 2-3% of the national budget during the last 10 years.

- Direct Government involvement, interventions and competition with private sector in agricultural trade (factor and product market) as well as constraining regulatory barriers to private sector participation and investment, resulting in waning investors' confidence in the economy.

- Lack of comprehensive water resources development and irrigation policy coupled with vulnerability of fresh water resources to wasteful use, unsustainable farming practices, degradation and pollution.

- Lack of sustainable management of natural resources (forest, fisheries) and land use planning policy covering all types of lands.

- Low productivity, non-remunerative employment and limited diversification of subsistence production system resulting in limited dynamism and intensification of the agricultural sector.

- Limited product and market diversification and investments in crops, livestock, fisheries and forestry production, as well as in agro-industries and agribusiness sectors (transport, post-harvest, processing, communications).

- Slow development in the rural financial market particularly in improving access to rural credit, savings mobilisation and development of new financial instruments and capital markets to encourage agricultural and agro-industrial investments.

- Lack of sound agro-industrial policies and inadequate advisory services to entrepreneurs in the food industry sector.

- Limited market and costly transport infrastructures due to widely dispersed population in outer islands.

Strategic Options. The search for food security and sustainable modern agriculture in Solomon Islands depends on responsive policies, correct price signals, and harmonious relationship amongst the Government, the private sector and the farming and fishing communities. A policy-led and freer market strategy will focus on the removal of policy constraints, uncertainties and inconsistencies and market failures as well, so that economic reforms and sustainable agricultural growth can occur and restore investors' confidence. Quick yielding actions are essential for addressing food insecurity and nutrition concerns (particularly the serious income inequality and unemployment) and laying the foundation for sustained long term growth and development of the agricultural sector.

The agriculture sector of Solomon Islands requires an investor-friendly policy environment, public sector investment, (particularly in technology, infrastructure and information systems) and a field-action programme aimed at mobilising existing institutions and resources towards more efficient delivery of technology and support services to the farming, forestry and fishery sectors. The SIG needs to intensify its collective efforts and partnership with the private sector towards products (processed woods, fish and foods, potatoes, fruits, traditional and organic foods) and market diversification (e.g. seasonal comparative advantage and ethnic markets) in ways that will be competitive with the open and deregulated markets of Australia, New Zealand, Fiji, New Caledonia and other Pacific island countries, North America and dynamic Asian economies.

SIG should continue to implement sustainable policies for generating higher returns from their natural capital in fishery and forestry resources. Both sub-sectors offer the greatest potential for sustainable growth and diversification. The code of conduct for logging will ensure that logging and reforestation practices comply with international standards. Sustainable and community-based fishery resources management and the rationalisation of the tuna fishing industry will boost its contribution to food security, employment and sustainable growth of the economy.

As a small country, Solomon Islands suffers from the vagaries of severe price fluctuations, generally long term structural decline in commodity prices and global competition for its principal export commodities (copra, cocoa, palm oil and kernel). The country requires flexible coping mechanisms, namely: (a) dramatically improve the levels of production and marketing efficiency to achieve comparative advantage in agriculture and ensure high profitability and returns to labour; (b) develop value adding upstream processing of its export crops (e.g. coconut oil and cream, chocolate and confectioneries for cocoa, processed wood, fish and food products); and (c) further improve supporting infrastructure and diversity both the production and marketing systems to provide farmers with greater flexibility to respond to price signals. In the pursuit of such strategies, the SIG has to address the wide disparities in levels of agricultural and infrastructure development, in market access, investment, income and employment opportunities between Honiara and the outer islands of the country. A food security and nutritional surveillance and information system, an updated legislation on food quality and safety, and social safety nets for food insecure groups (feeding and employment schemes) are also essential to effectively address food insecurity and malnutrition issues in Solomon Islands.

The development strategy focuses on the intensification and diversification of the subsistence customary production system with special emphasis on increasing the levels of productivity and returns to labour. The communal, plantation and commercial agricultural sector will be supported through liberalisation of trade policies, stringent food quality and safety measures, development or creation of markets and modernisation of technology, post-harvest, sanitary and phyto-sanitary measures and processing systems. The growth in the agricultural sector will result from favourable macroeconomic fundamentals and sectoral policies, and producers' response to price signals for specific crops, livestock (particularly cattle, pigs and poultry), forestry or fishery commodity. The country can develop relative comparative advantage based on market signals and new niche market (seasonal or ethnic) opportunities which will dictate shifts in output composition, area expansion and demand for productivity improvements.

Public investments are needed in rural infrastructure (roads, small ports, transport, communications, market facilities), technology development and transfer schemes. This calls for strengthening the research, extension and farmers' training and other support (e.g. access to investment information, credit, market). Public investment is also needed to improve the capacity of MAF in policy analysis, statistics and computerised databases, programme and project formulation, benefit/cost analysis, input and output monitoring and evaluations. Based on bottom-up planning and participatory analysis of existing subsistence and commercially oriented farming systems, specific constraints, opportunities, options and related risks and adversities will be identified and considered in the formulation of sustainable food security, agricultural development and natural resources management.

C. Project Interventions: Income Generation Activities

There are law and order problems existing in the country although it has been recently reported that the rural areas are peaceful. Given the volatility of the situation, the Project Co-ordinator (in liaison with the RPSC) needs to periodically gauge the situation together with the local Ministry of Agriculture and plan in detail implementation / holding or termination of country activities.

I. Development of Food Processing

There is very little food processing in the country at the moment. Hence food crops tend to be wasted or must be consumed immediately to avoid going bad. Since most of the food crops grown are perishable or have short storage life in their raw or cooked forms, when there is a natural calamity, shortage of food is usually experienced. By processing root crops and fruits that can be stored for use in times of disasters this will help alleviate people going hungry. Fruits are often going wasted and if they can be made into juices and jams will conserve a lot of foreign exchange and consume over long period. This can also encourage exports and create employment.

The project will promote and encourage food processing among primary producers of food crops and private sector in the country by setting up food a processing unit that will facilitate trials and training on various aspects of food processing in the country.

Success Indicators

- Availability of planting stock to farmers
- Increased production of good quality fruits for local consumption and export
- Increased income earning capacity of farmers
- Creation of employment both at the rural and urban areas
- Foreign exchange earned through exports
- Improved nutrition of population through increased consumption of fruits

II. Development of Seed Gardens

Since the destruction of the National Seed Garden during the recent ethnic tension, the country is yet to have a replacement. However, lack of funds within the Government system has prevented the re-establishment of the old seed garden. While a number of smaller seed gardens have been established on Rural Training Centres and Field experiment Stations in the Provinces, these have not fully developed and are far from being able to meet the needs of farmers in those Provinces.

Provincial seed gardens help alleviate logistic difficulties often encounter in the movement of planting materials in a country made up of many islands like the Solomon Islands. Prior to the ethnic tension nearly all planting-material produced through propagation techniques have to come from the National Seed Garden.

With rehabilitation, development and expansion of agricultural industries (cocoa, coconuts, fruit trees, vanilla, onion etc.), that might require importation of improved planting materials, the need to re-establish the National Seed Garden is imminent. Obviously material such as cocoa or fruit trees that are imported from overseas, apart from having to fulfil

Quarantine requirements, are then field-tested and multiplied before they are distributed to growers. However any further multiplications of panting materials could then be carried out at Provincial Seed Gardens. Thus it is equally important that 2 or 3 other seed gardens should be established at Provincial level.

Soil and Climatic conditions of the National Seed Garden would be far from representing those of the other islands in the country. For this reason, any planting materials that come out of the National Seed Garden may not necessarily do as well under condition prevalent in other Provinces and they must be field–tested under these various environment conditions.

The seed gardens to be established will ensure post quarantine observations, field-testing and rapid multiplication of planting materials. They will also help cut costs of plant material movement between islands as well as ensuring proper screening and selection of planting materials based on soil types and environment factors. Therefore the aim and objective of this project is to set up seed gardens both at National and Provincial level in order to facilitate importation, quarantine, multiplication and distribution to growers throughout the country.

Success Indicators

- Production and availability of improved planting materials to growers;
- Wider distribution of planting materials via Provincial Seed Gardens;
- Support for Post-Quarantine when necessary;
- Facility for field-testing of exotic plant materials
- Employment of local people;
- Support for Extension Services in Provinces.

III. Development of Pineapple Production and Export

Pineapple is by far the only fruit commodity that is not affected by insect pests in Solomon Islands. It is therefore possible that Solomon Islands can export pineapple if other Quarantine requirements (especially those of importing country) can be met. This project aims at ensuring that the commodity is produced in an orderly fashion, meet quality requirements and for the purpose of export, meet Quarantine requirements.

Local contributions include land for building, storage of material, supplies and equipment, provision of raw material, and maintenance costs.

Success Indicators

- Improved food security

- Increased employment and income generation

- Conserve foreign exchange through import substitution

TONGA

Capital:	Nuku'alofa
Land Area (km^2)	688
Sea Area/EEZ (km^2)	700,000
Islands (No.)	Some 150, about 35 are inhabited
Population (No.)	100,200
Annual Growth (%)	0.6
Density (inhabitants/km^2)	154
Rural Population (% of total population)	64
GDP (US$ million)	173.5 (1997)
Agricultural GDP (% of total GDP)	24
GDP per caput (US$)	1,774 (1997)
Currency:	Pa'anga

A. General

Tonga is an archipelagic nation comprising some 150 islands, of which about 35 are inhabited, as well as many smaller islets and reefs. The islands, whose collective land area is close to 700 km^2, are distributed in three main groups - Tongatapu (location of the capital and administrative centre, Nuku'alofa) and neighbouring islands in the south, the Ha'apai group located centrally, and the Vava'u group to the north. Other islands extend the archipelago further north and south beyond the main groups.

Tonga has a small, open economy with a narrow export base in agricultural goods, which contributes 30% to GDP. Squash, coconuts, banana, and vanilla beans are the main crops, and agricultural exports make up two-thirds of total exports. The country imports a high proportion of its food. The industrial sector accounts for about 10% of GDP. Tourism is the primary source of foreign currency earnings.

B. The Agricultural Sector

Agriculture in the Economy. Agriculture remains the cornerstone of the Tongan economy, accounting for between 30 per cent and 40 per cent of employment and output. Its contribution to GDP declined from around one-half in the mid-1970s to one-third in the late 1980s, but it appears to have regained some ground in recent years. The average annual growth rate in agricultural output between 1989/90 and 1993/94 was an impressive 7 per cent. The sector continues to account for the bulk of total exports.

Land Use, Farming Systems and Institutions. The total area of agricultural land is 42 000 ha, of which around 42 per cent is currently farmed. Roughly one-half is cropped and one-half is fallowed, indicating that the length of fallow period has shortened considerably in recent times. The national average farm size is 1.6 ha, but farm size land tends to increase with commercialisation (it is 2 ha on Tongatapu).

The land tenure system has gradually evolved to accommodate commercial agriculture. It is based on tax allotments, which are normally either 8.25 acres or 4 acres, registered to a Tongan male citizen over the age of 18 years. Originally, all adult males received a tax allotment, but limits on the amount of available land have made it impossible for all adult males to own land. While no overt signs currently exist of land shortages for agricultural pursuits, this situation could emerge before 2010.

The growth of informal leasing arrangements has led to the emergence of a vigorous land rental market. This evolution of a land market may have contributed significantly to the reasonable level of prosperity that currently exists in commercial agriculture. This commercialisation has proceeded furthest on Tongatapu and 'Eua.

Tonga has limited forestry resources, with only about 4000 hectares of natural forests. There is, however, considerable potential for agro-forestry development, with 48 000 hectares of potential agro-forestry land which at present is mainly planted to coconuts. The natural forests are chiefly on uninhabited islands and on slopes that are too steep for cultivation. There is a plan to expand pine forestry plantations by 80 hectares each year from their currently small area of less than 700 hectares. Most expansion is to take place in 'Eua.

Tonga has a large exclusive economic zone for exploitation of marine resources of around 720 000 km^2. Substantial pelagic sea resources have scarcely been exploited. On the other hand, coastal fishery resources, which have provided the bulk of protein sources for the population, are close to being fully exploited and there is concern about their degradation from overfishing. This could have deleterious consequences for diets over the next couple of decades unless action is taken.

Major Challenges and Constraints. The agricultural history of Tonga provides interesting examples of successes and failures in agricultural development which highlight strengths and opportunities in the agricultural sector as well as a number of constraints.

Favourable land resources and climate, absence of many serious pests and diseases and the characteristics of 'islandness' and smallness present producers and marketers in Tonga with ample opportunity for export-led agricultural development. While a number of successful agricultural export industries have emerged, others have waxed and waned, providing lessons about what works and does not work.

Agricultural production methods are well understood and practised in Tonga, providing a basis of generally sound indigenous technical knowledge to grow a variety of crops that offer a high level of food security. The predominant semi-subsistence farming system is flexible, offers productive employment, and is resilient in the event of unfavourable climatic conditions or product price movements. It has also been a springboard for the development of commercial agriculture.

Tonga possesses a generally healthy well educated population, which is a strength for agricultural development. Two features of the education system are the high participation rates of girls at all levels and an emphasis on Tongan culture. This should be a fertile ground for improving awareness of good nutrition practice. Two concerns exist about current education levels. First, there is insufficient agricultural training to meet the specific needs of existing and future farmers. Second, out-migration has brought about a 'brain drain' which is likely to leave institutions servicing agriculture without enough skilled and experienced people.

The land tenure system has traditionally given secure access to land for almost everyone, enabling Tonga to avoid the emergence of a class of landless poor common in many developing countries. Also, the social system in rural villages provides a safety net for those who find it difficult to fend for themselves. Tonga has in place flexible arrangements for leasing land by South Pacific standards.

Access by farmers to input and product markets is quite good on Tongatapu and reasonable in 'Eua and Vava'u. The small size of other inhabited islands provides most farmers with access to the local wharf, but they are isolated by sea from the main markets and points of export. Infrastructure development and improved services could therefore help expand the production base for agriculture.

Economic growth is expanding the domestic market for food, especially for items with relatively high income elasticities such as fruits, vegetables, and animal and fish products. The Tongan expatriate population provides a target consumer group for market differentiation strategies that further develop the export of traditional and new high-value products. An expansion of tourism could also increase domestic food sales to the tourist sector.

Many of the constraints of Tongan agriculture are not of its own making. The small domestic economy means a small domestic market with volatile prices, limited opportunities to diversify production efficiently, and diseconomies of small scale in production, processing and marketing. Out-migration causes human resource shortages. High wage rates by South Pacific standards reduce the comparative advantage producers have in a range of export markets. The balance of payments is maintained largely by aid and remittances which have kept the domestic currency relatively strong to the detriment of agricultural export industries.

Fragmentation of land mass, remoteness from export markets and imported input supplies, and limited and irregular freight services make international and internal transport costly and uncertain and rural infrastructure expensive to construct and maintain given the small economic base.

Imbalances in economic growth and access to infrastructure and social services are growing between rural and urban areas, and between rural regions. Rural-urban and inter-regional migration patterns are accentuating these imbalances. Furthermore, the commercialisation of agriculture and limits on further provision of land resources to all households are likely to put increasing pressure on the traditional social system to provide a safety net for the less well off members of society.

A reliance on export-led agricultural development makes Tongan agriculture susceptible to export market risks that are difficult to manage. These risks are magnified by the relatively narrow range of possible destinations for agricultural exports and ubiquitous threats to niche markets. At present, there is an excessive reliance on a single niche market for squash in Japan. Efforts to open up export opportunities in other countries for squash and other products appear to have been accompanied by insufficient thought about the relative roles of the government and the private sector.

Tonga’s inherent advantages in high-value exporting are by no means secure. Failure to comply with phytosanitary requirements could restrict access to export markets. Lapses in quarantine procedures could result in the introduction of serious pests and diseases. Inadequate

maintenance and quality control practices in production and marketing of export crops could also damage or destroy export industries and make new export industry initiatives short-lived.

Strategic Options. The preferred strategic approach is two-pronged: (1) to build on the sector's strength in efficient production of staple foods; and (2) to continue development of high-value niche export markets. Improving production of staple foods will require support in areas where only the government can play the major role, such as rural infrastructure.

The key to a successful partnership between government and the private sector in commercialising agriculture in a small economy is in deciding who does what and establishing the ground rules for government involvement. In working towards this goal, it is important to make a distinction between competitive advantage and comparative advantage. It should be left to private firms to decide in what areas and how they can achieve a competitive advantage. The government, on the other hand, has a crucial role in establishing an economic and technical environment conducive to exploiting comparative advantages by the provision of public goods such as the funding of research (not necessarily undertaken by government) and transport and communications infrastructure.

The Tongan government is now committed to an export-led growth strategy with a strong emphasis on high-value agriculture as part of this strategy. It sees its role as one of accelerating private sector development, rationalising the civil service and restructuring government ministries and departments to support expansion of the private sector, and streamlining administrative procedures. Yet, net direct foreign investment has remained at low levels despite the government putting in place a number of inducements for foreign investment. This is likely to remain the situation in the agricultural sector.

Given the strength and flexibility of semi-subsistence systems, the government needs to be cautious about encouraging a transition towards fully commercial operations based on just one or two commodities sold into niche export markets. The collapse of one market or rapid decline in production due to a pest or disease outbreak could mean considerable hardship for the people involved in the industry. The balance between commercial and subsistence production, and mix of commodities within each of these two production areas, are strategic decisions best made by participants in the agricultural sector.

C. Project Interventions: Income Generation Activities

I. Smallholder Farming Systems Development

Recent farm level studies have identified that Tongan smallholder farmers characterized with limited land and capital resources are experiencing lower agricultural productivity compared to more progressive farmers. This is frequently caused by technological constraints; poor farm management, unreliable rainfall and insufficient water for crop and livestock production.

Agriculture in Tonga is rain-dependent and is susceptible to long periods of drought and these have caused severe impact on plant growth results in significant reductions in the level of both the export and domestic agricultural production. One of the main contributing factors identified for lower yields in squash, fruits and vegetables is the limited bee population for pollination.

In light of the above constraints and importance given by the Government to increasing agricultural productivity, the Ministry of Agriculture, Forestry, and Food, the Ministry has identified the urgent need for improved technologies and agricultural practices through irrigation, and increase local honeybee population for pollination purposes as the major strategies whereby agricultural productivity can be improved and potentials for increased exports of agricultural produce be fully realized. This will have tremendous increase of crop yields in addition to honey as food for the rural population.

The main objective of the project is to achieve sustainable productivity of smallholder farms through the adoption of improved farm technologies to ensure sustainability of production and access for food security and commercial opportunities for crops and livestock production. There are two major components altogether in this project and those are:

(i) **Small Holder Rainwater Harvesting and Gravitational Irrigation System**. The first component is a rainwater-harvesting scheme that aims at improving agricultural productivity through effective water use. The plan is to set up a rainwater harvesting system for interested farmers, which comprises on farm road and drain, 5000-gallon collection reservoir in the ground and lined with polyethylene, mound from excavation as stand for 1000 gallon tank, water pump, piping and drip irrigation.

(ii) **Honeybee Pollination Development Project**. This component includes the training for farmers on technical aspects of in bee keeping; managing hives for pollination will result in more knowledgeable and competent clients. The project also assists the Ministry and private sector and who are interested on establishing bee hives hire as a business opportunity not only bee hives but opportunity for honey production as a potential source of income.

The local contribution includes: Local staff supervising the project, training facilities and office for project staff.

Success Indicators

- Reduced production costs;
- Increased productivity and more effective utilization of the land resources;
- reduced cost of people carrying water from town; and
- Improved nutrition and additional income to the farming families from intercrops of vegetables with vanilla.

VANUATU

Capital:	Port Vila
Land Area (km^2)	12,190
Sea Area/EEZ (km^2)	680,000
Islands (No.)	80 (67 are inhabited)
Population (No.)	199,800 (2000)
Annual Growth (%)	0.9
Density (inhabitants/km^2)	16
Rural Population (% of total population)	82
GDP (US$ million)	257.9 (1997)
Agricultural GDP (% of total GDP)	16 (1996)
GDP per caput (US$)	1,009 (1997)
Currency:	Vatu

A. General

The archipelago of Vanuatu is situated in the south-west Pacific Ocean approximately 2,300 km off the east coast of Australia, between New Caledonia, the Solomon Islands and Fiji. It is comprised of some 80 islands and islets extending over 800 km north to south. The total land mass area measures 12,190 km^2, with an exclusive marine economic zone of 680,000 km^2. The largest two islands are Espiritu Santo (4,248 km^2) and Malekula (2,053 km^2). The administrative capital and commercial centre is Port Vila, located on Efate. The majority of the islands of Vanuatu are mountainous due to their volcanic origin, and there are three active volcanoes. Based on geographical locality, the country is divided into six provinces, which are administered by local governments.

The economy is based primarily on subsistence or small-scale agriculture which provides a living for 65% of the population. Fishing, offshore financial services, and tourism, are other mainstays of the economy. Economic development is hindered by dependence on relatively few commodity exports, vulnerability to natural disasters, and long distances from main markets and between constituent islands. The most recent natural disaster, a severe earthquake in November 1999 followed by a tsunami, caused extensive damage to the northern island of Pentecote and left thousands homeless.

B. The Agricultural Sector

Agriculture in the Economy. Agriculture including forestry and fisheries, accounts for approximately 22% of GDP and 80% of total exports. Agriculture consists of two sub-sectors (a) subsistence smallholder farming which accounts for almost 10% of GDP and (b) large commercial farms and plantations (13% of GDP). Most of the population (82%), lives in rural areas, and is supported by subsistence agriculture. The subsistence smallholder farming includes growing root crops, indigenous vegetables and tropical fruits, raising livestock and inshore fishing.

The livestock sub-sector contribution to GDP is significant. The country has approximately 150,000 heads of cattle. The infrastructure (export grade abattoir, quality control and veterinary inspection system) for beef production is well established. There are five export grade meat processing facilities, 2 abattoirs and 2 canneries, with slaughter output of more than 4,000 tons in 1994, however, rural farmers still face the difficulties due to high transportation costs. Most traded beef is frozen and exported to Japan and other pacific countries (Papua New Guinea, Solomon Islands, Fiji and New Caledonia) while about 30 percent of slaughtered carcass are canned. A bilateral agreement between Vanuatu and the Melanesian Free Trade agreement is already in place. Vanuatu currently benefits from this agreement, from the point of view of the beef sector.

The fisheries sub-sector is small with substantial potential because of the country's large exclusive economic zone (EEZ) and the reefs. All types of tuna abound its coastal waters. Smallholder fishing has been subsidised for about 10 years. Commercial fishing is carried out by companies from Taiwan, Korea, United States of America, through renewable fishing leasing agreements within the 200-mile EEZ. In 1999 the total revenue of US$70,000 was collected from licenses, from about 14 Foreign Fishing vessels, which were mainly Taiwanese vessels. The Vanuatu tuna management plan was in formally release in August 2000, to provide objectives to manage the tuna resource in sustainable way.

Forestry contributes about 1% of GDP in 1999. The value of forest products exports has increased from VT252 million in 1995 to an average of VT350 million for the period of 1996 to 1999. The sector though, has faced difficulties, subsequently affecting exports. Due to pressure from conservation and environmental groups and fluctuation in the Asian crisis 1994, the Government imposed a ban on the export of round logs and reduced the number of logging companies. A National forest policy was approved by the council of ministers in 1998 and formally published by the Minister for forests in 1999 to ensure the sustainable exploitation and equitable distribution of benefits from forest resource. The forestry legislation need updating to be consistent with the New Forest policy (FAO is assisting this review).

Land Use, Farming Systems and Institutions. According to official 1989 population projections, Vanuatu has a land area of about 1,220,000 hectares (12,220 km2) with a population/land ratio of 14 persons per km^2, however with a population growth of 2.8% the envisaged scenario poses difficulties. Close to only 12% were devoted to agricultural croplands in 1993 (143,960 has) while the bulk (75%) of the land area is covered by forest and woodlands (915,000 has) and the rest to pasture (2.1% or 25,620 has) and other uses (11.2%). The average cropland per capita is almost 0.9 hectare. In Vanuatu, a large portion of the land resources is unutilised because of serious land and boundary-related disputes, associated with complicated customary land tenure problems.

Vanuatu's farming systems are a mixture of subsistence gardening (home gardens) and cash cropping. Vanuatu involvement in the agricultural cash economy has increased quite markedly since Independence (1980). Their outputs from cash enterprises and export commodities are more dominant that the purely commercial agricultural sector. Smallholders produced 80% of copra, 70% of cocoa, 20% of beef, and all kava.

The traditional food cropping system follows a slash and burn cum fallow period, which has remained virtually unchanged over centuries. Rapid population growth on some islands resulted in shorter fallow period and declining soil fertility. More intensive commercial oriented agricultural production systems for food crops will have to be developed particularly

in serving the food security needs of urban and peri-urban population which are growing at phenomenal growth of more than 5% in Luganville area and close to 8% in Port Vila. Alternative cash crops for smallholder production include pepper, vanilla, groundnuts and potatoes. A National and Provincial Land Use Plan will influence future land use patterns and natural resources management systems.

Some irrigation development may accompany more intensive commercial crop production for food security and export purposes. Irrigation and farm mechanisation technology may gradually evolve through investment in adaptive research and develop in response to market opportunities. While processing of agricultural products is still underdeveloped in Vanuatu, recent initiatives to establish a Food Processing Centre constitute nucleus pilot plant and analytical facilities on which future development work may be built.

Major participants in the agriculture and natural resources sector include the: National Planning Office which sets macroeconomic policies and resource allocation framework; Ministry of Agriculture, Quarantine, Forestry and Fisheries (MAQFF) which promulgates and enforces sub-sectoral policies; Departments of Agriculture and Rural Division (DOARD); Quarantine and Inspection Services(QOIS), Forests (DOF) and Fisheries (DOF), which provide technical assistance and advice to farmers and fisherfolks and perform regulatory and monitoring activities; plantations; logging companies; Vanuatu Commodity Marketing Board (VCMB) the sole exporter of copra, cocoa and coffee and kava; the abattoir and meat processing companies; agro-industries, traders and thousands of Ni-Vanuatu fisherfolks and smallholder producers of crops, livestock and other commodities.

Major Challenges and Constraints. The most daunting issues for Vanuatu agriculture towards 2010 are the high rates of population growth (2.8% annually) and growing urbanisation and unemployment which are creating widening income inequality and mounting pressure on national and household food security. Vulnerable groups comprise those who have limited access to resources and entitlements due to factors associated with resource degradation, gender inequality, age and physical disability, and the emerging colonies of squatter families in urban and peri-urban centres who lack the communal or social resources which are relatively available to vulnerable rural families. These problems resulted from past economic, social and infrastructure development policies that failed to recognise or build on Vanuatu's own very dynamic customary institutions that provide food security and socio-economic stability to the traditional communal family system.

The relative declines and fluctuations in overall and per caput food and agricultural production are particularly serious. Agriculture is the source of livelihood for over 80% of the population living in rural areas, and agriculture has the potential not only to supply food and cash income but as a means of employment and livelihood. Under investment in agriculture will worsen household food insecurity. The insecure land tenure systems and mounting unresolved land disputes, and natural disasters (29 cyclones in 15 years, drought and infestations) further contribute to vulnerability in food security. The instability of food production and agricultural exports are further influenced by volatile prices in both product and factor markets and the relatively low levels of agricultural productivity and returns to labour.

Increasing the productivity and income of traditional subsistence and commercial smallholder and plantation agriculture, and improving its potentials for diversification and modernisation within the framework of population and unemployment pressures, land tenure insecurity and vulnerability to disasters, constitute the most important challenges to the

development of rural economy of Vanuatu. By 2010, Vanuatu's population will increase to 268,000 people with a potential labour force of more than 126,000 people. Unless the Government succeeds in implementing responsive education, health and population policies, the pressure on food security and sustainable livelihood will rest on the agricultural sector. Furthermore, the impact of deforestation, watershed mismanagement, unsuitable agricultural practices, soil degradation, accelerated commercial development and damaging encroachment on upland, steeply sloping and near shore marine areas, ecologically vulnerable areas, lagoons and coral reefs cannot be underestimated. Political stability, vigorous investment in agriculture and GoV's commitment to policy and sectoral reforms are vital elements of success.

The Government has identified a number of key constraints to overcoming these challenges:

(a) Widespread lack of skilled Ni-Vanuatu and severe shortage of experienced and qualified staff at all levels of Government and private sector.

(b) Disputes over the ownership of customary lands coupled with lack of security of tenure on, and non-commercialisation of customary lands.

(c) Poor implementation of integrated and holistic food security, health and nutrition policy and action plans

(d) Inadequate resource allocation to the agricultural sector to fulfil its strategic role as provider of food supply, fodder and fuel, employment, foreign exchange and suitable environment for human life. The share of public resources to the MAQFF has been limited to 3-5% the national budget in during the last 10 years.

(e) Direct government involvement, interventions and competition with private sector in agricultural trade (factor and product market) as well as constraining regulatory barriers to private sector participation and investment, resulting in waning investors' confidence in the economy.

(f) Lack of comprehensive water resources development and irrigation policy coupled with vulnerability of fresh water resources to wasteful use, unsustainable farming practices, degradation and pollution.

(g) Lack of sustainable management of natural resources (forest, fisheries) and land use-planning policy covering all types of lands.

(h) Low productivity, non-remunerative employment and limited diversification of subsistence production system resulting in limited dynamism and intensification of the agricultural sector.

(i) Limited product and market diversification and investments in crop, livestock, fisheries and forestry production, as well as in agro-industries and agribusiness sectors (transport, post-harvest, processing, communications);

(j) Slow development in the rural financial market particularly in improving access to rural credit, savings mobilisation and development of new financial

instruments and capital markets to encourage agricultural and agro-industrial investments.

(k) Lack of advisory services to entrepreneurs in the food industry sector.

(l) Institutional weakness. There is a need to improve the skills, procedures and funding of government agencies.

Strategic Options: The search for food security and sustainable modern agriculture depends on responsive policies, correct price signals, and harmonious relationship amongst the Government, the private sector and the farming and fishing community. A policy-led and freer market strategy must focus on the removal of policy constraints, uncertainties and inconsistencies and market failures. Such policy environment will lead to economic reforms and sustainable agricultural growth and investors' confidence. Quick yielding actions are essential for addressing the food security and nutrition concerns (particularly rising income inequality and unemployment), and laying the foundation for sustained long term growth and development of the agricultural sector. The agriculture sector of Vanuatu requires an investor-friendly policy environment, robust public sector investment, (particularly in technology, infrastructure and information systems) and a field-action programme aimed at mobilising existing institutions and resources towards more efficient delivery of technology and support services to the farming, forestry and fishery sectors. The Government needs to intensify its collective efforts and partnership with the private sector towards products (beef, kava, squash, traditional and organic foods) and market diversification (e.g. seasonal comparative advantage and ethnic market) in ways that will be competitive with the open and deregulated markets of Australia, New Zealand, Papua New Guinea, Fiji, New Caledonia and other Pacific Island economics, North America and dynamic Asian countries. Vanuatu has to implement sustainable approaches for generating higher returns from their natural capital in fishery and forestry resources. Disaster mitigation measures and cyclone-proofing strategies are essential to moderate the adverse impact of natural disasters.

As a small country, Vanuatu suffers from the vagaries of severe price fluctuations, general long term structural decline in commodity prices and global competition for its principal export commodities (copra, cocoa, beef and squash). The country requires flexible coping mechanisms, namely: (a) dramatically improve the levels of production and marketing efficiency to ensure high profitability and returns to labour; (b) develop value adding upstream processing of its export crops (e.g. coconut oil and cream, chocolate and confectioneries for cocoa, pharmaceutical products from kava, processed beef and beef products); and (c) further diversify both the production and marketing systems to provide farmers with greater flexibility to respond to price signals. In the pursuit of such strategies, the GOV has to address the wide disparities in levels of agricultural and infrastructure development, in market access, investment, income and employment opportunities between Port Vila and Luganville vis-à-vis the outer islands of Vanuatu. The GOV will also phase out all distortionary subsidies and grants to the agricultural sector and replace it by agribusiness promotion and market creation initiatives. Reforms in the rural financial market will emphasise on rural savings mobilisation and linking banks with self-help production and marketing groups as well as on enabling farmers and fisherfolks to have access to new financial instruments and services of financial institutions, particularly the Vanuatu Development Bank. The relative comparative advantage of the booming beef cattle industry will be further strengthened. The bottom-up participatory and consultative process to the identification and removal of constraints to farming systems and agribusiness development will be operationalised.

The development strategy focuses on the intensification and diversification of the subsistence customary production system with special emphasis on increasing the levels of productivity and returns to labour. An improved system of food storage and preservation especially for seasonally produced foods and an updated and properly enforced legislation on food quality and safety are essential. The plantation and commercial agricultural sector will be supported through liberalisation of trade policies, stringent food quality and safety measures, development of agro-industries, creation of markets and modernisation of technology, post harvest, sanitary and phyto-sanitary measures and processing systems. Both systems offer the greatest potential for growth and diversification. The growth in the agricultural sector will result from favourable macroeconomics fundamentals and sectoral policies, and producers' response to price signals for specific crops, livestock (particularly cattle, hogs and poultry), forestry or fishery commodity. The country can develop relative comparative advantage based on market signals and new niche market (seasonal or ethnic) opportunities which will dictate shifts in output composition, area expansion and demands for productivity improvements. The code of conduct for logging will ensure that logging and reforestation practices comply with international standards. Sustainable and community-based fishery resources management, and the rationalisation of the tuna fishing industry will boost its contributions to food security and sustainable growth of the economy.

Indicators of poverty, food insecurity and inequality at the national and provincial levels are scanty and unavailable in Vanuatu. There is little current information on income distribution and practically no information on household income and expenditure patterns particularly on food. A food security and nutritional surveillance and information system, an updated legislation on food quality and safety, and social safety nets for food insecure groups (feeding, nutrition *fares,* and employment schemes) are essential to effectively address food insecurity and malnutrition issues in Vanuatu.

Concrete measures and actions are premised on a strategy, which focuses scarce public resources on policy, programme and investment areas where the Government has, or can immediately develop, a comparative advantage. Since the farmers and fisherfolks are the ultimate determinant of the sector's dynamism, the Government has the responsibility to provide conducive environment that unleashes investment decisions and productive initiatives in agriculture, forestry and fisheries. In certain cases, they need to help the farmers and fisherfolks in areas where they cannot help themselves or get assistance from the private sector. By putting in place the enabling sector policy and strategy framework and institutional arrangements, the farmers and private sector are encouraged to quickly respond to price signals and make sound investment decisions.

Public investments are required in technology development and transfer schemes. This calls for strengthening the research, extension and farmers' training through effective farmers', researchers' and extension workers' dialogue at the farm and grass roots levels. Vital support services (e.g. access to investment information, credit and market) and rural infrastructure (roads, transport, communication, market and post-harvest feasibilities) are essential area for greater investments in the agricultural sector. Public investment is required to improve the technical and management capacity of the operating departments of MALFF in policy analysis, statistics and computerised data base, programme and project formulation, benefit/costs analysis, input and output monitoring and evaluations. Based on bottom-up planning and participatory analysis of existing subsistence and commercially-oriented farming systems, specific constraints, opportunities, options and related risks and adversities will be identified

and considered in the formulation of sustainable food security, agricultural development and natural resources management.

C. Project Interventions: Income Generation Activities

I. Development of Rural Butchery Businesses in Outer Island Rural Areas

In the outer island rural areas of Vanuatu there is a lack of properly equipped and correctly operated rural butcheries. Currently livestock such as cattle are killed and processed in unhygienic conditions and without refrigeration. Butchery operators often have little if any knowledge of food safety and disease recognition.

The current situation means that food safety is a significant concern. Also the poor availability of consistent local meat supplies means that food security in rural areas is poor, and that protein sources are often derived from expensive imported canned beef or poultry products.

The proposed project would help to address these issues by carefully identifying individuals and cooperatives in 4-6 different rural areas that have an interest in establishing a butchery business, and then assisting them to develop a sustainable business through the provision of suitable equipment and training.

Sufficient in-country expertise exists to carry out the required training. All costs are freight inclusive.

Local Contribution

- Vanuatu Government (Quarantine and Inspection Department) will provide labour component for site assessment, supervision of construction, training of participants on site and in a central abattoir/butchery, follow up visits, and will conduct food safety awareness workshops in villages nearby to selected butchery sites on each island.
- Local village participants will provide labour and land rental.
- Both the participants and the Vanuatu Government will provide storage for project materials and equipment where needed.

Success Indicators

- Increased availability and consistency of supply of local meat as a food in rural areas where currently no meat processing businesses exist.
- Improved food safety for local community through improved meat hygiene standards and knowledge of food safety principles by those involved in meat processing.
- Improved animal disease monitoring in rural cattle herds.
- Improved food safety for members of local communities through conducting awareness workshops in nearby villages on food safety.

- Improved market conditions and incomes for local cattle farmers
- Expansion of local economic activity in rural areas concerned and improvement of incomes of participants.
- Contribution towards sustainable rural development through utilisation of rural Vanuatu's agricultural resources.

II. Development of Agro-Forestry to Enhance Food Security

Forests and forest products are an important source of food, fuel, timber as well as a revenue entity for communities living in vicinity of forests. It was estimated that more than 80 percent of Vanuatu's 200,000 population living in the rural areas depend on forests and its resources for their daily needs. This has already indicated the importance of forests' contribution towards food security.

Forest industries have played an important role in Vanuatu's economy. It was estimated that up to 1,500 people have been employed in the industry, while the National Statistics data indicated that forest products was third in the 2001 total exports as a singe sector, representing more than VT334 million. There is concern that the forestry sector might be under developed, and its full potential not fully realized by the forest communities. This project is intended to further explore areas that will enhance community participation as primary beneficiaries from improved forestry management practices.

Local Contribution

Local contribution will include:

- Provision of land,
- Provide free labour,
- Assist select and manage planting stock,
- Nursery management and maintenance,
- Data collection and analysis, and
- Storage of project supplies and equipment.

Success Indicators

- Increase awareness of agro-forestry system on small islands;
- Increase supply of fruits and nuts available for consumption;
- Income generation opportunities established through sell of excess fruits and nuts;
- Multiple land use to increase productivity;
- Increase fuel wood supply;
- Reduced time required for fuel wood gathering, thereby resulting in more time available to other things;
- Increase income generating opportunities through sell of excess fuel wood;

- Establish appropriate agro-forestry systems, which increase productivity;
- Communities are well informed of the best practices;
- Income generation opportunities through best practices; and
- Communities are informed on techniques and practices important to sustaining/maximizing on limited resources.

III. Production of dehydrated root crop products

This project aims at developing solutions for dehydrating locally produce rootcrops and transforming them into pellets and/or chips or flours. It also aims at strengthening the technical support to the private sector involved into the importation and trade of starch based products (starch, flour and rice) in order to develop local substitutes.

The cultivation of cereals such as rice, corn or wheat in a large scale is not recommended in Vanuatu because of serious technical constraints. It is however, possible to develop the cultivation of root crops (manioc, sweet potato, yams and taros) that can also produce starch. The local processing of these root crops could offer to Vanuatu an opportunity to substitute imports with locally grown starch and to open new markets for local farmers. The technology involved in the processing of root crops is well known and can be rapidly adapted to Vanuatu conditions. The private sector is however reluctant to invest in such projects because imports represent a convenient and highly lucrative activity.

It is likely that if the demonstration was made that the alternative is viable, the private sector could purchase local root crops and process them into flours, and/or noodles. These flours could be partly used for mixing (up to 30%) with the imported wheat flour for baking so that the annual imports are reduced. These flours could be also be used by commercial bakeries and/or private persons to produce flour-based products. Finally, these locally made flours could be used to produce noodles, which are increasingly popular in Vanuatu. Pellets could be produced for animal feed (poultry and pigs) as well.

Local Contribution

- Local contribution includes 30% of the working time of 5 field assistants working for the Department of Agriculture.

Success Indicators

- Transfer of know how to 5 women communities in 5 different islands of Vanuatu
- Increased post harvest treatment of locally grown root crops
- Development of 5 local small-scale enterprises managed by women (village mills)
- Production of flours for human consumption and of pellets for animal feed
- Possible substitution of importations in the long term

COOK ISLANDS

Capital:	Rarotonga
Land Area (km^2)	240
Sea Area/EEZ (million km^2)	1.8
Islands (No.)	15 (13 are inhabited)
Population (No.)	18,700 (2000)
Annual Growth (%)	0.5
Density (inhabitants/km^2)	79
Rural Population (% of total population)	31
GDP (US$ million)	95.8 (1997)
Agricultural GDP (% of total GDP)	22
GDP per caput (US$)	5,044 (1997)
Currency:	New Zealand Dollar Cook Island coins

A. General

The Cook Islands consists of a group of 15 islands with a total land area of 240 km2, scattered over some 2 million km2 of the Pacific Ocean. The country has no immediate exploitable mineral or energy resources. Its natural resource base is primarily the fertile soil and the marine resources.

Like many other Pacific Island Countries, the Cook Island's economic development is constrained by the isolation of the country from foreign markets, the limited size of the domestic market, lack of natural resources, periodic devastation from natural disasters and inadequate infrastructure. Agriculture provides a base for food security. Manufacturing activities are largely limited to fruit processing, clothing and handicrafts. Marine products generate most export revenues. Tourism generates the largest share of the GDP.

B. The Agricultural Sector

Agriculture in the Economy. Agriculture contributes around 18 percent to GDP and employs less than 5 percent of the employed work force. Though 67 percent of all households are agriculturally active, they do so more as a hobby and part time activity to grow some of their basic local food and not for income. Only 1 percent of the agricultural households derives all of their income from agriculture and all of them are in Rarotonga. None of the households in the outer islands depend on agriculture for all of their income, though almost all households engage in agriculture for both subsistence and semi-commercial purposes.

Land Use, Farming Systems and Institutions. The land area of the Cook Islands is 58,452 acres, of which 58 percent (33,826 acres) is arable and is classified into two categories. The first category, Class 1, includes lands which are suitable for cash and subsistence crops

including vegetables. The second category, Class 2, includes lands which are suitable for tree crops only. Twenty eight percent of total arable land is estimated to fall in Class 1 category.

Distribution of total arable, Class 1 and Class 2 land varies widely across the different islands. In Rarotonga the proportion of arable land is lowest but 71 percent of it is Class 1 land, whereas in the northern islands the proportion of arable land is highest but all of it is Class 2 land.

A high proportion of arable land is not available for agricultural activities and how much is in fact cultivated in any particular year is difficult to estimate with precision. According to the 1988 Census of Agriculture the total area of the agricultural holdings in actual use was 5,006 acres (only 15 percent of total arable land) and 1,429 acres were fallow. In addition, there are approximately 500 acres of land used by the government for agricultural activities. Total area in actual use, inclusive of fallow, thus amounts to 6,934 acres, only 20 percent of total arable land.

Major Challenges and Constraints. Due to the right to settle in New Zealand and the existence alternative income opportunities, agriculture in the Cook Islands is not an attractive choice and large tracts of agricultural land remain uncultivated. Thus the major challenge is how to make agriculture competitive, profitable and an attractive choice for income generation.

Access to land of sizeable proportion to generate sufficient income comparable with alternative sources is one of the main constraints to development of commercial agriculture. This, though related to the land tenure system (and multiple ownership), is more due to expected opportunities for commercial and residential use of land. People are keeping their options open to convert land into non-agricultural use whenever the opportunity arises. Large tracts of land are therefore lying unused. In addition, the country is severely labour constraint due to migration to New Zealand and shortage of hired labour imposes additional challenge for commercial agriculture in the Cook Islands.

Water is an important requirement for increasing productivity. Increased production and quality of fresh vegetables and fruit will crucially depend on availability of water. At present water for agriculture is drawn from the system supplying water for domestic use. This system, it is anticipated, will not be able to meet the increasing demand for domestic, industrial and agricultural use. It is therefore, highly probable that agriculture production and particularly productivity and quality of output may be severely affected by inadequate water supply.

The Cook Islands is a small and environmentally fragile country. In Rarotonga, nearly 70 percent of land area consists of steep slopes and hills. These hills, if improperly cultivated, risk being eroded and degraded. In the coastal areas, destruction of the coral reefs, intrusion of salinity through surface and underground water may become a major concern for agriculture. Control and prevention of degradation of the hills and the coastal areas is a major challenge and critical for sustainability of the resource base and long run sustained prosperity of the people.

Strategic Options. Zoning of prime agricultural land provides the best opportunity to reduce speculation on alternative opportunities and thus encourages investment in land development and facilitates access to land of sufficient size to enable generation of income comparable with alternative opportunities.

Zoning of agricultural land may come into conflict with peoples' desire and right to built houses. Specific provision for houses, when suitable non-agricultural land is not available, may need to be included in the zoning law. Specific provisions may also include government commitment to assist in developing non-agricultural land which is not suitable for houses for house building.

In Rarotonga, there is plenty of ground water suitable for irrigation and potential to capture rainwater by installing water tanks. The mean annual rainfall is 2,100 mm. The ground water should ideally be exploited by shallow tube wells only, to avoid salt water intrusion. A system of irrigation based on shallow tube wells also appears to be very suitable to the existing pattern of land holdings, where a single household may own several small plots of land not always adjacent to each other. Priority, thus, should be given in developing a suitable and adequate infrastructure and facilities for irrigation.

Increased livestock production has led to higher demand for feed. Availability of feed will soon become a severe constraint to livestock production. If not addressed immediately, the future of livestock will become dependent on imported feed. The country is already importing animal feed worth more than half a million dollars per year. The strategic options thus should consists of:

- production of fresh fruits and vegetables for domestic market as well as export; and
- encourage and give priority to the private sector to move into production of feed by providing tax incentives, land lease, credit facilities and free import of machinery and other related inputs including vitamins, protein and minerals for mixing with local products.

C. Project Interventions: Income Generation Activities

I. Fruit Trees Development

Tourism in the Cook Islands is "big business"; current ratio of local population to annual tourism inflow stands at 1:5 (15,000 population/75,000 tourists). This has created a huge local market for fresh agricultural products, which is not being met by local supplies. During times of low or non-existent local supplies, fruits have to be imported, resulting in loss of foreign exchange earnings. A lot of the imported tropical fruits can easily be grown locally if the local production capacity is sufficiently expanded and strengthened. This can be done with the following project.

Local Contribution

Local contribution includes the following:

- Labour for nursery operations, maintenance and management;
- Storage of project supplies and equipments;
- Maintenance cost of plantations after 5 years;

- Plant replacement costs; and
- Land rental.

Success Indicators

- Increased supply of fruit seedlings and planting materials for distribution to farmers;
- Increased fruits production from the planted seedlings and planting materials;
- Readily available supplies of fruits for both the local and export markets, thus reducing imports and increasing income earned; and
- Expanded employment opportunities in the farming sector as a result of the enhanced income generating capacity of the project participants.

FEDERATED STATES OF MICRONESIA

Capital:	Pohnpei
Land Area (km^2)	700
Sea Area/EEZ (million km^2)	2.9
Islands (No.)	607
Population (No.)	118,100 (2000)
Annual Growth (%)	1.9
Density (inhabitants/km^2)	168
Rural Population (% of total population)	73
GDP (US$ million)	210.6 (1996)
Agricultural GDP (% of total GDP)	3 (1996)
GDP per caput (US$)	1,928 (1996)
Currency:	United States Dollar

A. General

The FSM is the largest and most diverse part of the greater Micronesian region and is comprised of four States, which are, in geographic sequence from west to east, Yap, Chuuk, Pohnpei and Kosrae. All but Kosrae State include more than one island and each State has considerable autonomy within the Federation. The total landmass is 438 square miles (702 km2), with a declared EEZ covering over 1 million square miles (16 million km2). The FSM comprises 607 islands with land elevation ranging from sea level to 791m.

Rainfall is extremely high on the high volcanic islands of Kosrae, Phonpei and Chuuk and can exceed 400 inches a year. The region is affected by storms and typhoons that are generally more severe in the western islands, and by periods of drought and excessive rainfall associated with the "El Nino". In recent years, the droughts of 1982-1983 and 1997-1998 were especially severe with groundwater sources greatly reduced, agricultural systems damaged and coral bleaching events recorded.

The FSM is a young independent nation, having signed with the United States, a Compact of Free Association in 1986, thereby terminating its UN trusteeship under the US. The Compact treaty established a special relationship with the US providing economic assistance.

The indigenous population is Micronesian with most of the people residing on the main islands of the State capitals. The 2000 census preliminary count of the population is 107,000, half of which are younger than 20 years of age.

Estimates of GDP performance indicate that since 1987 the economy has grown by an average annual rate of 2.5 per cent. Economic performance of each State varied over the period 1987-1999 with GDP growing at an annual rate of 0.3 per cent for Chuuk State, 2.5 per cent for Kosrae State and 3.6 per cent for the States of Pohnpei and Yap.

The FSM is exceptionally vulnerable to natural disasters and its remoteness from major trading markets greatly impedes the nation's potential to economically compete regionally and internationally. The majority of households are dependent on subsistence living. Traditional

resource utilisation practices and community management regimes are eroding which has a direct negative on the health of the nation's environment.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture and the Economy: Agriculture is the most important primary activity in the nation because of its contribution to employment, wage income, export earnings, and subsistence production. Agricultural activities provide over 60% of the food consumed, and employ almost 50% of the labour force on a full-time or seasonal basis. Government services dominate the economy. Agriculture, fisheries and tourism sectors are recognised as providing the long-term growth potential and comparative advantage of the FSM. Thus the major economic challenge facing the FSM is to assist in the building and developing an environment conducive to private sector growth.

Copra remains the ubiquitous cash crop throughout the FSM, but production has decreased substantially due to low prices for copra coupled with increasing sterility of the coconut palms. Primary industrial processing occurs on Pohnpei, Chuuk and Yap. Ponape Coconut Products, Inc. continues to develop a number of coconut oil products including laundry soap, shampoo, body and hair oil, cooking oil, liquid soap and suntan oil. Some high quality charcoal is also being produced from coconut shell on Pohnpei as a by-product of the coconut oil industry. The copra processing plant on Chuuk manufactures laundry soap and plans to produce a similar variety of products as the Pohnpei plant in the near future.

Pepper (piper nigrum) is being industrially processed and packaged on Pohnpei to supply both the local tourist market and export markets. White pepper is being produced as a cottage industry, and is primarily sold locally to tourists. A small kimchee factory operates on Pohnpei using locally grown cucumber and head cabbage. Yap processes fiber from coconut husks into brooms, brushes, ropes and mats. Also in Yap, a small abattoir has been established, capable of slaughtering animals for the local market.

Land Use, Farming Systems and Institutions: Farming is mainly on a subsistence level. The principal agricultural crops are coconuts, bananas, betel nuts, cassava and sweet potatoes. White pepper corns are produced on Pohnpei. With one exception, fully commercial agriculture does not exist. On Pohnpei, a commercial pepper farm has been started with extensive cropping of about 100 acres targeted for production over the next five years. In Kosrae, citrus is a significant cash crop with limes and tangerines being exported. Periodically, Yap exports bananas, other vegetables, fruits and betel nut to Guam and Palau.

Livestock production is increasingly important throughout the FSM, particularly poultry, eggs and pork. Goats are becoming increasingly important in some areas, with goat meat production in Pohnpei doubling over recent years. Insignificant numbers of large ruminants continue to be raised, with 120 head of cattle and 70 head of buffalo in Pohnpei. There are also a few head of cattle in Kosrae and buffalo in Chuuk.

Each state in the FSM has extensive forest cover, with tropical rainforest being the predominant forest type. Significant areas of mangroves are also present. On the low atoll islands, and the literal slopes of the high islands, the forest cover is better described as an agro-forestry complex with a scattered secondary forest on long-fallow within the traditional gardening system. Timber is cut for subsistence farmsteads for construction and firewood. Mangrove timber is used for handicrafts.

The ocean is undoubtedly the country's most important resource. FSM's exclusive economic zone covers some 2.6 million square kilometers of ocean, which contain the world's most productive tuna fishing grounds. The approximate market value per year of tuna harvested within the nation is about US$200 million. Present marine resource use consists of inshore fisheries (those taking place in mangroves, reef areas, and lagoons), nearshore and bottom fisheries and offshore fisheries (mainly for tuna). Subsistence fishers make the greatest use of inshore resources and artisanal fishers concentrate on nearshore and bottom resources.

The large number of islands scattered over a huge ocean, makes provision of adequate inter-island air and sea transport a major challenge. Air and sea transport in and out of the country is also difficult limiting opportunities for export. There is generally limited understanding and experience with business concepts and practices. The labour force lack job skills needed to support economic development.

Strategic Options. The sectors, which seem to offer the most potential for near- term income generation are fisheries and tourism. Agriculture has potential, particularly for intra-FSM trade, but the small land area suitable for agriculture limits large-scale farming for export. The FSM collects substantial revenue from licensing foreign vessels for tuna fishing in FSM's Exclusive Economic Zone. More recently, additional earnings have begun to grow as FSM's Fishing Corporation and the Yap Fishing Corporation have initiated their own fishing operations together with onshore processing. Farming of giant clams and other marine products has been instituted. Various plans to establish canneries have been discussed, and will be pressed. Tourism, also, has seen significant increases in recent years. A number of new, small hotels have opened in Pohnpei, Yap and Kosrae with support facilities for diving and other tourist activities. Provided the challenges of limitations in air transportation, land- use issues and competition with other island destinations, can be overcome, increased tourism would enhance demand for locally produced foods.

C. Project Interventions: Income Generation Activities

I. Fruit and Root Crop Development in Kosrae

Demand for root crop and fruit planting material has been increasing in Kosrae as a considerable number of farmers are changing from subsistence to semi-commercial production, motivated by demand from other states as well as locally and for export.

The project will use the Micronesia Plant Propagation Research Centre (MPPRC) to propagate fruit and root crop planting material for planting by farmers. The MPPRC has, for several years, been propagating banana seedlings and more recently, Soft-Taro and several types of citrus. Plans are afoot to also propagate sakau (kava) and bettle nuts for export. At the present time, the facility does not produce to capacity. The Department of Agriculture, Land and Fisheries will assist farmers in the distribution of planting material, provide farm equipment services, training on technical matters and promote farming (particularly organic) in Kosrae.

The crops that will be propagated will include, among others: bananas, soft-taro, giant taro, yam, citrus, bettle nuts and sakau. The seedlings and planting material propagated will be distributed for growing in Kosrae and in other states if requested.

The local contribution includes: local staff supervising the project, training facilities and office for project staff.

Success Indicators

- Increased supplies of fruits and root crops seedlings for Kosrae and other states;
- Increased export potential;
- Increased supply of local fruits and root crops for household consumption; and
- Provide incentive to farmers to increase semi-commercial farming.

II. Development of Banana Production in Chuuk State

Bananas are an important food crop in Chuuk as in other tropical areas. The crop can be easily grown and has good local marketing potential as well as for export to other states of FSM and further abroad.

The project will construct a greenhouse and acquire material, supplies and necessary tools for propagating planting material. The project will also fund a co-ordinator and staff for the project, provide support for the preparation of land for production and production inputs as well as aid in distribution of the planting material.

Local contribution include: labour force for construction work; storage of project supplies and equipment; maintenance cost after three years; replacement costs; and land security.

Success Indicators

- Increased fruit seedlings and planting material;
- Increased expected productivity from seedlings and planting material;
- Increased availability of fruits for local and export markets, thus reducing dependency on imports;
- Increased employment opportunity in the farming sector;
- Increased agricultural marketing within the country.

KIRIBATI

Capital:	Tarawa
Land Area (km^2)	726
Sea Area/EEZ (million km^2)	3.6
Islands (No.)	33 (20 are inhabited)
Population (No.)	90,700
Annual Growth (%)	2.5
Density (inhabitants/km^2)	112
Rural Population (% of total population)	63
GDP (US$ million)	46.3 (1996)
Agricultural GDP (% of total GDP)	9
GDP per caput (US$)	592 (1996)
Currency:	Australian Dollar

A. General

Kiribati is an archipelagic nation comprising 33 atolls. Kiribati has a total land area of only 810 km^2 but with a surrounding EEZ of about 3.5 million km^2. The country is divided into three widely separated island groups - the Gilbert Group in the west, the Phoenix Group in the centre, and the Line Islands in the east. The distance between the eastern and western extremes of the EEZ is over 4,500 km.

Water in Kiribati is scarce and there are no rivers, lakes or other freshwater impoundments. Groundwater resources are limited and rainfall is light. Natural disasters in the form of strong westerly winds (November to March) and droughts are common. The atolls and islands are low-lying making them vulnerable to sea level rise and the vagaries of typhoons.

The population of Kiribati is about 90,700[12], over ninety percent of which live in the Kiribati Group. South Tarawa - the capital and commercial centre – accommodates over forty percent of the total population.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture in the Economy. Kiribati's economy is heavily dependent on the primary sector, agriculture and fisheries accounting for 17.6% of GDP in 1994 and for 21.5% of GDP in 2000. The subsistence agricultural and fisheries sectors play a predominant role in employment and in facilitating food security of the country.

On average, during the period 1996-1999, the total value of agricultural exports and imports were around US$3 and US$13 million, respectively, resulting in a deficit of 10 million dollars. The corresponding export/import ratio was 23%. Agricultural imports in value terms, during that period, averaged 37.3% of total imports, while agricultural exports were about 44.3% of total exports.

[12] SPC Selected Pacific Economies - a Statistical Summary (SPESS), 2002.

Land Use, Farming Systems and Institutions. Agriculture occupies an important part of the daily activity of the Kiribati people and involves the cultivation of a number of crops and raising a limited number of pigs and chickens. Crop production is primarily subsistent, crops comprising coconut, babai (swamp taro), breadfruit, pandanus, banana, pumpkin, sweet potatoes and papaw. Home gardening had been introduced but constrained by lack of tools, seeds, fertilizers and pesticides.

The traditional farming system is characterized by groves of coconut trees with various layers of crops inter-planted between the trees. A significant feature of the system is the presence of family owned pits in which swamp taro and giant taro are cultivated. The use of the pits facilitates the plants ability to access the thin water lens. An important activity in the cultivation of taro is that of regularly adding organic matter to the base of the plants around which coconut leaves have been thatched to retain the material. The coconut tree dominates agricultural production. It provides a daily component of the diet (food and drink) as well as household cash, especially important for the outer islands. Copra exports constitute a significant proportion of the country's export earnings despite the currently very low prices.

Subsistence and small-scale artisanal fishing are conducted from traditional canoes driven by sail or paddle, from plywood canoes powered by outboard motor and from larger outboard-powered skiffs. Most inshore and coastal fishing activity in Kiribati is for subsistence purposes. Impoundment of milkfish (*Chanos chanos*) fry at spring tides occurs in brackish water lagoons on some islands. *Eucheuma* seaweeds, (*Kappaphycus alvarezii*), have been cultured in Kiribati since the early 1980s and farms established in suitable atolls throughout the country's three island groups.

The country has no forest resources as such but only a few vegetation types. These (mostly in scattered patches) although restricted in area and density play important roles such as: preventing coastal erosion, maintaining soil fertility and the nutrient cycle, providing food, fuel-wood and building material for the local people.

Major Challenges and Constraints. The government of Kiribati does not have long-term development policies for agriculture, fisheries and food security. Mid-term sectoral development strategies outlined in its three-year NDS documents have been based mainly on sector-expressed priorities rather than on objective-implementation performance analysis.

Kiribati has limited natural resource base, especially land and fresh water for development. Kiribati's atoll soils are generally thin, coralline and lacking in a number of plant nutrients - particularly Nitrogen, Phosphorus, Potassium and Calcium - and micronutrients. The narrow islands and islets are over-exposed to wind and salt sprays. There is no running water and the fresh water-lens is thin and highly susceptible to pollution by inorganic farming practices and intensive livestock production.

The atolls and islands are widely scattered and sparsely populated. The domestic market is thus small with little potential for economies of scale. Sea and air transport between atolls/islands, is inadequate both in suitability and regularity. Access to major international markets is expensive and hard to arrange. The local and overseas telecommunication services are unreliable and expensive. There are no established fresh produce markets at the urban centres. Although the land tenure system facilitates household access to land for planting food crops, has also fragmented holdings into small lots, which constraints development of more commercially oriented production.

The local people generally have limited understanding and experience with business concepts and practices. The labour force lack job skills needed to support economic development. In terms of improving nutrition, it has been difficult to persuade the I-Kiribati population to consume introduced vegetables, particularly the leafy types. On the other hand, consumption of introduced starchy foods like rice and flour has overtaken that of their locally produced counterparts.

On the fisheries front, Kiribati could take more advantage of its large EEZ than it is currently doing. Kiribati lacks adequate onshore facilities to attract higher levels of tuna transhipment by foreign vessels. Although funds received from issuing licenses to foreign fishing vessels represent Government's major revenue source, the potential for increasing local exploitation of the oceanic resources remain huge. However, private sector does not yet have the information necessary for planning or the means needed to work towards realizing the potential.

Strategic Options. Kiribati's traditional farming system is still widely adopted across the atolls and there exists a wealth of indigenous knowledge on viable atoll agricultural production technologies. Added to this are information generated through externally funded projects including the UNICEF home gardening project, EU PRAP Atoll Farming Systems project, SPC/FAO agro-forestry project as well as the on-going work of the FSP.

Experience gained and information gathered from these projects, have led DOA to concentrate at the present time on opportunities for increased production of: eggs, tomatoes, bananas, cabbage, cucumbers, papaya and eggplant. Emphasis is being put on encouraging wider adoption of improved techniques, applying effective environmentally friendly pest control methods and improved marketing organization and skills.

Scope exists for privatization of the crop nursery network across the atolls and of the livestock breeding facilities at Tarawa. Diversifying the coconut industry to coconut timber production (and perhaps downstream processing) and to other coconut products e.g. hydrogenated oil, shampoo etc., represent opportunities. The DOA has retained a consultant to investigate the feasibility of establishing a coconut timber industry.

With 3.5 million square kilometres of EEZ, Kiribati has the second largest EEZ in the world. Kiribati's marine resources therefore have the potential to provide the basis for a major domestic industry as well as generating large flows of factor income.

Agreement has been reached between Government and the Norwegian Cruise Line (NCL) for a weekly cruise to Tabuaeran in the Northern Line Group bringing in tourists from the US mainland and Hawaii. This represents a good opportunity for increasing trade in handicrafts. However, marketing would be greatly enhanced by the provision of appropriate infrastructure on the island.

Kiribati is a member of *Codex Alimentarius*. Kiribati intends to develop its food standards in line with the provisions of *Codex*. When completed and approved by Government the food standards would enhance Kiribati's potentially lucrative industry in exploiting, processing and exporting its fisheries resources.

C. Project Interventions: Income Generation Activities

I. Strengthening the Development of Food Crop Production

This project will focus on increasing domestic food production through the upgrading of the nurseries in Tarawa the outer islands, production of planting materials and distribution to farmers and marketing of the produce. Initial supplies of planting materials will be sourced from the SPC germplasm collections and vegetable seeds will be imported from reputable overseas/local seed suppliers. These materials will be propagated and multiplied in the nurseries and distributed to farmers. Likewise, exotic fruit and leafy trees e.g. chaya and drumstick that have proved to survive well under atoll conditions will be propagated, multiplied and distributed.

The local contribution includes: Local staff supervising the project, storage and training facilities, land for nurseries and office for project staff.

The cost and financing plan are indicative as the implementation and cost details will be worked out in detail with the RPMU (see TOR for Project Co-ordinator) and MNRD in Kiribati.

Success Indicators

- Increased supply of planting materials for distribution to farmers;
- Increased domestic food production;
- Savings in foreign exchange from reduction in imports;
- Family income generation through marketing of surplus farm produce;
- Easy access to fruits and vegetables will in turn results in consumption of nutritious foods thus contribute to improved nutrition;
- Farmers trained and gain knowledge in alternative farming techniques;
- Expanded employment opportunities in the farming sector as a result of the enhanced income generating capacity of the project participants; and
- Enhanced Income source for the local farmers.

The local contribution includes: Local staff supervising the project, training facllities and office for project staff.

The cost and financing plan are indicative as the implementation and cost details will be worked out in detail with the RPMU (see TOR for Project Co-ordinator) and MNRD in Kiribati.

MARSHALL ISLANDS

Capital:	Majuro
Land Area (km^2)	181
Sea Area/EEZ (million km^2)	2.1
Islands (No.)	1,152 and 30 atolls
Population (No.)	51,700
Annual Growth (%)	2.0
Density (inhabitants/km^2)	286
Rural Population (% of total population)	35
GDP (US$ million)	90.3 (1997)
Agricultural GDP (% of total GDP)	14 (1996/97)
GDP per caput (US$)	1,774 (1997)
Currency:	United States Dollar

A. General

The Marshall Islands consists of 29 low-lying coral atolls and five islands spread over a sea area of over 750,000 square miles, in the Central Pacific. There are more than 1,200 islands and islets with a total dry land area of 180 km^2. Inhabited islands and atolls occupy 156 km^2 or 15,600 hectares. The islets and islands have a mean elevation of 2 meters above sea level, making them particularly vulnerable to sea level rise and the destructive forces of tropical storms.

RMI has a resident population of 58,800 growing at the rate of 3.8%. About 30,000 of the population live in Majuro and 11,500 in Kwajelein, mainly in Ebeye, giving a combined urban population of approximately two thirds of the total population of RMI.

The climate is warm and humid with temperatures ranging from 24.7–29.9^{o}C, humidity of 78-83% and annual rainfall of approximately 3,388 mm. It is generally dry from January to May and rainy from June to December. The soils are sandy and alkaline and lacking in many essential elements, particularly nitrogen, phosphorus, potassium and calcium. Lack of organic matter and calcium makes water-holding capacity very low.

Over time RMI's economy has been shaped by external forces. The Marshall Islands were occupied by Germany (1860-1914) and Japan (1914-1944). Since then, special relationships evolved between the country and the USA. From 1945 to 1986 the RMI was part of the United Nation's Trust Territory of the Pacific Islands administered by the USA. The USA relinquished its trusteeship under the terms of the *Compact of Free Association*. Under this agreement the US continues to lease most of Kwajalein atoll for its military base and provides substantial financial support to the RMI economy until the year 2001. This agreement has been extended to 2004 to allow negotiations on a new Compact agreement to be finalized.

In 1992, the GDP was estimated at approximately US$80 million (US$1,540 per capita), USA funding accounting for about 65%. In 1999, GDP was US$97 million, with approximately 80% accounted for by US funding. GDP is dominated by the service sector, mainly supported externally. Domestically generated economic activity is based upon the agriculture sector.

Increasing urbanization coupled with high wage levels that do not reflect domestic productivity, generates a high level of consumption. In turn the high level of consumption is reflected in very high imports and a substantial deficit in the balance of trade. In 1997, total imports were valued at $80.2 million compared to exports of US$16.7 million[13]. About US$25 million or 31% of the total import bill was for food. For the most part, the trade deficit is covered by external funds.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture and the Economy. Agricultural production is relatively small but important to the livelihood of people and the economy of the Marshall Islands. It comprises food crops, small livestock and one cash crop, copra. Land for agricultural production is limited. In most atolls there are islets that are not suitable for growing crops. Less than one half of the total land area is considered as potential agricultural area. Use of available land for housing, infrastructure and US military needs competes with that for cropping.

Land Use, Farming Systems and Institutions. A typical landholding (*weto*) is a strip of coconut grove that stretches across an atoll from the ocean to the lagoon. Near the dwelling the coconut canopy would be accompanied by a few breadfruit, papaya, banana and pandanus trees. Within the coconut grove there may be a taro pit. Room may be found to house a few poultry or pigs. Very few *wetos* include area for vegetable production and there is no commercial production of food crops. Since early this century, coconuts (copra) have provided the main household income. This is still the predominant pattern although the role of copra is weakening and indigenous staples now combine with increasing amounts of imported food.

Breadfruit is the most widely available starch food and regularly consumed when in season from January to March and June to July. Some breadfruit is preserved using traditional methods. Pandanus produces fruits between December and March and a year's supply of leaves for roofing and handicrafts. Production of sweet bananas varies between atolls with Namdrik and Ebon atolls having the greatest relative production. Cooking-banana is less common. Pumpkins are widely eaten and easy to grow. Production of taro and sweet potato has fallen dramatically because of increased access to imported staples, which are more convenient for preparation and storage. Arrowroot, the traditional staple of the atolls has virtually disappeared from use.

Local foods are used for special occasions, as a reserve when imported foods are not available, and for variety (from imported foods). Traditionally, food crops were not sold but shared or exchanged. Exchanging atoll food for imported food between relatives living in the outer island and those in the urban centres is prevalent. Most young families have been growing up in times of easy access to imported foods. Therefore, many of the youth, especially those in urban areas, are unfamiliar with atoll food production.

Livestock production in the country is visible mainly in the outer islands. At subsistence level, pigs and free-range chicken are the main livestock kept. Most households at the outer islands keep a few pigs and a number of local chickens.

[13] SPC Selected Pacific Economies – a Statistical Summary (SPESS) 1997.

The fisheries sector comprises two sub-sectors, coastal and oceanic fisheries. The coastal fisheries (reef and lagoon) consist of inshore and near shore resources. They are the basis of domestic food security for outer atoll/island communities. Households harvest these resources for their own consumption – at the rate of 1,500–1,700 tons per year – and sale to the urban areas. In Laura on Majuro Atoll a fishing-cooperative formed with support of an NGO (Mission Pacific) carry out fishing on a commercial basis, supplying fish to retail outlets in Majuro.

The oceanic fisheries are offshore resources in the exclusive economic zone (EEZ). These are harvested for sale in overseas markets, and since 1999 some of this product has been going to the Majuro tuna loining plant. Oceanic fisheries resources are exploited through licensing of vessels from distant water fishing nations (DWFNs) allowing them to fish in the Marshall Islands EEZ.

The use of trees (coconut stems and leaves and pandanus leaves) for construction purposes is common particularly in the rural areas. Use of trees for firewood is especially common in the outer islands. Trees also provide protection of the coastal areas from the ravages of tropical storms. There is however no evidence that people plant or replant and manage trees for these purposes. Effort is currently being made to promote such activities.

Major Constraints and Challenges. Typical of atoll soils, the soils are generally thin, sandy, alkaline and lacking in minerals (particularly nitrogen, phosphorus, potassium and calcium) and micronutrients essential for plant growth. Low and poorly distributed rainfall combined with the poor water retaining properties of the soil limits the range and quantities of crops that could be cultivated.

The country is isolated from overseas markets making transport costs high and undermining the competitiveness of agricultural products that have potential for export. Many of the outer-atolls/islands are isolated from the markets at the urban centres. The domestic market is small and undeveloped, resulting in volatile prices for local produce, limited opportunities to diversify production, inefficiencies and diseconomies of scale in production, processing and marketing. Local market, air and sea transport infrastructure is generally undeveloped.

Introduced pests have increasingly become important. Coconut scale, the spiralling white fly and the breadfruit mealy bug were mentioned as the most important.

While the land tenure system has ensured equitable access to the land for food production, the small size of the farming land constrains commercial agricultural development. Furthermore, the tenure system makes the use of land as collateral for development credit difficult. Both the past and present Presidents agreed with the need for a review of the land tenure system. Government now plans to implement such a study.

Strategic Options. The main strength for development of agriculture in RMI lie in the fact that a robust traditional agro-forestry farming system had survived for centuries, albeit, now not commonly practiced in urban areas and by the younger generations. The Agriculture Division has staff with extensive experience in atoll agriculture. There is thus a strong base on which to build capacity and capability through long and short-term training.

There are islands that are strategically located close to the fresh food supermarkets of the urban centres and have good soils on which more intensive agricultural production can be

undertaken. The land tenure system can provide easy access to land for farming. All land in the RMI is owned not by government but by Marshallese individuals. One can commercially farm land provided one gets the necessary approval from the three current title holders[14] (*iroij*, *alap* and *dri-jerbal*) of that land. Government may lease land from the title holders then sub-lease it out. In addition, the RMI social system facilitates equitable distribution of food and material wealth, and caring for the less fortunate members of communities.

Opportunities exist for import substitution particularly in meat production, since the demand for pork, chicken and eggs is now almost wholly met by imports. The decisive factor determining local livestock production is perhaps the cost of animal feed since such feed has to be imported. With sufficient scale of production, the establishment of a local feed mill may become a viable proposition. However, it should be noted that although a portion of the protein raw materials - fish waste and copra cake - needed for such an operation may be locally supplied, the energy components - corn and sorghum etc. - would need to be imported.

Hydroponic farming is a relatively new technology that has been tried in RMI. The technology is an attractive one for the RMI environment although lack of high quality water and occasional sea sprays would act to discourage entrepreneurs.

Handicraft making involves traditional skills passed from generation to generation and deeply ingrained in RMI women. It would take proper production/market organization and some market savvy at home and abroad to turn these skills into household incomes across the atolls.

RMI has a large exclusive economic zone of around 720,000 km^2. Substantial pelagic sea resources have scarcely been exploited. The fact that the sector is relatively undeveloped provides an opportunity for the formulation and implementation of effective management regime that will ensure the sustainability of the resources.

Export market opportunities exist for most of RMI's fishery resources, particularly for fresh fish. Price movements in high-grade markets show an upward trend, which reflect growth in demand. Its close proximity to the cannery in American Samoa as well as US tax concessions for RMI products, provide competitive advantage for RMI's fish export industry. The construction of a service centre for fishing vessels has been identified as a feasible investment opportunity for foreign investors. Activities such as repair and construction of boats, provision of fuel, ice, and selling of certain fishing gear, etc., can be undertaken at the centre.

On the issue of food safety, the RMI does not have any food standards. RMI is a member of FAO but not of Codex Alimentarius. This may possibly have negative influence on RMI's export trade, particularly that in fishery products.

C. Project Interventions: Income Generation Activities

I. Arno and Kwajalein Community Pig and Chicken Production

[14] Ownership rights to land are held by the hereditary chief or *iroij* (or *leroij* if female). The *iroij* bequeaths custodial rights to a particular lineage called a*lap*. Both the iroij and *alap* rights are inherited through the female line. User rights are held by all members of the lineage who stand to inherit the *alap* position. These claimants known as *dri-jerbal* or workers, may or may not actually use the land holding.

The primary objective will help provide more reliable and diverse sources of meat and eggs for the people of Arno Atoll and of Ebadon and Carlson of the Kwajalein Atoll. The secondary objective will be the supplement of additional income for the people through sales of pigs and chicken to the urban centers of Ebeye and Majuro. There are 2100 people on Arno atoll and 10,000 on Kwajalein Atoll; they will be the beneficiaries of this project. Families on these atolls are facing difficult economic times as a result of the collapse of the copra prices. This project will help these communities become more self sufficient in food. In addition, because Arno Atoll is close to Majuro Atoll and Ebadon and Carlson Island to Ebeye, there is potential for families in these atolls to generate income from this project by selling to Majuro and Ebeye atolls respectively.

The primary activity of this project will be the construction of sheltered pig sties and chicken coops. The local governments will purchase pigs and chickens from the Ministry of Resources and Development agriculture complex on Mauro atoll and will oversee the raising of pigs and chickens for distribution to the households. Pigs and chickens will be raised for 3-4 months before distribution to the households. The people of these communities, coordinated by the local government will manage production.

- Construction of pig and chicken raising facilities;
- Purchasing of pigs and chickens from Ministry of Resources and Development;
- Raise pigs and chickens for 3-4 months before distribution to households; and
- The project participants will manage the operation with facilitation by the local government.

Success Indicators

- Source of meat and additional income to project participants;
- Access to meat and eggs reduces dependence on canned meat; and
- Improved nutrition.

The local contribution includes: US$7,500 cash, local staff supervising the project, transport of material and animals, training facilities and office for project staff.

II. Nallu Mile Fishing

The primary beneficiaries are small rural fishermen on the small island in Mile Atoll called Nallu. The atoll is located 60 miles south of Majuro. Youth and adults on the island have organized themselves into groups of ten or more in order to fish continuously by taking turns. The women have likewise organized themselves into groups in order to support the men on land by preserving the catch. Fishing method varies according to the condition of the surf, the lagoon, and the open ocean. These methods include spear fishing during day and night, bottom fishing, trolling, line and hook fishing and net fishing. The fish are either preserved in ice, salted or smoked.

Mile Atoll was the Japanese Imperial Army's Headquarters during the Second World War. The Japanese fortified the islands and paved air fields in large areas that are of little use to the people today because of concrete overlays. Farming is limited because of the danger of unexploded ordinances from the WWII. Because of these conditions and because fishing has always been a way of life in the Marshall Islands, the people of the Mile Atoll survive mostly by fishing.

The project will be monitored and assisted by the Marshall Maritime Resources Authority (MMRA). This MNRD division will assign one or two of its specialists to provide technical assistance in areas where the people are incapable. In addition, the traditional leader of the Island of Null, a woman, is the driving force of this project. By being the daughter of high chieftain, she has the support of the community and has been elected as the President of the community effort.

The men will fish while the women cook and preserve the excess fish supply. A meeting already took place whereby the 25 families in Nallu Island agreed to contribute the initial sum of US$1,000 for the project. The money will come from handicraft sale and the sale of copra. In addition, the R&D's Small Business Section will assist officers (president, vice-president and secretary) of the project by providing technical assistance with money management.

The objective of the project is to increase and sustain income by the sale of fish that will be caught through traditional methods of fishing whereby the island community, men and women, will have a role to play.

The local contribution includes: US$1,000 cash, local staff supervising the project, training facilities and office for project staff.

Success Indicators

- Sustainable source of income for members of the association, their families and the community; and
- Established funds for on-going project support and other identified association and community initiatives;

III. Laura Village Fish Processing

The beneficiaries of this project are the families of the 15 young women and men that are members of the Laura Village Fish Processing Association. The members of the association come from various sections (wetos) of the Laura Community. Indirectly the project will therefore benefit the families of the membership and the entire community at large by way of providing sources of income as each of the members represents a household.

Laura Village has a population of 4,347 and is located at approximately 30 miles west of Majuro, Capital of the Marshall Islands. The majority of the people are engaged in subsistence farming, fishing and home gardening. Village youth some of whom have dropped out of school have no sustainable means of livelihood. The traditional local source of income, copra making, is now at its lowest ebb due to the drastic fall in world price. Hence alternative means to livelihoods such as fishing and fish processing are important.

The majority of the male youth process some artisanal fishing skills, and the female youth, fish processing skills. However, due to inadequate resources these skills could not be utilized enough to earn them and their families' sustainable income.

The project will entail fishing, processing and market of the finished products locally, in key centres like Majuro and Ebeye with potential of export to Japan and some parts of the US. Members of the association will be remunerated for their labour input to the daily operations of the project. Members will be fishing nightly and during the day at least 3 days per week and will be processing and packaging the fish at the processing centre on the other days of the week. The fish products will then be packed in plastic zip-locked and vacuum-sealed bags or other types of containers suitable for the market.

The association has conducted market surveys for the products. The surveys indicated there is demand for tuna jerky, salted and smoked fish in both Majuro and Ebeye. Some store operators in Majuro and Ebeye have also indicated their interest to serve as distribution outlets for the products. There is also indication that marketing the products in Arkansas, Hawaii and Japan is possible.

The project activities will include fishing, fish processing in the form of making tuna jerky, smoked and salted fish and marketing these products in Majuro, Ebeye, Hawaii, Arkansas and Japan. The association will have a central processing and packaging centre where all the catch and fish purchased will be preserved, processed, and packed. The following activities will be implemented prior to realization of project out-puts:

The local contribution includes: US$1,000 cash, local staff supervising the project, training facilities and office for project staff.

Success Indicators

- Sustainable source of income for members of the association, their families and the community;
- Association members gain knowledge and skills in fish preservation, processing and marketing of indigenous products;
- Established funds for on-going project support and other identified association and community initiatives; and
- Expansion of association membership.

NAURU

Capital:	Yaren
Land Area (km^2)	21
Sea Area/EEZ (km^2)	320,000
Islands (No.)	1
Population (No.)	11,500 (2000)
Annual Growth (%)	1.8
Density (inhabitants/km^2)	548
Rural Population (% of total population)	
GDP (US$ million)	377 (1996)
Agricultural GDP (% of total GDP)	-
GDP per caput (US$)	27,514 (1996)
Currency:	Australian Dollar

A. General

Nauru is a single, raised coralline island with a land area of only 21 km^2 but with an EEZ, which extends over 320,000 km^2. Nauru lies 42km (26 miles) south of the equator. Its nearest neighbour is Ocean Island (Banaba, part of Kiribati). The economy is based on phosphate mining, export of phosphate providing the island's only income, apart from overseas investment. About 2m tons of high-grade phosphate is mined annually. With phosphate resources almost completed depleted the country is looking for alternative sources of income to replace mining revenues. Fisheries development is considered to be the principal economic prospect for the future.

Phosphate mining in the central plateau leaves a barren terrain of jagged coral pinnacles, up to 15m (49ft) high. A century of mining has stripped four-fifths of the total land area. The island is surrounded by a coral reef, exposed at low tide and dotted with pinnacles. The reef is bounded seaward by deep water, inside by a sandy beach. Coral cliffs surround the central plateau. The highest point of the plateau is 65m (213ft) above sea level.

Although possessed of only a very shallow lagoon, much of which dries at low tide, and a narrow fringing reef, Nauru's near-shore open ocean areas are frequented by an abundance of tuna and other pelagic species.

The climate is tropical with Northeast trade winds blowing from March to October. Day temperatures are 24–34^{o}C, average humidity 80%. Rainfall is erratic and heavy; average annual rainfall is 2,060 mm. The monsoon season is November to February.

Population is about 10,000 (mid 1992 est.) and there is a fluctuating population of overseas workers. The birth rate is 19.8 per 1,000 (1987-1990/91). Life expectancy was 68 years in 1993.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture and the Economy. Apart from phosphate mining, none of the sectors that play significant roles in economic development in most PICs e.g. agriculture, fisheries and tourism are active in Nauru. Having been dependent on imported food during over a century of phosphate mining, farming and fishing, subsistence or otherwise have not been practiced by the local population.

Land Use, Farming Systems and Institutions: The only fertile areas are in the narrow coastal belt where there are coconut palms, pandanus trees and indigenous hardwoods, and the land surrounding Buada lagoon, where bananas, pineapples and some vegetables are grown. Some secondary vegetation grows over the coral pinnacles. Very little crops are grown; most food items and much of the drinking water are imported. Limited varieties of fruit trees and vegetables are grown on a very small scale for home consumption.

The Government hopes to develop a local fishing industry. Although there is virtually no tourism at present, there is potential to develop such an industry. A colourful reef dotted with WWII sunken wrecks surrounds the island, the waters make great diving and sport fishing is good.

Major Challenges and Constraints. A century of mining has stripped four-fifths of the total land area. The island is surrounded by a coral reef, exposed at low tide and dotted with pinnacles. The reef is bounded seaward by deep water, inside by a sandy beach. Landward from the beach is a 150–300m wide fertile coastal strip. With porous soils and uncertain rainfall, this area offers limited opportunity for expanded agricultural production.

Land tenure is the most critical consideration relating to the practicality of implementing programs for the rehabilitation and or development of resource (agricultural) based initiatives. Settlement problems are exacerbated by a land tenure system that is made up of some 630 irregular sized and shaped pieces of land, some less than a metre wide and only a few square metres in area, which do not appear to relate to any ordered plan or access rights.

The land problem is further aggravated by a joint ownership system where many individuals hold “a share” in a piece of land which may be, as in one case, as little as an 1/1008 interest. As well, a consensus has to be achieved among owners before development can proceed.

With a growing population and fragmentation of land ownership, as a result of inheritance, attempts to use land for building or agriculture can result in disputes between owners of a land portion as to who should have the use of it. These disputes reduce the value of the amenity, to Nauruan life.

Similar issues relate to water rights. Water is owned by the owners of the land upon whose land the opening to the well is found. The water recovered from the well belongs to the land owner who can allow others access to the well as thought fit. The fact that the water might percolate from below the land of another owner is not relevant (even if known). The main consideration and matter is access. As a result the siting and development of tube wells (bores) in order to provide a reliable water supply will be the subject of ownership disputes similar to those relating to land.

The area of land potentially available for agricultural purposes is small. Availability and sustainability is constrained by plot size, soil type, proximity to housing and other alternate use. This is further constrained as a result of land tenure conflicts and water rights. Much

Bottomside land has been used for activities related to phosphate mining, residences and public use.

Although estimates can vary depending upon the criteria used, there are approximately 100 ha of vacant land, which could be used for agricultural purposes. The 14 ha around the Buada lagoon is perhaps the most fertile. In comparison some areas have already been subject to building, and will require rehabilitation (removal of concrete, road gravel, building rubbish, car bodies, rusting and derelict machinery, other unused buildings and obstructions).

Land is fragmented and often polluted. It is relatively infertile, has poor water holding capacity and narrow available water range. Irrigation, if available is rudimentary and will rely on a potentially brackish underground water resource or a fragile rainwater collection system. The use of fertilisers and composting is not common and it is expected that the soils will suffer major deficiencies Potassium and Nitrogen. Minor trace element deficiencies can be expected and heavy metal toxicities have been predicted. Given resources these potential problems can be identified and rectified. However there is insufficient land, even in the most optimistic scenario, to provide all but a supplement to Nauru's food requirements.

Current Nauruan lifestyle, developed over an extended period of excesses associated with the wealth brought about by phosphate exports, has been largely divorced from the land and sea. The will to till the soil and husband crops and animals has largely disappeared from the general populations. And so have the soils through phosphate mining.

Inadequacy of bore water restricts its use for domestic use although controlled limited use of subsistence gardening has potential. Rainwater catchments are used to supplement bore water although frequent droughts make dependence on this source risky for commercial operations. FAO recently completed a study into the feasibility of setting up a hydroponics system for the production of vegetables. Insufficient availability of water was identified as one of the most limiting factor.

Various crop pests e.g. two exotic fruit fly specie and *Brontispa* have been cause for concern due to destruction to the small amount of fruits and vegetables in the island and to coconuts, respectively. Previous interventions by an FAO regional project on fruit flies eradicated one of the fruit flies, although new incursions have occurred. An FAO TCP project to control the *Brontispa* coconut pest is currently being executed.

Strategic Options. At the 1994 Small Island States (SIDS) Conference on Sustainable Development, the Nauru Government announced plans to rehabilitate the island. The out-of-court payment pledge of US$8 million each by Australia and New Zealand is expected to assist in this exercise. Once the rehabilitation effort gets underway and in the absence of phosphate exports, more meaningful development in the area of agriculture can be planned and executed.

A recent Food Security Assessment for Nauru, undertaken by FAO and AusAID, made the following concluding remarks: "Quantification of the level of supplementation of the food requirements by local activities as food gardens is not possible, given that this practice is uncommon, and will be limited by land availability and water rights. Measures to alleviate these problems … include education programs within schools to improve awareness of the necessity to produce local food, mobilization of community groups to train the families for food production activities, and the provision of propagation materials for home garden activities. A food deficiency crisis will occur within the next year(s) unless appropriate arrangements are put in place".

In line with the above conclusion, small-scale production of vegetables and tree crops can be encouraged and effort to improve productivity made, targeted at the coastal strip. Furthermore, a farming system based on growing suitable crops on medium largely comprising

compost in - for example, half drums and wooden boxes - can be piloted to provide nutritious base food and to help get the population into a self help mode that could underpin sustainability.

C. Project Interventions: Income Generation Activities

I. Pilot Household Food Garden Project

On a pilot basis and led by households, increase food production through developing farming systems at the household level appropriate to Nauru's environment and society. The purpose of the project is to evaluate and develop household farming systems for Nauru. Three food production gardens each of approximately 200 square meters in each of 14 districts will be developed and evaluated. Also, two nurseries for propagation of planting material will be established and operated.

The local contribution includes: local staff supervising the project, training facilities and office for project staff.

The cost and financing plan are indicative as the implementation and cost details will be worked out in detail with RPMU (see TOR for Project Co-ordinator) and the Nauru Government.

Success Indicators

- Supply of planting materials available to the public
- Increased availability of locally produced food
- Family income generation through marketing of surplus produce
- Access to nutritious fresh foods contribute to improved nutrition
- Potential farmers trained and gain knowledge in appropriate farming techniques

II. Strengthening the teaching of agriculture (farming systems) in primary and secondary schools

The project will improve the food production skills, knowledge and attitudes of Nauruans towards a little-used system for providing food to the household. While the extended family in Nauru has the prime responsibility to impart life skills to the upcoming generations, schools at both primary and secondary levels can play an important supporting role. The project will strengthen the teaching of agriculture with an emphasis on household farming systems, taught in the primary and secondary schools of Nauru. This will involve developing curricula for primary and secondary schools, developing teacher aids, training teachers and initiating teaching.

Local contribution include: local staff / teachers and schools.

Success Indicators

- Increased awareness of farming systems suitable for local conditions
- Increased involvement of households in household backyard gardening

NIUE

Capital:	Alofi
Land Area (km^2)	259
Sea Area/EEZ (km^2)	390,000
Islands (No.)	1
Population (No.)	1,900
Annual Growth (%)	-3.1
Density (inhabitants/km^2)	7
Rural Population (% of total population)	68
GDP (US$ million)	6.9 (1991)-
Agricultural GDP (% of total GDP)	34
GDP per caput (US$)	3,295 (1991)
Currency:	New Zealand Dollar

A. General

Niue Island is 200 miles east of the Tonga Group, 300 miles south of the Samoa Group and 600 miles west of the Cook Islands Group. Although but a single island, it is 8,000 acres larger than the combined area of all the islands of the Cook Islands Group. The island is rhomboidal in outline, 11 miles wide by 13 miles long, with a coastline of 50 miles encompassing an area of 64,900 acres.

Niue Island is an uplifted atoll, the largest in the world. Its centre - the site of a former lagoon and now a plateau of gently undulating relief - is completely surrounded by a narrow rim, the "Mutalau reef", and then sloping down a moderately steep incline to the sea shore. The soils are characteristically thin, with exposed coral-reef limestone outcrops on arable land almost everywhere.

The climate is tropical – hot and moderately wet - with cooling southeast trade winds and occasional storms. Rainfall averaging 80 inches varies widely from year to year. The wet season extends from November to April and the dry season from May to October, although in some years there may be little difference in rainfall between the two seasons. Mean monthly temperatures range from 70.2 degrees Fahrenheit to 80.8 degrees with an annual mean of 76.5 degrees.

Economic development heavily sponsored by the New Zealand Government has focused on agriculture and associated processing. Government produced the Niue Concerted Action Plan (NCAP) in 1988 aimed at "maintaining and developing a permanent living community". Despite the efforts through the NCAP, depopulation and economic decline continued. New Zealand's economic philosophy evolved to espouse tougher policies and her assistance particularly in support of the recurrent budgets was reduced. The DAFF was restructured in 1990 with substantial reductions in staffing.

A number of adverse events disrupted development and significantly weakened the economy. These included the depopulation of Niue, severe disruptions to airline and shipping schedules and Cyclone Ofa in February 1990. This slow down in development led to the formation of the Niue Review Group (NRG). The latter's 1986 report formulated the objective of aid assistance as "maintaining and developing a permanent living community".

Significantly, it was accepted that this did not necessarily mean that a "viable economy" would evolve.

In response to the NRG report, the Niue Concerted Action Plan (NCAP) was established in April 1988. Compared to previous aid efforts, this plan placed greater focus on long-term development projects, some of which – such as land titling and forestry – still continue.

However, despite the efforts through the NCAP, depopulation and economic decline continued. The New Zealand economic philosophy evolved to espouse tougher economic policies and the questioning as to why even the modest objectives of the NCAP were not achieved. New Zealand assistance, particularly that for Government recurrent budget support, was subsequently reduced. The department of agriculture was restructured in 1990 with drastic reduction in staff numbers.

B. The Agricultural sector: Constraints and Strategic Options

Agriculture and the Economy

Land Use, Farming Systems and Institutions. Agriculture in Niue is based on shifting cultivation normally with 8-10 year periods of fallow between crops. Where the fallow period has been repeatedly reduced to 3-5 years, fertility had declined so markedly that soils were no longer capable of producing worthwhile crop yields.

Planting of Taro is undertaken throughout the year. Bananas are mainly planted from towards the end of the dry season from August to the end of December. Kumaras and Yams are mainly planted after Christmas although some families prefer to plant Yams in September. Taro and Bananas are harvested throughout the year. The main Breadfruit season is from February to April.

Major Challenges and Constraints. Niue faces the challenges of a small local market, lack of scale, geographic isolation from overseas markets which results in transport and post harvest problems, brain and labour-force drain and lack of effective and efficient services. Niue agriculture confronts significant risks associated with cyclones and droughts. Niue is facing a formidable task in development because of the continuing depopulation of the island. Niue's population has been declining from 5,200 in 1970 to 2,531 in 1986, to 2,239 in 1991 and to 2,088 in 1997.

In agriculture, the problem of Niue Island remains the need to evolve a more permanent system that does not damage the very restricted natural resources of the island. Niuean soils are generally shallow, interspersed by coral rock outcrops, moderate to high alkalinity and deficient in potassium, nitrogen and zinc. These limitations have made long periods of fallow between crops, necessary.

The local market is made up of about 2,000 persons with perhaps no more than 300 under fully paid employment - in addition to a small number of visitors (mainly Niueans residing overseas). There is no reason to believe that the population will substantially increase in the foreseeable future. Export of agricultural produce is constrained by the infrequency, unreliability and expensiveness of shipping and airfreight. Lack of market research also constrains marketing.

On the production side, the age range of persons permanently engaged in farming on Niue is narrowing into the older group. In this regard, a cause for concern is that school leavers have not shown appreciable interest in taking up farming as their preferred careers.

Strategic Options. On the positive side, there is an abundance of accessible arable land per capita of population, as consequence of the depopulation. The climate is favourable for tropical agricultural and horticultural purposes. Furthermore, because of her geographic isolation, there is a reasonably low number of exotic pests and diseases of plants and animals introduced to the country.

The main opportunities for Niue agricultural production lie in developing export commodities for which it has comparable advantages. Niue has comparative advantage for its staple crop, Taro, on account of Niue owning far more cultivars (34) than does any of her neighbouring Island states. This diversity provides good latitude for overcoming pests and diseases that may be introduced as has devastated Samoa's taro industry. In terms of quality, the Niue Taro is considered the best in the Pacific. Its foreign exchange earning potential has not been fully realised.

To reach its potential in the Taro trade, Niue would need to improve productivity in the field, quality of the produce and marketing efficiency. Effective DAFF research and extension work would improve productivity and quality while support to the NGA and improvement to shipping schedules would improve both quality of produce and efficiency in marketing.

Major opportunities also exist for the development of commodities that target niche markets for low volume but high value products. In this respect the current effort to produce Vanilla, Kava and Nonu are commendable. Aloe Vera and spices, including, Ginger, Chillies and black/green Pepper, are other commodities in this category. Production of fresh fruits particularly Lime, Passion fruit and Guava etc. has good export potential.

Small-scale cattle production (tethered dual-purpose breeds) represents a good opportunity as cattle fit in well with the Niue farming system. Over-sowing grass and legume seeds on fallowed land would provide the basic feed requirements of the cattle. Supplements can be provided through a cut-and-carry system based on Elephant Grass or similar grass specie and through the provision of feed blocks.

C. Project Interventions: Income Generation Activities

I. Integrated Pest Management and Bi-wall Drip Irrigation for Food Security

The primary food crops grown by Niue farmers are Taro, Banana, Sweet Potato, Vegetables (tomatoes, cabbages, bele etc.) and mixed tropical fruit trees. The main pests and diseases that constrain quality production of these crops are: for Taro, green aphids, leaf hoppers and red mites, for Pineapples, mealy bugs and ants, for Bananas, black sigatoka leaf spots, for Kumara, Kumara hawk moth caterpillars, for common vegetables, catface of Tomato fruits and target spots of leaves, fruits, fruit cracking during rainy seasons.

Niue has little technical expertise in IPM but the research/extension staff are willing to learn. The assistance will involve: training of key national staff in IPM and crop scheduling to avoid certain pests and diseases including nomination of resistant variety selection; organising farmers field studies focusing on Ecologically Based Pest Management (EBPM); and assisting in setting up an IPM strategy, crop scheduling and planting guide to ensure sustainability of support to village farmers.

Bi-wall drip irrigation is relatively low cost modern technology, successfully adapted to cash cropping by suit small rural farming communities in Cook Islands and Samoa. Field

observations in these countries showed that combined IPM approach and drip irrigation can double or triple crop production and significantly improve quality of the produce.

This project seeks to replicate success achieved in other countries and draw on the specific experience available in the region to assist Niue farmers.

Local contribution will include: local staff to assist in implementing the project, office space; storage of project materials, supplies and equipment; security to project belongings.

Success Indicators

- Increased production of good quality food crops;
- Improved food security;
- Increased export of good quality fresh agricultural produce;
- Increased employment in the farming sector.

II. Mutahefonua Group Shredder/Mulcher for Organic Production

MUTAHEFONUA consists of a group of four families that practices mixed-farming. The group has a long-term objective of encouraging other families to adopt sustainable farming methods by integrating traditional and improved farming practices. Activities include cash cropping and raising livestock involve all family members. Combined family effort occurs for certain tasks like pruning trees, land preparation, marketing and procurement of planting material.

Families each own a standing plot of coconuts, vanilla and taro, nonu, lime and vegetables. Livestock, predominantly pigs but including a few head of cattle also occupies part of each holding. The group recently erected vegetable fences to reduce damages by feral pigs and chicken is currently expanding their vanilla plots to be inter-cropped in future with Nonu plants (support plants for vanilla) and hybrid coconuts.

The project will purchase a mechanical shredder/mulcher to assist with the group's efforts to integrate organic farming with the methods and practices currently employed. The group has been using chicken and pig manure mixed with compost to raise vegetables. Chicken manure is currently insufficient and the group is considering raising the pig pens off the ground or constructing concrete floors to facilitate manure collection. The group currently borrows a shredder from the Department of Agriculture.

The project will help the group acquire an appropriate shredder/mulcher to ensure constant supplies of organic matter for compost making. Prunings from support trees, dry coconut leaves, husks etc. could thus be more efficiently used. The project will also supply adequate support for operation of the shredder for one year.

The local contribution includes: needed labour, local staff supervising the project, training facilities and office for project staff.

Success Indicators

- Increased supplies of fruits, vegetables and other locally produced food crops to reduce reliance on imported foods, reduce drain on foreign earnings and improve health of local population;
- Diversify Niue's agricultural production with potential to export regular supplies of organic produce to niche markets;
- Assist in ensuring sustainability of Niuean soils; and
- Encourage youth and women to participate in meaningful employment.

PALAU

Capital:	Koror
Land Area (km^2)	487
Sea Area/EEZ (km^2)	600,900
Islands (No.)	343
Population (No.)	19,100
Annual Growth (%)	2.2
Density (inhabitants/km^2)	39
Rural Population (% of total population)	29
GDP (US$ million)	143.8 (1996)
Agricultural GDP (% of total GDP)	5
GDP per caput (US$)	8,124 (1996)
Currency:	United States Dollar

A. General

The 343 islands of the Republic of Palau are diverse in geological origin and include volcanic, low platform, high platform, and atoll types. The Republic includes the islands of Koror (the administrative centre and capital), Babelthuap (the largest island in terms of land mass, making up 78% of Palau's land area), Angaur, Peleliu and several coral outer islands including Sonsorol, Tobi, Pulu Anna, Helen's Reef and Merir to the southwest, and Kayangel to the north. The westernmost islands of Palau are closer to Indonesia that they are to Koror, which comprises only 4% of the land area but is home to more than 70% of the population. Politically, the country consists of 16 states vested, *inter alia*, with inshore fishery management responsibilities and a national government with offshore responsibilities.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture and the Economy: Over the past 25 years Palau's economy has grown rapidly from a GDP estimated at US$14.5 million in 1975 to US$144 million in 2000. Along with this growth has come a significant shift in the composition of the economy away from primary production towards services. Agriculture and fisheries constituted in 1999, 3.8% of the economy (down from 25% in 1990) while services constitute 71% of the economy.

Under-representation of informal production greatly complicates analysis of agriculture productivity. A 1996 survey placed the value of the informal sector (consisting primarily of agricultural products) at US$5 million or twice the value of agricultural products recorded in official economic statistics. Clearly, there is a great deal more agricultural productivity in Palau than recorded officially. Despite this, statistical measures clearly demonstrate that agriculture is declining in importance in comparison to other economic sectors, as evidenced by: share of the GDP, market share, share of total employment, earning per worker and land under cultivation.

The challenge before Palau is to develop a sustainable economy in which the private sector generates sufficient revenues to finance public services without need for external operational subsidies. Equally important, development must be undertaken in a manner, which

maximises the benefits, which accrue to Palauans while sustaining the environmental and cultural resources for future generations.

Land Use, Farming Systems and Institutions. Traditionally, Palauan agriculture featured an environmentally sustainable multi-storey agro-forestry system in which tree crops provided a protective canopy, which supported the intensive production of 40-50 plant varieties. The Palauan system was broadly similar to traditional agriculture systems elsewhere in Oceania. Traditionally, every Palauan woman had a garden. Female-produced agricultural products together with male and female harvested marine and forest products provided a self-sufficient food system with in-built security against natural and economic disasters, pest intrusion and old age.

Today, remnants of the traditional system still remain although less than three per cent of land is now under agro-forestry production. An additional one per cent of land is estimated to be under non-traditional cultivation (e.g. without tree cover). Virtually, all mature rural women and many urban women produce some of their household's food needs through cultivation of a garden or gardens. Typically, a woman will have one or more taro gardens and at least dry land garden for tapioca. The taro gardens most closely resemble the traditional agro-forestry system although contemporary gardens are less intensively cultivated than those of the past. Although traditional methods of composting and mulching are still used, imported agricultural chemicals are also in use. Most crops produced in this informal economy are used for family food and customary exchange. Only small volumes reach the market and still smaller volumes are reflected in official economic statistics.

Agriculture in Palau appears to be entering an 'extended dualism' phase. That is, crops are produced for subsistence and for sale in typical dual-economy mode, but traditional crops of importance to both social activities and subsistence, principally taro, are also now often produced with the assistance of hired, foreign labour.

Subsistent crop production is the predominant agricultural activity with the main crops being taro, cassava, sweet potato, banana and coconut. Betel nuts and betel pepper leaf are also commodities of considerable importance. 'Backyard' chickens and pigs are also important. Commercial agricultural activity is limited.

Exploitation of Palau's living marine resources is diverse. Most fishing is done within the lagoons and on the outer reef slopes, and is commonly conducted on a subsistence or semi-subsistence level, with a portion of catches finding their way to markets in the capital, Koror. Techniques used for subsistence and small-scale commercial fishing range from simple hand-collection of beche-de-mer, sea urchins, clams and other species at low tide, often by women and children, to hook-and-line fishing, underwater spear-fishing, net fishing and trolling, all of which are conducted almost exclusively by men. Fishing licences are sold to foreign fleets.

Major Challenges and Constraints. An important reason for the continuing decline of agriculture is that with few exceptions the cost of local production exceeds the cost of equivalent imported foods. This is especially true with staple crops - taro, tapioca and sweet potatoes - which cannot compete price-wise against imported rice.

Other contributing factors include: the changing roles of and expanding opportunities for women, Palau's traditional agriculturists; shortage of agricultural labour especially in the rural areas which are populated by the very old and the very young; changing attitudes among

young Palauans who view agriculture as a livelihood option of "last resort; land tenure disputes and limited access to prime agricultural land on Babeldaob; colonial policies in the post-WWII era, which favoured investment in urban Koror over rural investment; recent investments in agriculture favouring western models of male-dominated mono-cropping over the traditional female-dominated agro-forestry systems; and fruit fly infestations which decreases production and has virtually eliminated agricultural export.

Commercial agricultural and forestry production requires substantial capital investment and the financing of that investment. Funds available for equity investment are limited and foreign investment is restricted by the inability of foreigners to own land. Loan funding through the domestic banks is constrained because of legislative interest rate ceilings and lack of ability to acquire security over land titles. The National Development Bank lends little to agriculture because of more lucrative lending to building construction given its ability to access of land title.

The growing use and dependence on, imported foods has diminished the use of traditional systems. As a result of largely Compact-driven rises in real cash incomes, a generation of Micronesians has grown up without having to depend on island food production and the know-how is not being passed on.

Outer Island transport is severely limited. The national road system is still under construction and many large tracts of arable land are not easily accessible. There is a general lack of feeder roads.

National development plans and policies are largely not followed. Most contain no defined roles for participation of the public, no community involvement activities and lack step-by-step implication schedules.

In the area of crop protection, the constraints are: lack of agricultural knowledge and farm management skills; weeds; and erosion hazard –land in Palau mostly have slopes greater than 6%. In terms of animal production, most feed is imported, and the cost of importing feed makes it cheaper to import pork and chicken than to raise them here.

The current market system is cumbersome and problematic. Little information is available about returns from agriculture, nor is there any provision of formal market information e.g. production and price trends. There has also been little or no thorough investigation into export market potentialities.

Perhaps the greatest single constraint on development of agriculture in Palau relates to human resources. Agriculture is considered to have low status, to be hard work, and to be typified by low returns. Palau is seriously lacking in agriculture professionals. Less than a handful of Palauans have higher degrees in agriculture and even fewer are working towards such degrees.

Strategic Options. Available arable land in Palau is in excess of existing needs and those of the immediate future. There is considerable room for expanded production of vegetables and fruits, staple crops, trees and tourist attractions such as botanical gardens. Palau is blessed with a uniform mild climate, in temperature and rainfall and is outside the typhoon belt. Multiple crops may be grown at the same location. Traditional knowledge of agriculture, microclimate and ecology is widespread and there exists a strong tradition of agro-forestry.

There is good potential for establishing a local fruit industry to improve the nutrition of the population and to nurture an export industry. Furthermore, appropriate downstream processing to serve local demand and for export offer viable option for development.

Local production is currently limited by a rain-fed traditional system. There is good potential for adoption of water harvesting and irrigation and for increased use of land preparation machinery and of labour saving plant and equipment and techniques e.g. weeders, taro cookers etc.

Services provided to support agricultural production should be strengthened. Scholarships for the agricultural sector should be provided and the financial support for the sector, strengthened. The extension services should be expanded and decentralised and an agricultural information centre should be established.

It is imperative that the feasibility of establishing a central market for Palau is investigated and land and adequate resources made available for establishing such a market.

C. Project Interventions: Income Generation Activities

I. Development of Value Adding to Improve Food Security

This project seeks to increase the production and consumption of value added products from locally grown food crops through appropriate capacity building. Value adding to locally grown food is considered as one of the potentially most sustainable livelihoods available to rural residents. And the proportion of impoverished and vulnerable households is three times greater in rural areas than the urban centre. A major characteristic of the heads of these households is they are mostly female. Over 50% of rural households are economically disadvantaged.

The value added products selected to be developed will be based on the criteria: (1) existing market demand; (2) existing knowledge and skills in the production of the raw materials; (3) low investment in supplies and equipment and (4) relative ease to process. The products currently include: snack food products such as chips from root crops and ‘candied’ fruits; fruit juices and ‘health’ drinks; jam, jelly, chutney, etc. from fruits; dehydrated fruits; and, ‘Oriental’ pickles and other preserves.

A recent value adding mission noted that a small processing unit spu (kitchen type) is needed for training and demonstration purposes. There is also a need to introduce and demonstrate simple, inexpensive time saving equipment and other tools to bring potential food processors up-to-date and to enable them to produce more efficiently and compete with imports (which are using similar equipment). Problems related to packaging are caused by the hot and humid climate and limited local selection of available packaging materials. These problems have resulted in the closing of at least three value-adding enterprises. There is thus need to introduce and demonstrate suitable packaging. Furthermore, quality control equipment and other tools for health reasons, e.g. tools that measure sugar, acid, etc, need to be introduced and demonstrated.

This project proposes to undertake capacity building through a two-step approach. A consultant will be available through a separate FAO project. The first step is the training of a

core team of trainers, in assessing value adding opportunities and techniques and value adding technologies. The second step is for the national trainers to conduct a national training programme for interested farmers, processors and entrepreneurs in value adding technologies.

The local contribution includes: local staff supervising the project, training facilities and office for project staff.

The cost and financing plan are indicative as the implementation and cost details will be worked out in detail with RPMU (see TOR for Project Co-ordinator) and the Palau Government.

Success Indicators

- Improved income and food security of participating farmers and processors through diversification;
- Sufficient trained personnel in value adding, food hygiene and sanitation, to build the critical mass necessary to sustain a value adding industry;
- Appropriate equipment, supplies, tools and facilities available for purposes of experimentation and development of new value added products;
- Tourists and the general public have a greater supply of nutritious locally processed products;
- Contribute revenue to the national economy and financial saving through improved health and import substitution;
- A national cadre of trainers to train producers, processors and entrepreneurs;
- Provides on-going assessment of value adding opportunities;
- Provides a plan of action for developing value adding; and
- Provides a plan for the continued transfer of skills in value adding.

TUVALU

Capital:	Funafuti
Land Area (km^2)	26
Sea Area/EEZ (km^2)	757,000
Islands (No.)	9
Population (No.)	9,900 (2000)
Annual Growth (%)	0.9
Density (inhabitants/km^2)	381
Rural Population (% of total population)	58
GDP (US$ million)	11.9 (1995)
Agricultural GDP (% of total GDP)	24 (1995)
GDP per caput (US$)	1,259 (1995)
Currency:	Australian Dollar

A. General

The island group consists of nine very low-lying and narrow coral atolls totalling 26 km area. Population has been estimated in 2002 at 11,146 and growing at the annual rate of 1.4%.

In 1974, ethnic differences within the British colony of the Gilbert and Ellice Islands caused the Polynesians of the Ellice Islands to vote for separation form the Micronesians of the Gilbert Islands. The following year, the Ellice Islands became the separate British colony of Tuvalu. Independence was granted in 1978.

The country has no known mineral resources and few exports. Government revenues largely come from the sale of stamps and coins and worker remittances. On average, fewer than 1,000 tourists visit Tuvalu annually. About 1,000 Tuvaluans work in Nauru in the phosphate mining industry although Nauru has begun repatriating these workers as phosphate resources decline. Substantial income is received annually from an international trust fund established in 1987 by Australia, New Zealand and UK and supported also by Japan and South Korea. This Fund has grown from an initial US$17 million to over US$35 million in 1999.

The US government is also a major revenue source for Tuvalu, with 1999 payments from a 1988 treaty on fisheries at about US$9 million, a total, which is expected to rise annually. The government is pursuing public sector reforms including privatisation of some government functions and personnel cuts of up to 7%.

Beachhead erosion because of the use of sand for building materials; excessive clearance of forest undergrowth for use as fuel; damage to coral reefs from the spread of the Crown of Thorns starfish are major causes for concern for sustainability of the Tuvalu environment. Tuvalu is also very concerned about global increases in greenhouse gas emissions and their effect on rising sea levels, which threaten the country's underground water table. In 2000, the government appealed to Australia and New Zealand to take in Tuvaluans if rising sea levels should make evacuation necessary.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture in the Economy. Tuvalu consists of densely populated and scattered group of nine atolls with very poor coralline soils. Subsistence farming and fishing are the primary economic activities. Since there are no streams or rivers and ground water is not potable, most water needs are met by rain catchments systems with storage facilities.

Land Use, Farming Systems and Institutions. Agriculture or agro-forestry occupies an important part of the daily activity of the Tuvalu people and involves the cultivation of a number of crops and raising a limited number of pigs and chickens. Crop production is primarily subsistent, crops comprising coconut, babai (swamp taro), breadfruit, pandanus, banana, pumpkin, sweet potatoes and papaw. Vegetable home gardening had been introduced and well supported by previous externally projects, notably the Atoll Farming Systems component of the European Union funded Pacific Regional Agricultural Programme (PRAP).

As in Kiribati, the traditional farming system is characterized by groves of coconut trees with various layers of crops inter-planted between the trees. Family owned pits in which swamp taro and giant taro are cultivated, are found all over the islands and atolls. The use of the pits facilitates the plants' ability to access the thin water lens. The coconut tree dominates agricultural production. It provides a daily component of the diet (food and drink) as well as household cash.

Subsistence and small-scale artisanal fishing are conducted from traditional canoes driven by sail or paddle, from plywood canoes powered by outboard motor and from larger outboard-powered skiffs. Most inshore and coastal fishing activity is for subsistence purposes.

The country has no forest resources as such but only a few vegetation types. These (mostly in scattered patches) although restricted in area and density play important roles such as: preventing coastal erosion, maintaining soil fertility and the nutrient cycle, providing food, fuel-wood and building material for the local people.

Major Challenges and Constraints. Tuvalu has a limited natural resource base, especially land and fresh water for development. Tuvalu's atoll soils are generally thin, coralline and lacking in plant nutrients - particularly Nitrogen, Phosphorus, Potassium and Calcium - and micronutrients. The narrow islands and islets are over-exposed to wind and salt sprays. There is no running water and the fresh water-lens is thin and highly susceptible to pollution by inorganic farming practices and intensive livestock production.

The atolls and islands are widely scattered and sparsely populated. The domestic market is thus small with little potential for economies of scale. Sea and air transport between atolls/islands, is inadequate both in suitability and regularity. Access to major international markets is expensive and hard to arrange. The local and overseas telecommunication services are unreliable and expensive. There are no established fresh produce markets at the urban centres.

The local people generally have limited understanding and experience with business concepts and practices. The labour force lack job skills needed to support economic development. In terms of improving nutrition, it has been difficult to persuade the local population to consume introduced vegetables, particularly the leafy types. On the other hand,

consumption of introduced starchy foods like rice and flour has overtaken that of their locally produced counterparts.

Strategic Options. Tuvalu's traditional farming system is still widely adopted across the atolls and there exists a wealth of indigenous knowledge on viable atoll agricultural production technologies. Added to this are information that have been generated through externally funded projects including the UNICEF home gardening project, EU PRAP Atoll Farming Systems project as well as the now completed SPC/FAO agro-forestry project.

Experience gained and information gathered from these projects have led DOA to concentrate at the present time on opportunities for increased production of tomatoes, bananas, cabbage, cucumbers, papaya and eggplant. Emphasis is being put on encouraging wider adoption of improved techniques, applying effective environmentally friendly pest control methods and improved marketing organization and skills.

C. Project Interventions: Income Generation Activities

I. Development of Home Gardening for Food Security

The project will upgrade the central nursery at Funafuti and construct crop nurseries at each of the seven outer islands to support food gardens for the households of Tuvalu. The project will assist to establish and support selected home gardens (4 in each outer island and 12 in Funafuti) to promote home gardening and act as demonstration sites for the training courses.

The Department of Agriculture will upgrade the central nursery and construct the outer island nurseries and will be responsible for all nursery operations. The Department of Agriculture will also be responsible for establishment of the demonstration home gardens.

Households will own the demonstration home gardens. The Ministry of Home Affairs will give the Kaupule the authority to conduct, monitor and evaluate the project and report to the Ministry on progress. Government will act as the financier and provide technical advice to home garden owners through the Department of Agriculture.

The local contribution includes: Local staff supervising the project, storage and training facilities, land and labour for nurseries and office for project staff.

Success Indicators

- Increased supply of planting materials for distribution to farmers;
- Increased domestic food production;
- Savings in foreign exchange from reduction in imports;
- Family income generation through marketing of surplus farm produce;

- Easy access to fruits and vegetables will in turn results in consumption of nutritious foods thus contribute to improved nutrition;

- Farmers trained and gain knowledge in alternative farming techniques;

- Expanded employment opportunities in the farming sector as a result of the enhanced income generating capacity of the project participants; and

- Enhanced Income source for the local farmers.

D.2 Strengthening Agricultural Trade and Policy - US$395,000

D.2.1 Rationale

To have the greatest impact on enhancing food production and security, the agriculture sector has to operate under an enabling environment of appropriate policy and trade instruments. This is all the more important, in a changing world of increasing globalisation and freer trade. Although such changes in trade can bring new opportunities for export and product expansion in developing economies, through tariff reductions and duty free access to international markets etc, these do not happen automatically and need to be developed. Conversely, more free trade can also bring additional problems such as threats to competitiveness of local produce in domestic markets and dumping of sub-standard imports, which has already affected the health of the population in a number of PICs negatively.

There are therefore two conditions for countries to meet emerging challenges and opportunities. Countries need to (i) have effective agriculture policies in place to ensure that national resources are deployed as optimally as possible, whilst still safeguarding their environments and (ii) build national capacity and awareness in domestic and international trade (bio-safety, customs and quarantine), so that they are compliant with internationally accepted standards such as Codex Alimentarius and WTO legislations and agreements. In addition, producers also need to have access to information on policy priorities and product safety and demand to make them more price and market responsive. Collectively these measures can increase efficiencies in the sector and make it more vibrant.

Despite these requirements, The Pacific Island Countries remain significantly constrained by weak human and institutional capacity, a problem exacerbated by size. With the exception of Papua New Guinea, for example, all the PICs have populations of well under one million, which has meant that a small and relatively fixed number of national staff have to deal with an increasing volume and complexity of trade and policy issues. Investments in expanding and enhancing capacity and human resource development, therefore, would have significant returns. However, as stated above, it is not possible that one project alone can address all the factors required to promote an enabling environment. Organisations and donors, necessarily have to work in partnership in complementing each others' activities to have the greatest impact. Within the funds available, therefore, a strategic choice has been made to support a key aspect of capacity building under trade facilitation related to establishment of sanitary and phytosanitary commodity pathways for agricultural exports. An additional benefit would be that the component would be implemented by SPC, which has vast experience of development in the region and is already an established partner of FAO in the Region.

D.2.2 Establishment of Sanitary and Phytosanitary Pathways for Exports - US$395,000

Background

Trade facilitation (both imports and exports) is an important dimension of contemporary quarantine (bio-security) services. Globally, under the impetus of the WTO Sanitary and Phytosanitary (SPS) Agreement, quarantine services are changing from being purely regulatory authorities to becoming services which protect natural resources, animals and humans from pests and diseases and, despite the threats posed by increased trade and tourism, they are also expected to facilitate, not hinder, trade.

The pest and disease status of the Pacific, including New Zealand and Australia, is low relative to other regions. However, as much of the region's environment evolved in isolation of pests, it is vulnerable to incursions. This low pest status increases trade competitiveness. Importantly, the island nature of the region and large ocean distances mean that quarantine services can be effective. However, bio-security services need additional capacity to facilitate increasing trade and tourism while effectively protecting Pacific environments, agricultural resources and the public from new pest incursions.

Capacity development in trade facilitation in bio-security services in PICs will require, to some extent, legislative reform and the adoption of operations and compliance procedures that are harmonized with that of trading partners and international quarantine standards.

Traded commodities will need to comply with recognised sanitary and phytosanitary standards if imports are not to be a threat to national bio-security (animal, plant and human health) and exports are to comply with import specifications required by importing countries.

Sanitary and phytosanitary standards adopted by WTO member countries, and by association, all parties to the PACER, will be based on the minimum standards under the WTO-SPS Agreement set by international standards committees recognised by the WTO. If justified, the standards adopted by national authorities may be higher or lower than the minimum SPS standard.

Sanitary and phytosanitary standards are specifications related to the pest status of products of plant origin (timber, crops, fruit, seaweed, seed, flowers, handicraft), pest and disease status of products of animals (dairy, meat, fish, coral, shells) and contaminants in food and feeds (pesticides, heavy metals, bacteria, mycotoxins). International sanitary and phytosanitary standards are developed by standards committees of the International Plant Protection Convention (IPPC), the International office for animal diseases (OIE) and Codex Alimentarius.

The Priorities of Regional Bio-Security Related Trade Facilitation Programmes

The regional capacity building programme in quarantine operations and trade facilitation are based on global standards adopted by IPPC (CPM), OIE and Codex. The SPC Plant Protection and Animal Health Services respectively deal with the animal and plant health aspects of bio-security.

Codex standards that apply mainly to chemical residues and microbiological contaminants of food and animal feeds have hitherto not been a focus of much capacity building in the region. Clearly, they will have to be addressed as a part of the export and import commodity pathways to safeguard animal and human health and to comply with import standards of countries to which PICs wish to export.

The following list of capacities are the minimum development requirements in PICs to ensure their quarantine services are able to facilitate trade and effectively minimise the risks posed by increasing trade and tourism:

- Quarantine legislative reform providing for the implementation of standards, risk based market access procedures and appropriate enforcement;
- Development of manuals and information systems that complement new laws and assist with standard procedures and technically sound trade decisions;

- Provision of regional networking and information databases;
- Establishment of commodity pathway skills to regulate SPS export standards;
- Capacity building and assistance with import risk assessments and market access documentation; Maintenance of surveillance and emergency response procedures;
- Updated pest list on which to base trade decisions;
- Pest management to minimise the impact of pests and diseases on production and quality of export commodities; and
- Improvements of post harvest quality of export commodities.

All trade partners of PIC members of PACER have disease, pest and food safety standards (SPS standards) in place or currently being established by national authorities. Traded commodities must comply with these to satisfy commodity import specifications to enter domestic markets. The activity would establish national systems that will ensure that commodities comply with the SPS standards specified and regulated by national authorities in trade destination countries. This will complement another proposed project by SPC (for separate funding) in providing technical support on import-export bio-security, which aims to technically assist countries in applying for market access to national authorities in trade destination countries.

Every commodity has a commodity specific pathway and requires staff specifically trained for that commodity if compliance certificates are to be dependable and acceptable to the export destination authorities who conduct audits of the pathway from time to time. Clearly this pathway can only be established for selected commodities that have recognised export potential in terms of quality and supply. Market research into production, quality and supply potential would precede the establishment of a regulatory commodity pathway.

The scope of the proposed activity is limited to regulatory SPS standards or the post harvest phase of the commodity pathway (see Section B.4). However, a major issue not addressed under this activity is the commodity production cycle which impacts on criteria that are also components of SPS standards. For example, pesticide residues, is an SPS standards issue that relies on pest management practices at farm level being addressed in other SPC and FAO programmes. To that extent this project will complement those activities in the commodity pathway. The production cycle and issues of quality and supply will partly be dealt with supply side activities under component (ii) of the project and by other national programmes working in collaboration with FAO and SPC in plant protection, animal health and sustainable development

Purpose of the Activity

Several PICs already have successful commodity export schemes. In these countries, technical support will be provided for new exports and extending exports to new countries. For countries with export potential, prospects of realising export potential in a competitive trading

environment will be determined. The activity will complement the bio-security (quarantine) laws and border procedures of ACP PIC members currently being addressed by the EU-CROP Regional Economic Integration project. There will be enabling provisions to establish regulatory commodity pathways. Additionally this activity will complement pest and disease management and production management capacity building in PICs conducted under different donor assisted SPC projects which are contributing to building trade capacity in PICs. The specific purpose of the activity would be to:

- Determine short-, medium- and longer-term PICs national export potential and priorities and potential export markets for agricultural commodities conducted with the assistance of PIFS trade commissions and national agencies;
- Establish sanitary and phytosanitary commodity pathways for selected PIC agriculture exports to ensure that they comply with SPS standards in trade destination countries

Inputs to be provided for the activities and outputs will include international consultancy expertise, training and trave.

Results

The principal outcomes of the activity will be:

- Export commodities that comply with the sanitary and phytosanitary standards adopted by national agencies and governments and markets in the trade destination countries;
- Trained quarantine officers to facilitate specific export commodity inspection, certification of compliance with import conditions and to provide SPS audits for export pathways/facilities required by export destination authorities; and
- National export facilitation (SPS compliance) systems under the auspices of the National Trade Facilitation Committees (NTFC).

Activity Budget (D.1.2) is outlined in Annex 1 rows8, 24,32,61.

Success Indicators. The relevant success indicators would be:

- Surveys of commodity production, supply and quality to assess export and market potential for appropriate PICs completed in two years;
- Commodity pathway for all commodities with export potential established by the end of the project; and
- Number of trained staff to monitor SPS standards for all commodities in exporting PICs.

E. INPUTS

E.1 Inputs by the Recipient Government (S)

Government(s) will contribute 30% in counterpart funding to production related activities under the country specific activities of Component (I) and through meeting staff and associated administration and travel costs for National Project Unit, which will direct and coordinate project activities at Country level. Countries allocation will be better defined during inception.

E.2 Donor Inputs through FAO

The details of cost, under the Italian Trust Fund, by expenditure account are indicated in Annex 1, with a summary by component and expenditure category in Table 4 and 5 below.

Table 4. Trust Fund Expenditure by Component and Category

Component	Expenditure Category	Total Cost (US$)
Component I:		
Enhancing Food Production and Security	Expendable and Non Expendable items	3,075,000
Total Component I:		**3,075,000**
Component II:	Personnel	260,000
	Official travel	60,000
Strengthening Agricultural and Trade Policy	Training	60,000
	General operating expenses	15,000
Total Component II:		**395,000**
Project Management Costs		537,168
Project Formulation, M&E and Miscellaneous		140,000
FAO Support Costs		**352,832**
TOTAL PROJECT COSTS		**4,500,000**

Table 5. % Breakdown of Project Costs by Main Expenditure by Category

Expenditure Category	US$	% Cost
(i) Expendable/Non Expendable Equipment	3,105,000	69.00%
(ii) International Consultants	540,500	12.00%
(iii) National Consultants & administrative support	66,148	1.47%
(iv) Travel	174,500	3.87%
(v) Training	60,000	1.33%
(vi) Technical Support Services	90,000	2.00%
(vii) General Operating Expenses	111,020	2,47%
(viii) FAO Support Costs [a/]	352,832	7.84%
Total	**4,500,000**	**100%**
a/ FAO support costs are calculated at 7% on expendable and not expendable procurement, at 13% on all other costs.		

Personnel

The Trust Fund Project will be implemented by FAO through its Regional office for Asia and the Pacific (RAP) in Thailand. The Regional Project Management Unit (RPMU) will be based at the FAO Sub-Regional office for the Pacific Islands (SAPA) in Apia, Samoa. A Project Co-ordinator (Consultant 33 m/m), Assistant Project Co-ordinator (Consultant 33 m/m) and a Secretary (GS 36 m/m G4) will make up the RPMU. The Project Co-ordinator will be a Rural

Development Specialist/Economist with extensive regional experience in development and food security work. The Assistant Project Co-ordinator will be a Monitoring and Evaluation specialist, also with demonstrated regional expertise in agricultural development projects. The Secretary will provide office support. Relevant TORs are attached in Annex 4.

The RPMU will coordinate project implementation in collaboration with the Ministry of Agriculture, or related Ministry, through a national project coordinator to be appointed by the participating country.

FAO Supervisory Technical Services

FAO will provide strategic technical backstopping in the key areas Technology transfer and in the design and implementation of pilot production projects, under Component (I), on the basis of the specific needs that will be identified during the inception phase. In addition, it is expected that a mid term review mission by the Italian Government and FAO will be undertaken.

Consultants

In general the project will use consultants with appreciable regional and national expertise where necessary on a "when actually employed" basis. Payment will be in accordance with competitive rates for national and regional consultants. Recruitment of suitable experts will be in accordance with the specialization outlined in the TOR and be approved and cleared by FAO. TOR, duration and location of consultancies will be determined during inception phase on the basis of the needs identified by the project management and national counterparts.

Equipment

The project will provide both expendable and non-expendable equipment such as irrigation systems, materials and inputs for production enhancing and training activities. In addition, equipment will be provided to the RPMU for establishing the unit. Detailed implementation plans, national pilot activities and identification of inputs and equipment will be developed during the inception stage by the RPMU and national coordinating officers. Country allocations have been listed under BL 6000. On the basis of the needs identified on country level during the inception phase resources may be allocated to consultancy through budget revision.

Training

Training will principally be provided for institutional strengthening under trade facilitation (Component II) and national research and extension services in some countries (Component I). For the latter, costs will be covered under country allocations. This will include the cost of workshop and training courses, travel, materials and daily subsistence allowances.

Travel

Travel expenses for RPMU staff, consultants and FAO backstopping within and between countries will be financed under the project.

General Operating Expenses

GOE will cover miscellaneous office and vehicle operating expenses for the RPMU and project activities.

FAO Support Costs

FAO support costs are charged at 7% on expendable and non expendable procurement (exceeding 40%), at 13% on all other items.

F. RISKS AND ASSUMPTIONS

Any programme of the size, complexity and diversity of this kind is bound to have associated and respective risks. The countries are constrained by problems of small-ness and remoteness, together with extreme diversities in population, natural resources and economic potential. Some have reasonable and well-developed institutions, which are relatively well geared to demands in implementing and running projects whilst others lag and have extremely limited capacities. Any strategies for regional development, therefore, have to be commensurate with these constraints and issues. The RPMU will be crucial in guiding overall project activities, raising awareness and soliciting a high level of country, and local, commitment and support (through NPUs and communities). Without such coordination and motivation the risks of project failure can be high.

Based at SAPA, the RPMU will have close contact with a range of FAO technical expertise with extensive regional and country specific experience, which will be invaluable in project programming and management. In addition, the development and project implementation experience of key institutions and donors in the region (e.g. SPC, EU, Australia and New Zealand) can also provide the RPMU with critical appreciation of what is workable and what is not. It is imperative, therefore, that the RPMU works closely with these institutions.

G. PRIOR OBLIGATIONS AND PREREQUISITES

The main prior obligations and prerequisites would be the agreement and assurance by participating countries to providing inputs detailed under Section E.1 – (inputs by recipient governments).

H. PROJECT MONITORING, REPORTING AND EVALUATION

H.1. Project Reporting and Monitoring

Project Reporting

Quarterly Progress Reports: The RPMU will prepare quarterly progress reports including contributions from the NPMUs. Quarterly reports will be circulated to recipient governments, FAO and the donor government after technical and operational clearance. The reports will outline project progress with scheduled activities during the past quarter, highlight implementation problems and indicate outputs in relation to objectives.

Consultancy Reports: The Terms of Reference of the Consultants will specify, where necessary, the technical document outputs, as a separate reporting function distinct from the general inception or mission reports, which would include conclusions and recommendations. These Technical Reports will

follow set standards with respect to format. Following clearance, the reports will be circulated by the RPMU.

Semi Annual/Annual Progress Reports: The Project Co-ordinator will present Progress Reports to the Meetings of FAO South West Pacific Ministers for Agriculture at their official biennial gatherings. These reports will outline project achievement, implementation problems to be addressed and future strategies for increasing the performance and impact of the overall project.

Inception and Terminal Reports: Within a stipulated time, the Project Co-ordinator will prepare a project inception report, including a detailed and agreed work programme, which is to be approved by the Donor. Likewise, a Terminal Report will be prepared and circulated during the last quarter of the project.

Project Monitoring

Project monitoring will be based on methods and indicators agreed and established by the RPSC, RPMU and FAO. At inception a performance-monitoring plan will be prepared, including selection of key performance indicators and an outline of M & E methodologies to be adopted. A schedule of periodic meetings between the Project Co-ordinator and the National Project Co-ordinators will also discuss results of ongoing project monitoring.

> Activity Budget (H.1) Funds for Project monitoring and reporting will be included under B.6 and the Assistant Project Co-ordinator who will be a Monitoring and Evaluation expert, will oversee the activity.

H.2. Project Review and Evaluation

Project Review and Evaluation

A joint mid-term review by FAO, the Donor and Recipient Governments will be undertaken to review Project progress. Near the end of the project an evaluation mission will be scheduled to assess project achievements and overall impact in relation to objectives. The mission will also propose project follow-up. The organisation, terms of reference and exact timing of reviews and evaluation processes, will be decided by FAO and the donor and recipient Governments.

> Activity Budget. The cost of the mid and end term review and evaluation will be met in the budget under FAO support costs.

I. ANNEXES

I.1. Project Budget

I.2. Logical Framework: Support for the Regional Programme for Food Security in the Pacific Island Countries (RPFS)

I.3. Project Work Plan

I.4. Terms of Reference

I.5. Output Summary of Senior Official Meeting convened to discuss the proposed project

I.6. Indicators and rankings to guide Fund allocations for Country specific activities

I.1. Project Budgets

Description Activity	Unit	Unit Rate	Year 1		Year 2		Year 3		Total
			Quantity	Cost (US$)	Quantity	Cost (US$)	Quantity	Cost (US$)	Cost (US$)
5500 General Service Staff									**54,148**
General Service Salary									
B.6 RPMU Secretary	mm	1,000	12	17,357	12	18,049	12	18,742	54,148
5570 Consultants									**552,500**
5542 International Consultants									**540,500**
D.1.2 Establishment of Sanitary & Phytosanitary Pathway for Agricultural Exports	mm	10,000	8	80,000	9	90,000	9	90,000	260,000
B.6 Project Coordination and Management									
B.6.1 Regional Project Coordinator	mm	5,200	11	57,200	11	57,200	11	57,200	171,600
B.6.2 Asst Regional Project Coordinator	mm	3,300	11	36,600	11	36,600	11	36,600	108,900
5543 National Consultants									**12,000**
B.6 Local Consultant	mm	3,000	1	4,000	1	4,000	1	4,000	12,000
5900 Travel									**174,500**
5684 International Consultants									
D.1.2 Establishment of Sanitary & Phytosanitary Pathway for Agricultural Exports	ls			20,000		20,000		20,000	60,000
B.6 Project Coordination and Management				25,000		20,000		20,000	65,000
5693 Travel STS									
Technical/Operational Backstopping				8,000		8,000		8,000	24,000
5698 Travel Non-Staff									
RPFS Meetings				8,500		8,500		8,500	25,500
5920 Training									**60,000**
D.1.2 Establishment of Sanitary & Phytosanitary Pathway for Agricultural Exports	ls			20,000		20,000		20,000	60,000
6000 Expendable									**3,105,000**
B.6 Project Coordination and Management (Expendable and Non-expendable)	ls			25,000		2,500		2,500	30,000

Country Specific Allocations*									
D.2.2 Country Specific Activities - **PNG**	ls			161,833		161,833		161,833	485,500
D.2.2 Country Specific Activities - **Fiji**	ls			79,387		79,387		79,387	238,160
D.2.2 Country Specific Activities - **Vanuatu**	ls			94,527		94,527		94,527	283,580
D.2.2 Country Specific Activities - **Samoa**	ls			78,850		78,850		78,850	236,550
D.2.2 Country Specific Activities - **Solomon Islands**	ls			137,067		137,067		137,067	411,200
D.2.2 Country Specific Activities - **Tonga**	ls			86,267		86,267		86,267	258,800
D.2.2 Country Specific Activities - **Cook Islands**	ls			66,703		66,703		66,703	200,110
D.2.2 Country Specific Activities - **Federal States of Micronesia**	ls			41,587		41,587		41,587	124,760
D.2.2 Country Specific Activities - **Kiribati**	ls			37,223		37,223		37,223	111,670
D.2.2 Country Specific Activities - **Marshall Islands**	ls			53,967		53,967		53,967	161,900
D.2.2 Country Specific Activities - **Nauru**	ls			45,527		45,527		45,527	136,580
D.2.2 Country Specific Activities - **Niue**	ls			36,617		36,617		36,617	109,850
D.2.2 Country Specific Activities - **Palau**	ls			30,883		30,883		30,883	92,650
D.2.2 Country Specific Activities - **Tuvalu**	ls			49,563		49,563		49,563	148,690
D.2.2 unallocated Country Specific Activities	ls			25,000		25,000		25,000	75,000
6150 Technical support Services									**90,000**
Mid-term, final project review, technical backstopping	ls			20,000		40,000		30,000	90,000
6300 General Operating Expenses									**111,168**
D.1.2 Establishment of Sanitary & Phytosanitary	ls			5,000		5,000		5,000	15,000
B.6 Project Coordination and Management (recurrent)	ls			13,300		15,500		17,220	46,020
Project Formulation	ls			50,000					50,000
Project Cost (exluding FAO Support Cost)									**4,147,168**
6130 FAO Support Costs									**352,832**
13% on 5570, 5900, 5920, 6150 and 6300									135,482
7% on 6000 (69% of the overall project amount)									217,350
Total Project Cost (Italian Contribution)									**4,500,000**

*** Indicative disbursement schedule**

I.2. Logical Framework: Support for the Regional Programme for Food Security in the Pacific Island Countries (RPFS)

Logical Level	Narrative Summary	Performance Indicators (to be validated and targeted during the inception phase)	Key Assumptions
I. Project Goal	• Improved national and regional agricultural production and security through reduced dependence on food imports and related foreign exchange expenditure.		• Improving the macro trade environment, institutional capacity and availability of modern and safer technologies and practices will increase overall food security.
II. Project Objectives	• (i) Improved food security through improved incomes and food access by increasing agricultural efficiency and productivity, marketing and trading systems and availability and range of food types.	• Improved nutritional standard of various population groups. • Quantity and % of locally produced food items (crops, livestock etc) in key markets. • Aggregate % increase in domestic food products (crops, livestock etc). • Higher farm incomes.	• Major issues in agricultural and trade policy addressed. Simultaneous awareness created amongst various populations of better food nutrition. • A conducive environment for formal/informal credit facilities is promoted
	• (ii) Strengthened agricultural trade and policy capacity through the establishment of sanitary and phytosanitary pathways for export	• Increased regional trade of upgrades quality produces	
III. Outputs	1. Improved and more efficient production techniques adopted on a sustained basis.	• % increase in area and number of farmers operating under new and improved technologies. • increase in crop diversification and marketable commodities. • % increase tonnage by crop and other output data, incomes, input use etc.	• Effective linkages made between project, national and local level institutions and effective participatory approaches adopted in identification and development of agricultural technologies and practices.
	2. Improved Regional and National	• % increase in number and calibre of	• PICs commitment to providing

	awareness in critical bio-safety issues in food (import and export) trade and in the relevance of commodity specific pathways.	trained staff to monitor SPS standards for all commodities in exporting PICs and aware of pest and disease issues in importing countries. • Export commodities that comply with the sanitary and phytosanitary standards adopted by national agencies and governments and markets in the trade destination countries; • Adopted SPS audit systems for export pathways/facilities by export destination authorities;	adequate human resources for training on a continual basis.

I.3. Logical Structure: Support to the Regional Programme for Food Security in the Pacific Island Countries

Logical Level	Narrative Summary	Performance Indicators	Key Assumptions
IV. Activities	1.1 Enhancing agricultural productivity and production (D.1) *Country specific production activities (D.1.1).*	• Increase in production and outputs of production activities. • Increase in value addition and marketable surplus.. • Level of farm diversification into high value crops. • Increase in farm incomes • Increase in employment opportunities especially in post harvest and agro processing • Periodic project progress reports.	• RMPU and NPMU identify Project areas and localities in effective time • NPMU work with existing CBO or establish such organizations in effective time • Timely supply of key equipment and inputs required for pilot activities.
	2.1 Strengthening agricultural trade Policy (D.2) *Establishment of national systems in sanitary and phytosanitary pathways for agricultural exports (D.2.1)*	• No. and distribution by country of commodity pathways for commodities with export potential. • % increase in number and calibre of trained staff in SPS standards for all commodities in exporting PICs and aware of main pest and diseases in importing countries. • No of commodity export potential studies & annual progress reports.	• PICs provide adequate human resources for training on a continual basis.

I.3. Project Work Plan

Activity	2003				2004				2005				2006			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
D.1 Enhancing Food Production and Security																
D.1.1 Country Specific Activities					■	■	■	■	■	■	■	■	■	■	■	
D.2 Strengthening Agricultural Trade and Policy																
D.2.2 Establishment of Sanitary & Phytosanitary Pathway					■	■	■	■								
B. INCEPTION PHASE																
Recruitment of Project Staff of PMU Meeting with countries, preparation of log frames, revision of Prodoc. And budget				■												

I.4. Terms of Reference

REGIONAL PROJECT COORDINATOR

The Regional Project Coordinator will work under the general guidance of the Food Systems and Food Security Officer in FAO/RAP and the responsible officer in FAO/SAPA. He/she will liaise closely with the Regional Operations Branch (ROB) at RAP. He/she will collaborate with National Project Coordinators and the extension and planning divisions of the Ministries of Agriculture in the different countries, and with consultants and experts to the Project.

In his/her role as Project Manager, he/she will be responsible for the following activities:

1) Undertake an analysis of the organization/institutional structures and programmes within the country with a goal to building alliances and increasing benefits from all the efforts directed at increasing food security.

2) Confirm priority inputs for project areas, with justification for selection of these priorities.

3) Propose solutions to the problems and constraints identified in the Analysis under (a) and (b).

4) In consultation with country officials, confirm components of country specific activities and analyse their cost estimates. The PC would need to get endorsement of activities and cost estimates by the RPSC.

5) In conjunction with other members of the project team and with the support of the responsible country units, prepare action programmes to implement specific project inputs. These must include the identification of responsible institutions and persons. The possibility of encouraging group promoters within the project area should be considered.

6) Identify the most suitable CROP institutions - in particular academic and research institutions - and provide the liaison necessary to establish links with counterpart institutions in Italy, for their joint involvement in implementation of the Trade Facilitation component with view to enhancing sustainability of project achievements after the end of the project.

7) Follow up with the identified institutions on implementation of Research & Development and capacity building activities of the RPFS Component II to ensure operations run as smoothly as possible.

8) Provide the RPSC on an ongoing basis, information needed for decision making on reallocation of project resources, where prolonged delays in implementation of country specific activities could jeopardise project delivery. The PC would need to make clear recommendations to the RPSC on such cases and the RPSC, timely decisions.

9) Visit the project areas as may be required and consult with local authorities, agricultural, forestry and fisheries extension officers and project beneficiaries.

10) Overall management and supervision of all project components and the coordination of all regional inputs.

11) Provide guidance to National Project Directors on project management and coordination and maintaining national level support for the project.

12) Prepare annual work plans that are consistent with regional and national policies and in conformity with the project document and donor inputs, including the preparation of a Performance Monitoring Plan at the inception phase.

13) including the Performance Monitoring Plan.

14) Provide both technical and administrative and general country briefing to project consultants; review and discuss reports prior to formal submission to the Budget Holder. After the clearance reports will be formally submitted to relevant parties.

15) Serve as Secretariat and organize meetings (at least annual) of the Regional Programme Steering Committee (RPSC).

16) Prepare and present to the Biennial Meeting of FAO South West Pacific Ministers for Agriculture, RPFS progress reports.

17) Prepare and present to the RPSC for endorsement the programme's annual plan of work, then submit the programme to the BH for approval.

18) Ensure that equipment purchases are correctly assigned and maintained throughout the project's time frame.

19) Supervise other staff of the Regional Project Management Unit.

20) Ensure that project progress reports and other documents (e.g. equipment inventories) are completed and submitted as required.

21) Be responsible (using the services of the RPMU) for the organization and preparation of regional workshops and seminars/meetings, and

22) Prepare an inception report within the first 2 months of assignment, prepare the quarterly, semi-annual and Terminal Reports.

Qualifications and Experience Required

– Advanced Degree in Rural Development, Agricultural Economics or related fields;

– At least ten years of progressively responsible experience in project administration and management; agricultural planning and project development; experience in extension service;

– Knowledge of the Pacific region;

– Must have strong analytical skills and demonstrate leadership ability;

– Additional work experience with coalition building and financial administration; and

– Excellent communication and people skills.

Languages: Excellent knowledge of written and spoken English.

Duration: Three years

Duty Station: Apia

Starting Date: August 2003

ASSISTANT REGIONAL PROJECT COORDINATOR/M&E SPECIALIST

The Assistant Project Coordinator/M&E Specialist will work under the supervision of the Project Director). He/she will collaborate with the National Project Coordinators, project consultants and national technical staff.

Specifically, the incumbent will perform the following tasks:

1) Assist the Project Coordinator with the coordination and implementation of the Project.
2) Set up and provide the necessary technical guidance to prepare a Project Monitoring Plan, against which assess project progress.
3) Prepare in consultation with relevant country authorities, logical framework matrices for country specific projects, based on the RPFS logframe. Detailed indicators at the country project result level would need to be documented, endorsed by the Project Coordinator and the RPSC and monitored.
4) Assist the Project Coordinator with the preparation of project work plans.
5) Assist with the review of project reports.
6) Assist with the planning of and participate in project review meetings.
7) Assist with the preparation of project budgets including revision documents.
8) Assume
9) Maintain petty cash account including disbursement of funds and records of these disbursements and balances of accounts as required.
10) In consultation with supervisor, reconcile telephone, facsimile and E-mail accounts.
11) Maintain liaison with officials of local banks and financial institutions to obtain day-to-day information on exchange and interest rates, changes in procedures and regulations and matters pertaining to maintenance of bank accounts.
12) Prepare an end-of-assignment report
13) Perform any other related duties as requested.

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Qualifications and Experience Required

- Advanced degree in financial management or public administration,
- At least 7 ten years experience in project management and M&E.
- Must have capacity to work with a team.

Languages: Excellent knowledge of written and spoken English. Must be able to communicate well with small farming, forestry and fishing communities.

Duration: 3 years

Duty Station: Apia

Starting Date: August 2003.

PROJECT SECRETARY

Under the overall supervision of the Project Coordinator and in close collaboration with the SAPA Administrative Officer, the incumbent will perform the following duties:

(a) Prepare and collate background documents and information for briefing of project staff and for project meetings.

(b) Catalogue and maintain proper records of all project documents and meeting reports.

(c) Prepare routine correspondence, including letters, email messages, faxes and memoranda on project matters.

(d) Type a wide variety of correspondences and reports from drafts and printed texts.

(e) Maintain project files in accordance with established codes.

(f) Assist with the maintaining of inventory of project equipment (for project office and those distributed to countries).

(g) Receive, screen, log and route correspondence and keeps track of follow-up actions.

(h) Arrange appointments, place and screen telephone calls.

(i) Arrange programmes for project staff, consultants, including hotel accommodation, travel arrangements etc.

(j) Assist with logistical arrangements for workshops and meetings.

(k) Perform any other duties as requested by the Project Coordinator.

Qualifications and Experiences Required

Knowledge and skills

1. Completion of secondary education and certification in secretarial course.
2. Knowledge of computer software, MS Office, Windows 2000, Excel.
3. Several years working experience and knowledge of office procedure.
4. Ability to work independently and efficiently.

Duration: 3 Years

Duty Station: Apia

I.5. Output Summary of Senior Official Meeting convened to discuss the proposed project

APIA, SAMOA, 9TH – 11TH JUNE 2003

Senior Officials (mainly Permanent Secretaries and Directors of Agriculture) from twelve out of the fourteen FAO member countries in the Pacific region attended the meeting. The countries represented included Cook Islands, Fiji, Federated States of Micronesia (potential new member), Marshall Islands, Niue, Papua New Guinea, Palau, Samoa, Solomon Islands, Tonga, Tuvalu (potential new member) and Vanuatu. Representatives of the Forum Secretariat, the Secretariat of the Pacific Community and New Zealand Government, also attended the meeting.

The FAO Sub-Regional Representative for Pacific Island Countries welcomed participants and the Hon Minister for Agriculture, Forestry, Fisheries and Meteorology gave the keynote address and officially opened the meeting. The Hon Minister talked of the firm commitments made by leaders of FAO Pacific island member countries to the concept of a regional programme focusing on support for country specific activities targeted at attaining food security. He referred to the request of Pacific island leaders at the side event to the 2002 *World Food Summit: five years later*, for FAO to field a follow-up mission to the 2002 mission that drafted the larger RPFS valued at above US$10 million. He also mentioned the strong support to the proposed programme voiced by Ministers for Agriculture at the Meeting of FAO South West Ministers for Agriculture held in Suva, Fiji, in May 2003, which the second mission attended.

The Senior Officials individually expressed strong support for the proposed project. They raised a number of issues and suggested modifications to the project documents considered critical to the successful implementation of the project. They emphasised the need for the programme to be flexible particularly in the application of funds for country activities. They suggested that the rationale for the strategy adopted and the linkages between the components would be clearer if presentation of the proposed components were reversed, Component I, becoming Component II and the significantly bigger Component II becoming Component I. They further suggested that fisheries and forestry being significant contributors to food security in the island countries should be allowed to play an important part particularly in country specific activities.

Delegates agreed that allocation of resources for country specific activities should be more objective and based on rankings of: Human Poverty Index (High); Level of Malnutrition (High); Vulnerability to natural disasters (High); Food Security projects under implementation (High); Overall volume of projects under implementation (High); Percentage contribution of Agriculture to GDP (Medium); Population density (Medium); and Population (Low).

Delegates agreed that the results as outlined in the project documents would deliver what are required to achieve the purpose. They believed however that the EU funded project, Development of Sustainable Agriculture in the Pacific (DSAP), deals adequately with strengthening of Agricultural Research and Extension and thus similar activities proposed in the RPFS should be removed and resources reallocated particularly to support country specific activities.

Delegates stressed the need to establish strong linkages between relevant regional CROP academic and research institutions and counterpart institutions in Italy and involving them in implementation of country specific activities to enhance sustainability of project achievement after the life of the project.

Delegates emphasised that the Regional Project Management Unit (RPMU) and the Regional Programme Steering Committee (RPSC) should be adequately empowered to effectively and efficiently manage the project. They should be able, without prolonged delays to reallocate funds for country specific activities to enhance project delivery. The RPMU should to the extent possible, assist with national project management and monitoring.

The Italian Representative of the Special Management Unit for the FAO Trust Fund for Food Safety and Food Security in his closing remarks expressed satisfaction with the outcome of the three-day meeting. He expressed pleasure in noting the interest and the strong commitment of the countries, which he hoped would become stronger and stronger over the years. He indicated that Italy would demonstrate flexibility and a genuine attention to the specific needs of the countries.

Delegates recognising with appreciation the assistance of the Government of Italy, made the following recommendations:

1. That Pillar I should be retained and the agriculture policy and trade facilitation component should remain in Pillar I.

2. That the R&E component should be removed from Pillar I and where required these activities be incorporated under country specific activities.

3. That the sequence of the Pillars should be reversed with Enhancing Food Production and Security becoming Pillar I and Trade Facilitation and Agricultural Policy becoming Pillar II.

4. That the programme should consider the inclusion of fisheries and forestry and recognise these sectors' important role in food security.

5. That the allocation of support should be based on the process reflected in the criteria ranking agree at the meeting. A completed matrix of the criteria should be attached to the RPFS project documents in the interest of fairness and transparency.

6. That the process of project implementation should be flexible and include an opportunity for countries to respond to indicative projects and if appropriate, change project scope and timing.

7. That the RPFS should be managed by: a Regional Project Management Unit (RPMU) comprised of a Regional Coordinator, Assistant Coordinator and Secretary; and a Regional Programme Steering Committee (RPSC) comprised of the donor representative, SRR, CROP Agency representative and one representative each from Micronesia, Polynesia and Melanesia.

8. That a monitoring system should be established at regional and national levels. This should be developed during the inception period of the project.

9. That the country projects should have associated timeframes, including monitoring and implementation checkpoints, that are monitored by the Regional Project Management Unit (RPMU) and the Regional Programme Steering Committee (RPSC). The RPMU and the RPSC should be empowered to reallocate funds that not been used within reasonable timeframes to other country projects. This will ensure that the funds are used efficiently and appropriately within the total 3-year timeframe.

10. That the RPMU should assist countries with project management at the national level.

11. That FAO considers making arrangements for involving appropriate Italian Institutions and CROP agencies, in particular academic and research institutions, in the implementation of Pillar I.

12. That the Delegates have endorsed the concept of South-South Cooperation and request FAO to seek funds to assist with the financial commitments of recipient countries. Countries will then consider further how South-South Cooperation could be implemented with the mechanics and modalities to be determined at a later date.

13. That Delegates noted that South-South Cooperation could be reciprocal in nature and could include training or study tours of cooperating countries, and links with universities and institutes in recipient countries.

I.6. Indicators and rankinks to guide Fund allocations for Country specific activities

Baseline indicators by country

	Land Area (Km2)	Population	Density (p/Km2)	Contrib. of agric. on GDP (3)	Level of Malnutrition (4)	GDP Capita (US$)	Human Poverty Index	Estimated Implementation Capacity
Cook islands	237	18,700	79	22	1	6,844	5	6
FS of Micronesia	701	118,100	168	3	1	3,051	27	1
Fiji	18,333	824,700	45	16	1	3,138	9	9
Kiribati	811	90,700	112	9	1	718	13	3
Marshall	181	51,800	286	14	1	5,000	20	1
Nauru	21	11,500	548	1	1	2,000	12	1
Niue	259	1,900	7	34	1	4,229	5	1
Palau	488	19,100	39	5	1	10,921	11	1
Papua New Guinea	462,243	4,790,800	10	26	2	1,140	53	4
Samoa	2,935	169,000	58	19	1	2,142	9	9
Solomon	28,370	447,900	16	40	2	1,193	50	1
Tonga	649	100,200	154	24	1	2,437	6	9
Tuvalu	26	9,900	381	24	1	1,905	7	1
Vanuatu	12,190	199,800	16	16	1	1,905	47	6

Indicators ranking by country as approved by Country Representatives

	Ranking on Population (Rank 0-50) (1)	Ranking on Pop Density (Rank 0-100) (2)	Ranking Ag Cont to GDP (Rank 0-100) (3)	Ranking on Malnutrition (Rank 0-150) (4)	Ranking on GDP/ Capita (Rank 0-50) (5)	Ranking on HPI (Rank 0-150) (6)	Ranking on Impl Capacity (Rank 0-150) (7)	Total Ranking	Total Ranking (1) to (7) in %	Alloc. by Country based on ranking*	Priorities
Cook Islands	1	14	54	1	30	1	94	196	6.67%	**$200,110**	fruit tree development
FS of Micronesia	2	31	6	1	12	69	1	122	4.16%	**$124,760**	fruit tree and root crop development in Kosrae, banana production development in Chuuk
Fiji	9	8	39	1	13	13	150	233	7.94%	**$238,150**	small scale backyard gardening for urban areas
Kiribati	2	20	21	1	1	26	38	109	3.72%	**$111,670**	strengthening development of food crops
Marshall Islands	2	52	34	1	22	48	1	159	5.40%	**$161,900**	Arno / Kwajalein pig & chicken production, Nallu Milli fishing, Laura Vilage fish processing
Nauru	1	100	1	1	7	23	1	134	4.55%	**$136,590**	development of household food gardening, strengthening teaching of agriculture in schools
Niue	1	1	85	1	18	1	1	108	3.66%	**$109,850**	Mutahefonua shredder/mulcher for organic production
Palau	1	7	11	1	50	20	1	91	3.09%	**$92,650**	development of value adding for improved food security
Papua New Guinea	50	2	64	150	3	150	57	476	16.18%	**$485,500**	fruit tree development and domestic rice production
Samoa	3	10	47	1	8	13	150	232	7.89%	**$236,550**	chicken production in permaculture, agricultural produce processing
Solomon Islands	6	3	100	150	3	141	1	403	13.71%	**$411,200**	development of fruit tree & pineapple production, development of seed gardens
Tonga	2	28	59	1	9	4	150	254	8.63%	**$258,800**	poulty, honey bee, increased production
Tuvalu	1	69	59	1	7	7	1	146	4.96%	**$148,690**	household food production promotion
Vanuatu	3	3	39	1	7	131	94	278	9.45%	**$283,580**	rural butchery, agro-forestry& food processing development
								2,941	**100.00%**	**$3,000,000**	

Notes

Points system used on indicator rankings established by Country Officials, June 2003: High = 1 to 150; Medium = 1 to 100; Low = 1 to 50

Data for (1), (2), (3) and (5) obtained from SPC Selected Pacific Economies - a Statistical Summary (SPESS) 1999

Data for (4) from the FAO "Mapping Nutrition and Malnutrition - Dietary Energy Supply" Chart

Data for (6) from the UNDP Human Development Report, 1999

Data & information for (7) based on FAO SAPA experience and on consultations with Pacific agriculture knowledge system

Formula for ranking: Relative weighting=a-(a-1)/(b-c)x(b-d), where a=maximum ranking point; b=max country value; c=min country value; d=country value