



Department of Agriculture Sector Plan 2016 – 2023



Acronyms

CePaCT	-	Center for Pacific Crops and Trees
DBT	-	Development Bank of Tuvalu
DCC	-	Development Coordination Committee
DEnv	-	Department of Environment
DOA	-	Department of Agriculture
EU	-	European Union
FAO	-	Food and Agriculture Organization of the United Nations
GCCA	-	Global Climate Change Alliance
GDP	-	Gross Domestic Product
HIES	-	Household Income Expenditure Survey
MFED	-	Ministry of Finance and Economic Development
MHA	-	Ministry of Health
MOE	-	Ministry of Education
NAPA	-	National Adaptation Programme of Action
NBT	-	National Bank of Tuvalu
NGO	-	Non-Government Organization
NSSD	-	National Strategy for Sustainable Development
ODA	-	Overseas Development Assistance
PACER	-	Pacific Area Closer Economic Relations
PICTA	-	Pacific Island Countries Trade Agreement
POETCom	-	Pacific Organics and Ethical Trade Community
RD	-	Department of Rural Development
SDE	-	Special Development Expenditure
SPC	-	Secretariat of the Pacific Community
SWOT	-	Strengths, Weaknesses, Opportunities and Threats
TANGO	-	Tuvalu Association of Non Government Organizations
TPF	-	Tuvalu Provident Fund
TCTC	-	Tuvalu Coconut Trading Cooperative
TFPC	-	Tuvalu Fresh Produce Cooperative
TNCW	-	Tuvalu National Council of Women
UN	-	United Nations
VAT	-	Value Added Tax

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1. Introduction

1.1. National Strategy for Sustainable Development and the National Agriculture Sector Plan

The Te Kakeega III: National Strategy for Sustainable Development sets out Government of Tuvalu's development priorities for the period 2016 to 2020.

Six key strategies are outlined in the TKIII for the agriculture sector. These are:

- 1 Enabling environment for agriculture development
- 2 Institutional strengthening in Agriculture
- 3 Increase productivity of farmers
- 4 Establish marketing system of local agricultural products
- 5 Increase community participation in agriculture
- 6 Raise awareness about the value of nutritious food for a healthy body

The National Agriculture Sector Plan (2016 to 2023) is a key activity (milestone) under strategy 1: enabling environment for agriculture development.

Its purpose is to provide more detailed and longer-term strategic guidance for the agriculture sector, beyond what is provided in the TKIII. It is intended that the National Agriculture Sector Plan will help inform what strategies and milestones will be included in future iterations of the TKIII. Similarly, it is intended that the National Agriculture Sector Plan will help inform activities to be included in Corporate Plans for the Department of Agriculture.

1.2 Development of the Tuvalu Agriculture Sector Plan

Two FAO consultants were in Tuvalu during the months of November and early December 2013 and led in the development of this National Agriculture Sector Plan. The consultants consulted widely with stakeholders of the agriculture sector, in Government, private sector, non-government organisations and farmers. A two day workshop was held on 22 & 25 November attended by 41 participants. The participants undertook a SWOT analysis and identified and discussed key issues and potential priority goals, strategies and actions for the agriculture sector during the period 2014-2023. A one day workshop attended by 18 stakeholders was held on 6 December 2013, where the consultants presented the draft Agriculture Sector Plan for discussion.

The Tuvalu agriculture sector plan is structured as follows:

- Situational analysis
- SWOT Analysis
- Strategic Planning Framework
- Implementation, Monitoring and Evaluation

- Strategic Framework and Action Plan

In July 2015, the Goals, Strategies and Actions of the Draft Tuvalu Agriculture Sector Plan were reviewed as part of a joint initiative - under the Strategic Program for Climate Resilience: Pacific Regional Track (SPCR-PR) and Coping with Climate Change in the Pacific Islands Region (CCCPIR) programs¹ - to develop a Monitoring and Evaluation framework for the Draft Tuvalu National Agriculture Sector Plan. This led to some adjustments to the Draft Plan to better outline the specific areas which fall under the mandate of the Department of Agriculture. This also involved the re-ordering of some outcomes, strategies and actions under the most relevant Goal, and removal of some actions that could be considered as duplications of similar actions mentioned under a different Goal. The overall objective of the Plan however remains unchanged.

In late 2016, the Tuvalu National Agriculture Sector Plan was reviewed again in light of the TKIII. Because the agriculture strategies outlined in the TKIII closely align with the earlier draft versions Tuvalu National Agriculture Sector Plan, only minor amendments were made in this last iteration.

¹ The SPCR-PR is being implemented by the Secretariat of the Pacific Regional Environment Program (SPREP) and Asian Development Bank (ADB) and is funded through the Climate Investment Funds (CIF). The CCCPIR is being implemented by the Secretariat of the Pacific Community (SPC) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and is funded through the Federal Ministry for Economic Cooperation and Development (BMZ).

2. Situational Analysis

2.1 Agriculture Sector Performance

2.1.1 Contribution of Agriculture to Gross Domestic Product (GDP)

Table 1: Real GDP growth rate and agriculture value added as percentage of GDP, from 2008-2011

	2008	2009	2010	2011
Real GDP Growth Rate	7.6	-1.7	-2.9	1.1
Agriculture Value Added as percentage of GDP	21	22	22	23

The agriculture sector is an important contributor to GDP, employment and rural life in Tuvalu. Despite an overall decline in output from the sector between 2001 and 2009, contribution of value added agriculture to GDP remained high during these years as shown in Table 1. The main problem that resulted in the decline in output was the depopulation of the outer islands due to increasing urban drift and subsequent reduction in local production caused by labor shortage. The high percentage of GDP estimate for subsistence in Tuvalu is confirmed in the household surveys. The 2010 Household Income Expenditure Survey (HIES), estimates that around 20% of household income comes from subsistence activities.

2.1.2 Contribution of Agriculture to Government Revenue and Foreign Exchange

Exports of agricultural products have not taken place from Tuvalu since the ceasing of copra exports in 2002. However, the sector has been generating government revenue indirectly through the Value Added Tax (VAT) paid by consumers for the imports of food. A combination of rising food prices and a trend towards increasing levels of food imports could be expected to increase the total amount of VAT collected, although the present VAT rate will not likely increase in the medium term given the vulnerability of the population to the rising prices of the imported foods. Rising import levels and food prices also contribute to the existing serious problem of trade imbalance. The situation in the agriculture sector contrasts significantly with that in the fisheries sector where considerable revenue is obtained from licenses and other fees associated with the exploitation of the country's tuna resources.

2.1.3 Employment and Human Resources of the Agriculture Sector

According to the 2002 census, around 75% of Tuvalu's labor force work in the subsistence and informal economy, and that is principally in fishing and food production. Migration from the outer islands to Funafuti puts pressure on the job market in Funafuti and reduces labor available for food production activities in the outer islands. In the outer islands 30% of the labor force and 60% of the population were engaged in subsistence activities. By contrast, in Funafuti only 6% of the population or 10.5% of the labor force was engaged in subsistence activities.

Youth comprises about 17% of the total population and has been identified as among the most disadvantaged in the country. Youth unemployment is a major problem. The continuing trend of increasing urbanization and negative attitudes of youth towards hard manual work in the agriculture sector has resulted in even higher rates of youth unemployment.

Women comprise 78% of the labor force in the subsistence economy and 37% of the labor force in the cash employment. They are increasingly joining formal employment and in Funafuti commonly carry the double burden of paid work and unpaid reproductive work in families and communities. Women however are active in backyard vegetable gardening, post harvest activities, handicraft making and increasingly improving household livelihoods through marketing of handicraft and locally grown food items including biodiversity and processed/preserved products.

2.2 Local Crop and Livestock Production

A key issue in development work within the agriculture sector in Tuvalu is the lack of information and data to guide policy development, project formulation and monitoring and evaluation. There are no production (or marketing) data or information gathered routinely in the sector. Without regular collection and analysis of appropriate data and information, it is difficult to convince development and donor partners of needs for collaboration and assistance in the agriculture sector.

2.2.1 Staple Food Crops

The main staple food crops grown in Tuvalu include: coconut, pulaka, banana, breadfruit, taro, cassava, sweetpotato, pawpaw and pumpkin. The agriculture sector is comprised of farmers with very small parcels of land, in the range between 0.25 and 1 hectare or less. Many of these farmers farm in pulaka pits where other than the main crop, pulaka (4-5 years growing period) which is grown mainly for customary purposes, banana, taro, sweetpotato, pawpaw, cassava etc. may also be grown for household food supplies. Due to outmigration during the colonial days, many pulaka pits were abandoned (some for more than 60 years). More recently, some pulaka pits have been abandoned because of salt water inundation due to sea level rise.

The other main form of the traditional farming system is that based on coconut trees, the coconut woodlands. These land holdings vary in size from 0.5 to 2 hectares or less. Most contain self-sown coconut trees with dense undergrowth of trees, shrubs and pandanus thickets. Some coconut woodlands have had the undergrowth cleared and banana, breadfruit, pawpaw taro, sweet potato, cassava and other crops planted between the coconut trees. The choice of intercrops varies from community to community.

There are no production data available and neither is there marketing information systematically collected from which to attempt to develop production estimates. Anecdotal evidence exists however which indicate that the number of farmers has declined substantially and that staple crop production has declined significantly overall in recent years.

Interestingly, consumption of the local staple foods appears to remain reasonably high in the outer islands. Responses to a questionnaire distributed during the survey on damages done by the drought of 2011, revealed that 61% of the 726 households surveyed in the 5 outer islands most affected, ate pulaka regularly – as frequently as every weekend when the crop is dug up and prepared for the special Sunday lunch after church. Additionally, although rice is the

main carbohydrate source in meals during the week, breadfruit and bananas are alternate staple sources in these atolls.

2.2.2 Vegetables

The Taiwan agricultural mission on Funafuti has maintained a vegetable farm since 2004 producing and selling supplies of fresh vegetables including tomatoes, capsicums, cabbages, cucumbers, spring onions, egg plants etc. Vegetable seedlings are also sold to interested backyard gardeners in the Capital and essential husbandry advice is given when required. An agricultural extension officer of the Department of Agriculture (DOA) works as counterpart to the Taiwan mission team leader and helps in the training activities and in organizing vegetable growing competitions which take place once a year. The agricultural extension officer also occasionally provides husbandry advice during the DOA Wednesday radio broadcasts, which from feedback she get from listeners, are popular in the outer islands.

The Taiwan agricultural mission also sometimes sends vegetable seeds to farmers and the Kaupule in the outer islands. The Kaupule in turn raise the seedlings in their demonstration plots, and distribute them to interested growers. The demonstration plots also maintain a supply of planting materials of staple food crops and of genetic material of improved varieties that have been imported from the Secretariat of the Pacific Community (SPC) Centre for Pacific Crops and Trees (CePaCT) and tested under the local environment, for distribution to interested farmers.

Although there are no DOA staff members or daily paid employees working in the Kaupules' demonstration plots, extension officers based in the islands or at the headquarters in Funafuti, work closely with the Kaupule and their demonstration plot employees, when required.

The volumes of seedlings and seeds dispensed from the Taiwan mission's farm have not always met the total needs of growers. The Tuvalu National Adaptation Programme of Action (NAPA) has tried to fill part of the void by distributing vegetable seeds and has established a small vegetable nursery in Funafuti. The Tuvalu National Council of Women (TNCWA) has also been distributing vegetable seeds and seedlings to its members.

Sales records kept by the Taiwan agricultural mission farm indicate that vegetable sales in Funafuti increased 12% from 2010 to 2011. Anecdotal evidence suggests that the same trend albeit at a slower pace is occurring in the outer islands.

2.2.3 Livestock

There are no livestock population data available for recent years at the DOA. Livestock farming in Tuvalu comprise breeding and growing of local pigs, chickens and ducks using locally sourced feeds, mainly coconuts and kitchen scraps sometimes supplemented by imported compound feeds, breeding and fattening of improved breeds of pigs and poultry for eggs and meat and fed on imported compound feeds.

The pig breeding unit at the Elisefou station in Vaitupu multiplies and sells improved breeds of pigs to farmers in all islands, although the supply rarely meets demand. This breeding unit also serves for training of farmers (and staff recruits) in pig husbandry.

There is no qualified veterinarian operating in Tuvalu. Simple tasks of pig castration and treatment of wounded and sick animals are routinely done by extension officers. The livestock officers occasionally conduct husbandry training programmes at Elisefou and in the islands.

Three extension officers successfully completed the requirements for the qualification of para-veterinarians under the training programme conducted by the Land Resources Division (LRD) of SPC. These officers (less one who has retired) now provide support to the extension officers in servicing the needs of livestock farmers. The para-veterinarians are also considered ‘eyes’ and ‘ears’ of the SPC Veterinarians and are tasked with informing SPC of emergency needs in Tuvalu that may require Veterinarian visits.

2.2.4 Current Development Projects

FAO has been providing financial assistance for the introduction from the SPC CePaCT of different varieties of bananas, and testing and distribution of the most popular varieties in Tuvalu. FAO has also been providing financial assistance to farming groups through its TeleFood Programme. Since the start of the TeleFood Programme, Tuvalu has had 5 projects fully implemented.

A 500,000 Euro EU/SPC Global Climate Change Alliance initiative, Improved Agroforestry Systems to Enhance Food Security and Build Resilience to Climate Change in Tuvalu, is about to start implementation in two sites each in Funafuti and Vaitupu. This project aims to evaluate the performance of various intercrop-coconut combinations in coconut woodlands.

2.3 Institutional and Support Services

2.3.1 Department of Agriculture

Current established staff members of the DOA total twenty four with two currently studying overseas. Nineteen of the twenty four are trained agriculturalists and five are skilled labourers. This current total staff complement is a reduction from the usual 27-30 strong contingent working at any one time in the department during the last 10 years.

The DOA is organized into four sub-divisions, the Extension Division with a Head of Extension charged with managing six extension officers. The Livestock Division with a Head of Livestock charged with managing four officers. The Plant Protection & Quarantine (PPQ) Division with a Head of PPQ managing two officers, and the Agroforestry Division with a Head of Agroforestry managing eight officers. The Livestock and Agroforestry divisions are based at the Elisefou agricultural research station in Vaitupu to look after the station. While the PPQ and Extension divisions are based in Funafuti. Two extension officers are based, one on each, at two outer islands – Nanumea and Nukulaelae.

The Elisefou station also serves as the initial training facility for newly recruited staff of the department before they start work in the department or sent on formal training at Universities in the region and further abroad. The quality of the training at Elisefou however has not kept up with that while the British Overseas Development Assistance (ODA) agricultural research and development staff were in the service during the 1980s.

A traditional output of Elisefou station continues and that is the cross-breeding of coconut trees (Dwarf x Renell Tall) and distribution of the progeny to interested growers in the islands. Another which is still ongoing is the multiplication of improved breeds of pigs, and selling them to farmers to improve their base breeds. A similar scheme for poultry, with importation of White Leghorn and Black Australorp, was undertaken but was discontinued due to problems with feed imports.

2.3.2 Credit Providing Institutions

The Development Bank of Tuvalu (DBT) has granted only a few loans in the agriculture sector and these have been confined to the livestock sector - pig breeding and production and poultry egg and broiler production. The National Bank of Tuvalu (NBT) and the Tuvalu Provident Fund (TPF) make up the balance of the credit providing institutions. Key issues that have contributed to low levels of loans for agricultural activities include: lack of sound loan proposals from agriculture sector stakeholders; absence of loan appraisal personnel that have agricultural background; and lack of sound financial advice provided to borrowers on a timely basis. The NBT has no agricultural loans in its portfolio.

2.3.3 Trade and Marketing

Local marketing of agricultural produce continue to be undeveloped and has good potential to grow. There are two market outlets in Funafuti for fresh produce that operate on Saturdays. One is jointly owned by the Funafuti Falekaupule and the Tuvalu Provident Fund and located at the premises of the Funafuti Falekaupule. The other is a one-person operation belonging to a community marketing organization (previously the Tuvalu Coconut Trading Cooperative, TCTC, and now the Tuvalu Fresh Produce Cooperative, TFPC) and is making use of the old copra shed at the wharf.

Both market places have been having mixed successes. The continuing issue of high costs and unreliability of inter-island transport, coupled with the lack of production planning and ineffective organization of purchases from producers has continued to plague efforts to improve performance of these local marketing efforts.

Tuvalu as a member of the Pacific Islands Forum is a party to the Pacific Islands Countries Trade Agreement (PICTA) which entered into force in 2002 and involves a commitment to reduce and eliminate tariffs amongst the 14 Pacific Forum member countries. It has also signed on to the Pacific Area Closer Economic Relations (PACER) which includes Australia and New Zealand in addition to the 14 Forum Island countries.

The trade initiative between Fiji and Tuvalu, which opened up imports of agricultural produce from Rotuma to Tuvalu, has started. The company which has been authorized to carry the freight on its new vessel, MV Lomaiviti Princess II, has recently launched the service in Funafuti. Despite the criticisms by some farmers that the imports provide unfair competition for them, it is generally accepted that more regular imports of staple food crops would help build demand at the local market places in Funafuti.

Trade in biodiversity products is starting to build in Funafuti and is a potential source of sustainable livelihoods for some people. These products include land crabs, coconut crabs, 'Lauluu', 'Noni', sea weeds and Polynesian arrowroot or 'Masooa'.

2.4 Contribution of the Agriculture Sector to Rural Development

Services, opportunities and cash incomes on islands away from Funafuti are considerably less than those on the capital. The gap between numbers engaged in cash employment on Funafuti compared to that in the outer islands has increased significantly in the last 10 years.

Work of extension officers in the outer islands places them in a good position to develop close professional relationship with residents and this can enhance their efforts in rural development. Opportunities, real and potential, exist in the agriculture sector for rural communities to earn livelihoods that can be sustained. Two such opportunities are in floriculture and biodiversity products. In Funafuti, innovative women are often seen picking

flowers to make garlands for sale to locals and tourists, and such efforts can be supported by developing floriculture with FAO assistance which has been successfully done in Cook Islands and Tonga. The business of selling biodiversity products can be promoted and further supported by investigating the feasibility of domesticating and farming these indigenous animals and plants.

2.5 Sustainable Management of Natural Resources and the Environment

The Corporate Plan of the Ministry of Natural Resources, Land and Survey (MNR) for 2014-2016 elaborated its Mission Statement as “To ensure that sustainability is safeguarded in the utilization of Tuvalu’s natural resources through informed Government policies and public practices to maximize the economic and social gains for Tuvalu”.

The DOA follows closely the Ministry’s mission statement, and is collaborating with the Department of Environment to ensure that work in the agriculture sector comply with National regulations as well as International standards, conventions and agreements. From time to time, The DOA also works with relevant departments and statutory bodies and stakeholders such as the National Disaster Committee on disaster preparedness and disaster response.

The DOA has been collaborating with the EU/USP Global Climate Change Alliance (GCCA) and NAPA in implementing the first phase of the Climate Change Adaptation Project. The first phase focuses on three areas: food security; water security; and coastal protection, and is scheduled to be completed in 2014. The second phase which starts in 2004 comprises seven projects two of which are coastal protection – increasing resilience of coastal areas and settlements, to climate change, and food security – continues from first phase in increasing subsistence pit grown pulaka salt tolerant varieties. For the latter project, the pulaka salt tolerant varieties have been transferred from SPC CePaCT in tissue culture and nurseries have been set up in Vaitupu and Nanumaga to receive the plants for multiplication/strengthening and distribution to farmers.

3. SWOT Analysis

A standard tool of strategic analysis is the SWOT analysis, which seeks to identify the main strengths, weaknesses, opportunities and threats for a given entity. The entity may be a nation, a sector or an individual enterprise. For the agriculture sector in Tuvalu, the internal assessment of the sector identifies the strengths and weaknesses while the assessment of the environment for the sector identifies opportunities and threats.

The SWOT analysis, along with the Situation Analysis form the basis for identifying goals, objectives and strategies that may be employed to apply the strengths and address the weaknesses of the sector, and capitalize on the opportunities and mitigate the threats to the long term development of the sector. The SWOT analysis for Tuvalu’s agriculture sector is presented in Table 2 below.

Table 2: Strengths, Weaknesses, Opportunities and Threats - the Tuvalu agriculture sector

Internal Analysis	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Technical staff in the DOA are well trained • The Institutional Strengthening Programme – has provided capital assistance through the Roadmap • There has been active donor support to the sector • Hardworking and persistent farmers utilizing the traditional farming systems • Farmers respond well to organized farming competitions • Farmers keen to share experiences among themselves & with the Kaupule etc. • Farmers are free to decide what to produce and whether to join production organizations or farm individually • Importation, successful testing and establishment of some new specie and varieties of food crops and breeds of animals 	<ul style="list-style-type: none"> • Government budgetary constraints result in inadequate extension services, no research capacity, and inability to maintain and upgrade facilities and equipment • Poor extension and marketing skills of DOA staff • Lack of continuity of effort by the farmers • Lack of incentives for producers • Weak linkages between relevant sectors, departments and stakeholders in the agriculture sector • Inadequate infrastructure, tools and machinery • Lack of access to financing of farming and projects • Natural disasters, particularly cyclones and droughts • Farmers not willing to share their production secrets in traditional crops

External Analysis	
Opportunities	Threats
<ul style="list-style-type: none"> • Continuing donor support • Potentials for import substitutions through appropriate packaging and labelling • High population of subsistence farmers • Building partnerships between stakeholders e.g. farmers & Kaupule • A secure market is available on Funafuti • Opportunities for marketing in overseas markets • Increasing availability of improved varieties of some crops results in increased consumption • Compensation available for damages due to natural disasters • Shortage of land may result in farming technology improving • Livestock feed based on local material • Growing of traditional plants & ornamentals • Produce from genetically modified organisms (GMOs) 	<ul style="list-style-type: none"> • Poor soil fertility and lack of available water • High level of reliance on imported foods • Farmers cannot compete with imported produce on crop varieties and production cost • Land tenure system leads to land fragmentation • Limited suitable land available for agriculture • Trend of importing what can be grown locally will continue • Climate change impacts – increased intensity of natural disasters & salt water intrusion into water lens • Entry of new pests and diseases of crops • Pesticide & fertilizer contamination of the sea • Increased thieving of farm produce • Increasing importation of produce that can be grown domestically • High cost of transportation between islands/atolls

4. Strategic Planning Framework

4.1 Strategic Approach

The strategic planning for Tuvalu's agriculture sector is based on the premise that agriculture is a fundamental component of the Tuvalu economy, is an important source of employment and potentially of sustainable livelihoods in the rural areas. Local agricultural producers make an important contribution to the nation's food supply, while agricultural communities play central roles in outer island development and natural resource management. The Tuvalu agriculture sector has underperformed for decades, and has notably retreated in its contribution to the economy in recent years. This National Agriculture Sector Plan lays out a roadmap to address the main factors that have limited the progress of this sector.

The National Agriculture Sector Plan starts off by trying to systematically improve the most important aspects of the supporting environment for agriculture in Tuvalu, including: updating and harmonizing the policy, legislative and regulatory framework; improving access to financing for agricultural production and projects; strengthening facilitating institutions including government agencies and production and marketing organizations, establishing within the DOA a research & development unit and a home economics unit (to support development of value adding to agriculture products and promotion of consumption of local foods); repairing and replacing ageing DOA infrastructure and machinery; and improving the capacity and effectiveness of the extension service.

The DOA will develop its capacity and capability in result-based policy development and monitoring and evaluation. As is now a common approach in some Pacific island countries, simple questionnaires will be developed for extension officers to gather responses to, in the normal course of carrying out their duties. Data and information collected will be analysed and information extrapolated to island or national basis. Such surveys will normally be done on two year intervals. Development partners like FAO may be able to help develop an appropriate sampling method and questionnaire, train the extension officers on conducting the surveys and relevant staff in analysing and extrapolating the results.

Another option to take would be for DOA to collaborate with the Statistics Department in developing additional questions relating to the agriculture sector, for inclusion in the national routine surveys e.g. HIES, housing censuses, labour surveys, health surveys etc. Furthermore, development partners could assist in building capacity on project development and monitoring & evaluation through training on development of Gross Margins, Logframe, objectively verifiable indicators etc.

The National Agriculture Sector Plan will strengthen national food security by: increasing domestic food production and productivity and ensuring consistent and dependable access to food; enhancing affordability and safety of food supplies; encouraging home food production including backyard gardening and fruit tree planting; investigating and applying incentives for domestic food production; and promoting the consumption of healthy foods including local foods.

Key actions include rehabilitating the pulaka pits in all islands and expansion of the backyard pulaka plots that have proven successful in Nanumaga, to the other islands. The clearing of the abandoned pulaka pits and making of compost from the cleared trees and shrubs would be

a major undertaking for which community participation is of paramount importance. Experience has shown in working with atoll soils that the best approach in such a national rehabilitation programme would need acquirement and operation in each island of appropriate diggers to dig and terrace in the pits, and of chippers that can crush green/dry coconut fronds and small green shrub-branches to make compost. Other tools such as chainsaws, shovels and cane knives would also need to be supplied for compost making and other associated tasks.

The drive for increased production and productivity is complemented by measures to enhance marketing of agricultural products locally and initiates efforts to export products to markets in other Pacific countries and further abroad. These measures include: starting the collection, evaluation and dissemination of marketing information; development and upgrading of marketing networks and infrastructure; enhancing market access; and expanding the marketing of biodiversity products and products from a flower and cottage agro-processing industries that will be encouraged to grow.

In trying to maintain an adequate supply of human resources for the sector, effort will be made to increase the participation of youth and of women in agriculture and in so doing help slows down urban drift. Through such efforts also, when the youth eventually move out of the outer islands if they do, they would at least have developed and learnt some important life skills and attitudes that would help them in life.

The National Agriculture Sector Plan seeks also to enhance the contribution of agriculture to rural development and agricultural sustainability by: promoting economic enterprises and entrepreneurship in rural communities; promoting income generating opportunities for households; establishing a policy and planning framework to protect and develop suitable agricultural lands; building the capacity of community organizations; strengthening compliance with environmental regulations and standards; promoting organic farming; and strengthening risk and disaster mitigation for the sector.

4.2 Goals and Outcomes

The six goals and associated outcomes of the Agriculture Sector Plan are presented in Table 3. The goals represent the desired state of the agriculture sector at the end of the plan period. The Outcomes represent the desired results which the National Agriculture Sector Plan aims to achieve under each goal.

Table 3: Agriculture Sector Goals and Outcomes

GOALS	OUTCOMES
<p>Goal 1: Strengthened enabling environment for the agriculture sector</p>	<ul style="list-style-type: none"> • Policy, legislation and regulatory framework strengthened for the long term development of the agriculture sector. • Land use planning & utilization for agriculture development enhanced • Access to financing improved • Culture of community development strengthened
<p>Goal 2: A strengthened and well-functioning Department of Agriculture</p>	<ul style="list-style-type: none"> • Department of Agriculture has adequate capacity and means to implement the National Agriculture Sector Plan
<p>Goal 3: Farmers have adopted more resilient, productive and environmentally sustainable farming practices and techniques.</p>	<ul style="list-style-type: none"> • Increased domestic food production • Application of good environmental standards and good agricultural practices • Strengthened risk and disaster mitigation for the sector • Establishment of organic farming as a major mode of production
<p>Goal 4: Demand for domestic agriculture products encouraged to grow</p>	<ul style="list-style-type: none"> • Marketing systems for domestic agricultural produce strengthened • Markets for new & emerging domestic products developed & supported • Export potential of selected agricultural products investigated and developed where feasible.
<p>Goal 5: Agriculture workforce increased, inclusive of landowners, women and youth</p>	<ul style="list-style-type: none"> • Adequate long-term supply of labour force for agriculture sector development
<p>Goal 6: Access to safe, affordable and nutritious food enhanced</p>	<ul style="list-style-type: none"> • Improved health through consumption of healthy local foods. • Improved access to adequate and safe food supplies for the population.

4.3 Strategies and Actions

To achieve each of the abovementioned goals and outcomes, a number of strategies and component actions are to be implemented. These strategies and actions are 'what the GoT does'.

A table outlining strategies and component actions are summarised at Appendix 1.

4. Implementation, Monitoring and Evaluation

4.1 Implementation Framework

As outlined in Section 1, the purpose of the Tuvalu National Agriculture Sector Plan is to provide more detailed and longer-term strategic guidance for the agriculture sector, beyond what is provided in the TKIII. It is intended that the National Agriculture Sector Plan will inform what strategies and milestones will be included in future iterations of the TKIII. Similarly, it is intended that the National Agriculture Sector Plan will inform activities to be included in Corporate Plans for the Department of Agriculture.

Accordingly, implementation of the Tuvalu National Agriculture Sector Plan will occur through national systems in place to implement the TKIII and Corporate Plans.

4.2 Resource Allocation for Implementation

The indicative investment requirement for the National Agriculture Sector Plan is presented in Table 4.

Table 4: Indicative Investment Requirements for the Tuvalu National Agriculture Sector Plan, 2016-2023

Goals	Public Expenditure	Private Expenditure	Total
1) Strengthened enabling environment for the agriculture sector	945,000	-	945,000
2) Department of Agriculture has adequate capacity and means to implement the National Agriculture Sector Plan	1,130,000	250,000	1,380,000
3) Farmers have adopted more resilient, productive and environmentally sustainable farming practices and techniques	640,000	120,000	760,000
4) Demand for domestic agriculture products encouraged to grow	460,000	80,000	540,000
5) Agriculture workforce increased, inclusive of landowners, women and youth	635,000	120,000	755,000

6) Access to safe, affordable and nutritious food enhanced	925,000	240,000	1,165,000
Total	4,735,000	810,000	5,545,000

Note:

Assumes that planned investments on infrastructure including Tuvalu ship to shore transport project, Funafuti Port Amenities, Outer Island ports upgrade and replacement for the Nivaga II vessel, are implemented

In addition to increased support on an annual basis from the National Budget, financial support needs to be sourced from the Special Development Expenditure (SDE) and Extra-Budgetary resources.

4.3 Monitoring and Evaluation Framework

A monitoring and evaluation framework has been developed for the Tuvalu National Agriculture Sector Plan. This is available from the Director, Department of Agriculture upon request.

An emphasis of this M&E framework is to support '3-yearly evaluation reviews' so as to inform periodic updates and improvements to the Plan as it is being implemented.

The M&E framework aligns with and further supports progress reporting through the budget and TKIII reporting processes.

Appendix 1

TUVALU NATIONAL AGRICULTURE SECTOR PLAN DRAFT STRATEGIC FRAMEWORK AND ACTION PLAN

Goal 1: Strengthened enabling environment for the agriculture sector				
Outcome	Strategy	Actions	Responsible agencies & stakeholders	Time frame
1.1 Policy, legislation and regulatory framework strengthened for the long term development of the agriculture sector	1.1.1 Appropriate policy, legislation and regulatory framework developed & maintained for the sector	1.1.1.1 Undertake review, update and harmonize appropriate legislations pertaining to the agriculture sector	MNR, DOA, Legal Office	Year 1-5
		1.1.1.2 Promulgate the biosecurity legislation – may replace Plants Act 1965, Plants (Shipping) Regulations 1976, Plants (Spraying of Aircraft) Regulations 1966 and Pesticide Act 1990.	MNR, DOA, Legal Office	Year 1-5
		1.1.1.3 Promulgate the animal health bill – may replace Importation of Animals Act 1964.	MNR, DOA, Legal Office	Year 1-5
		1.1.1.4 Ratify the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	MNR	Year 1
		1.1.1.5 Investigate and resolve monopoly in processing and marketing in the coconut industry	MNR, Copra Board, Trade Dept, Legal Office	Year 1-5
		1.1.1.6 Establish national standards for organic food production	DOA	Year 1-5
		1.1.1.7 Strengthen the system of inspection, monitoring and testing of imported foods	MOH, MNR, Trade Dept	Year 1-3
	1.1.2 Strengthen Partnerships between public, private and community stakeholders	1.1.2.1 Strengthen inter-agency collaboration to create greater involvement in community development	RD, MNR, DOA	Year 1-3
	1.1.3 Supporting environment and conditions for organic	1.1.3.1 Establish an agency to oversee organic development at the national level	DOA, SPC POETCom, farmers	Year 1-5

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	agriculture developed	1.1.3.2 Establish legislation & regulations for the production, quality assurance, certification and trade on organic products	MNR, DOA, Legal Office	Year 1-5
	1.1.4 Capacity on evidence based policy development, monitoring & evaluation, created & strengthened	1.1.4.1 Develop questionnaire & sampling method for extension officers to gather data regularly as part of their duties to have production estimates.	MNR, DOA, FAO or other partners	Year 1-5
		1.1.4.2 Add questions to Statistics Office questionnaire for HIES, labour survey etc. to get info on agriculture sector – production, labour etc.	MNR, DOA, FAO or other partners	Year 1-5
		1.3.3.3 Provide capacity & train on data/policy analysis methods, e.g. cost benefit and value chain analysis, and logframe and indicator development, to assist with project and policy development, monitoring and evaluation, etc	MNR, DOA, FAO or other partners	Year 1-5
1.2 Land use planning & utilization for agricultural development enhanced	1.2.1 Establish policy & planning framework to protect and develop suitable agricultural lands	1.2.1.1 Develop and approve a land use policy (See Actions under Goal 3, Contributor to Rural Development)	MNR, DOA, Lands, SPC, Legal Office	Year 1-5
		1.2.1.2 Strengthen the communication links (radio telephones and mobiles provided Telecom improves connection) between islands/atolls & provide for costs of communicating	MNR, DOA	Year 1-4
		1.2.1.3 Develop a land inventory, showing all parcels of land owned by Government, the zoning for different purposes and the capability profile, based on soil fertility & water availability	MNR, Lands, DOA	Year 1-5
		1.2.1.4 Coordinate land use planning of agricultural lands with other competing land uses, including for housing and commercial development	MNR, Lands, DOA, Kaupule	Year 1-5
		1.2.1.5 Open up Government lands for lease for food production to mitigate shortages after external price shocks and disasters	MNR, DOA, Kaupule	Year 1-10
1.3 Access to financing improved	1.3.1 Diversification of financing support for agriculture projects encouraged	1.3.1.1 Formulate and implement innovative ways for providing credit by DOA (e.g. IFAD loan), DBT & NBT to farmers and entrepreneurs in the agriculture sector	MNR, DOA, DBT, NBT	Year 1-5
		1.3.1.2 Promote micro-financing through farmers associations & marketing organizations with support from Government	DOA, RD, farmers associations & marketing organizations	Year 1-5
		1.3.1.3 Establish an agriculture development revolving fund in DOA to finance specific development activities in the agriculture sector	MNR, MFED, DOA	Year 1-5
		1.3.1.4 DOA provides essential production inputs including from the agriculture development revolving fund, through the farmers associations to help establishment of the FA	DOA, Farmers Associations	Year 1-10

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		1.3.1.5 Encourage community participation in economic ventures through group action, cooperatives, joint ventures etc.	RD, DOA, Falekaupule, farmers associations, cooperatives	Year 1-5
1.4 Culture of community development strengthened	1.4.1 Build capacity of community organizations	1.4.1.1 Undertake appropriate training of relevant organizations at the community level to enhance community development	RD, MNR, DOA, Kaupule	Year 1-5
	1.4.2 Promote economic enterprises and entrepreneurship in communities	1.4.2.1 Provide training in entrepreneurship and business development for communities	RD, DOA	Year 1-4
	1.4.3 Promote new opportunities for improved livelihoods of households	1.4.3.1 Promote joint venture programmes involving private sector and communities	RD, MNR, DOA, Kaupule	Year 1-3
		1.4.3.2 Encourage community participation in economic ventures through group action, cooperatives, joint ventures etc.	RD, DOA, Falekaupule, farmers associations, cooperatives	Year 1-5
		1.4.3.4 Encourage participation & partnership of public & private sector in community development	RD, MNR, DOA, Kaupule	Year 1-3

Goal 2: Department of Agriculture has adequate capacity and means to implement the National Agriculture Sector Plan

Outcome	Strategy	Actions	Responsible agencies & stakeholders	Time frame
22.1 A strengthened and well-functioning Department of Agriculture	2.1.1 An Institutional Strengthening Programme addresses structural reforms needed in DOA	2.1.1.0 Review mandate of the Elisefou Agriculture Station strengthen Research in Climate Change adaptation and mitigation in agriculture and agroforestry activities.	MNR/DOA	Year 1 - 3
		2.1.1.0 (a) Establish a Plant breeder position for Climate ready root crops and others at the Elisefou Agriculture Station	MNR/DOA	Year 1 - 3
		2.1.1.0 (b) Establish an agricultural Economist position in the Headquarters of the Agriculture Dept.	MNR/DOA	Year 1 - 3
		2.1.1.0 (c) Establish an Agricultural Project Officer committed to outer islands development	MNR/DOA	Year 1 - 3
		2.1.1.1 Establish a home economics unit (responsible also for organizing training on food processing & on home economics – cooking, food processing/preservation, sewing etc	MNR, DOA	Year 1-2
		2.1.1.2 Infrastructure improvements for Elisefou and new machinery & equipment will be acquired	MNR, DOA	Year 1-2
		2.1.1.3 Conduct agricultural censuses (10 year intervals)	DOA, FAO	Year 1-2
		2.1.1.4 Provide capacity for Monitoring & Evaluation, to allow DOA to play its leading role in implementing the Agriculture Sector Plan	MNR, DOA	Year 1

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		2.1.1.5 Strengthen (including provision of equipment) the DOA Publication & Information Unit (IPU) to support public awareness efforts for sustaining farmers' skills & knowledge in agriculture production	MNR, DOA	Year 1-4
		2.1.1.6 Provide specialist training for 2 officers each in animal health and plant health through attachment training at appropriate regional or national organizations	DOA	Year 1-10
		2.1.1.7 Add questions to Statistics Office questionnaire for HIES, labour survey etc. to get info on agriculture sector – production, labour etc.	MNR, DOA, FAO or other partners	Year 1-5
		2.1.1.8 Improve the operation of the Elisefou pig breeding unit to fulfil its roles of improving breeds in Tuvalu and being a training facility for staff and farmers	DOA	Year 1
	2.1.2 Extension service of DOA strengthened	2.1.2.1 Increase the number of extension officers by at least 5 over the plan period.	MNR, DOA	Year 1-4
		2.1.2.1 (a) The ALO position reviewed and redesignated as the Agriculture Information Officer to improve information collection and compilation and dissemination of department	MNR/DOA	Year 1
		2.1.2.2 Strengthen the communication links (radio telephones and mobiles provided Telecom improves connection) between islands/atolls & provide for costs of communicating	MNR, DOA	Year 1-4
		2.1.2.3 Send staff member for 1-2 mth training attachment on publication & information, at SPC LRD	DOA	Year 1-4
		2.1.2.4 Increase training and retraining of extension officers in recognized training institutions and by bringing technical experts to Tuvalu	DOA	Year 1-7
		2.1.2.5 All extension officers retrained for 1 month each year at Elisefou	DOA	Year 1-7
		2.1.2.6 Develop questionnaire & sampling method for extension officers to gather data regularly as part of their duties to have production estimates.	MNR, DOA, FAO or other partners	Year 1-5
		2.1.2.7 Establish research & development unit in Elisefou – recruit 2 TAs to start the work and send 2 trainees for graduate & post graduate studies	MNR, DOA	Year 1-2
	2.1.3 Capacity on evidence based policy development, monitoring & evaluation, created & strengthened	2.1.3.1 Develop questionnaire & sampling method for extension officers to gather data regularly as part of their duties to have production estimates.	MNR, DOA, FAO or other partners	Year 1-5
		2.1.3.2 Add questions to Statistics Office questionnaire for HIES, labour survey etc. to get info on agriculture sector – production, labour etc.	MNR, DOA, FAO or other partners	Year 1-5
		2.1.3.3 Provide capacity & train on data/policy analysis methods, e.g. cost benefit and value chain analysis, and logframe and indicator development, to assist with project and policy development, monitoring and evaluation, etc	MNR, DOA, FAO or other partners	Year 1-5

Goal 3: Farmers have adopted more resilient, productive and environmentally sustainable

farming practices and techniques				
Outcome	Strategy	Actions	Responsible agencies & stakeholders	Time frame
3.1 Increased domestic food production	3.1.1 Production and productivity of traditional farming systems increased	3.1.1.1 Encourage agricultural development on idle agricultural lands including abandoned pulaka pits	MNR, Lands, DOA, Falekaupule	Year 1-5
		3.1.1.2 Rehabilitate the pulaka pits that have been abandoned (some for more than 60 years) in all islands	DOA, Kaupule, Falekaupule	Year 1-6
		3.1.1.3 Expand the adoption of the pulaka plots recommended by NAPA for Nanumanga, to all islands	DOA, Kaupule, Falekaupule	Year 1-6
		3.1.1.4 Expand the activities/ equipment etc. of the EU/SPC GCCA project, improved agro-forestry systems to all non-project islands/atolls	MNR, DOA, Kaupule, production & marketing organizations	Year 3-7
	3.1.2 Production & productivity of vegetables increased	3.1.2.1 Test & release as appropriate new species e.g. spices, fruit trees, flowers etc., and varieties of food crops including climate ready ones introduced from CePaCT	DOA, Kaupule, production & marketing organizations	Year 1-7
		3.1.2.2 Improve availability of planting material/seeds of proven introduced varieties of food crops	DOA, Kaupule	Year 1-7
		3.1.2.3 Partnership strengthened between Kaupule, Taiwan Mission, farmers associations, marketing organizations & extension officers, to provide to farmers: seedlings and planting material, loans for production purposes; hands-on training; and assistance in marketing	DOA, Taiwan Mission, farmers associations & marketing organizations, farmers	Year 1-7
	3.1.3 Backyard gardening encouraged	3.1.3.1 Continue to promote use of backyard gardens by households	DOA, Kaupule	Year 1-7
		3.1.3.2 Plan & implement a household fruit tree planting programme	DOA, Kaupule	Year 1-7
	3.1.4 Appropriate techniques to increase efficiency of food production at lower costs and prices promoted	3.1.4.1 Training on traditional farming methods undertaken on regular basis using local experts in partnership with extension officers, Kaupule, farmers associations & marketing organizations	DOA, Kaupule, farmers associations & marketing organizations	Year 1-7
		3.1.4.2 Introduce and test new technologies proven successful in other countries with similar conditions as Tuvalu	DOA	Year 1-7
		3.1.4.3 Promote best practice by domestic food producers including mechanization, composting and mulching, soil testing to inform crop selection and post-harvest techniques	DOA	Year 1-6
		3.1.4.4 Establish nurseries for climate ready planting materials in the islands/atolls	MNR, DOA, Kaupule	Year 1-5

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		3.1.4.5 Integrate renewable energy technology & water management with agricultural production	DEnv, DOA	Year 1-7
		3.1.4.6 Explore the farming of biodiversity animals & plants e.g. land crabs, coconut crabs, Lauulu, noni, sea weeds, Polynesian arrowroots (masoaa) etc.	DOA, MHA, TNCW	Year 1-5
		3.1.4.7 Coordinate delivery of extension services with private sector and other agriculture stakeholders e.g. production & marketing organizations, Kaupule, Trade Department etc.	DOA, Kaupule, production & marketing organizations	Year 1-5
	3.1.5 Incentives to local producers for food security purposes provided	3.1.5.1 Investigate feasibility of providing incentives for local food production	Trade Dept, MNR, DOA	Year 1-6
		3.1.5.2 Provide temporary incentives to encourage growth of key local agriculture products targeted at marketing	Trade Dept, MNR, DOA	Year 1-4
		3.1.5.3 Investigate feasibility of providing incentives for local food production	Trade Dept, MNR, DOA	Year 1-6
3.2 Application of good environmental standards and good agricultural practices	3.2.1 Compliance with environmental regulations, standards & agreements strengthened	3.2.1.1 Support the strengthening of the environmental agencies and authorities	DEnv, DOA	Year 1-7
		3.2.1.2 Promote self-regulation of environmental compliance by agriculture stakeholders	DEnv, DOA	Year 1-7
	3.2.2 Use of conservation practices in the sector increased	3.2.2.1 Provide training on conservation practices for sector stakeholders	DEnv, DOA	Year 1-7
	3.2.3 Disaster response & recovery mechanisms for the agriculture sector strengthened	3.2.3.1 Establish stockpiles of tools, equipment and other materials for emergency use	National Disaster Committee, DEnv, MNR, DOA	Year 1-5
3.3 Strengthened risk and disaster mitigation for the sector	3.3.1 Disaster preparedness plan for the agriculture sector developed	3.3.1.1 Mitigate against food shortages resulting from natural disasters, including establishing emergency stockpiles	National Disaster Committee, DOA, MOH, Kaupule	Year 1-7
		3.3.1.2 Implement national agricultural disaster risk management programme	National Disaster Committee, DEnv, DOA	Year 1-5
		3.3.1.3 DOA maintains disaster mitigation information that is up to date	National Disaster Committee, MNR, DOA	Year 1-5
		3.3.1.4 Disseminate disaster mitigation information by DOA to the agricultural sector on a timely basis	DOA	Year 1-5
		3.3.1.5 Strengthen early warning systems (including facilitating saving of crops & animals) for natural disasters	National Disaster Committee, MNR, DOA	Year 1-5

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3.4 Establishment of organic farming as major mode of production	3.4.1 Training of producers on organic farming undertaken	3.4.1.1 Conduct training programme for stakeholders on organic food production	DOA, SPC POETCom, farmers	Year 1-7
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Goal 4: Demand for domestic agriculture products encouraged to grow				
Outcome	Strategy	Actions	Responsible agencies & stakeholders	Time frame
4.1 Marketing systems for domestic agricultural produce strengthened	4.1.1 Marketing information system developed	4.1.1.1 Develop marketing database of market prices, production costs, input prices in accessible format for marketing & planning purposes	DOA, Trade Dept	Year 1-4
		4.1.1.2 Improve rural connectivity through facilitating use of mobile telephones within communities	RD, MNR, DOA, Telecom	Year 1-5
	4.1.1(a) Agriculture Domestic Marketing Authority (ADMA) Implemented	4.1.1.3 Conduct stakeholders consultation on development of ADMA.	DOA, Marine, Trade, TNPSO, HA	Year 1 - 5
		4.1.1.4 Develop TOR for ADMA	DOA, Maritime, Trade, TNPSO, HA	Year 1 - 5
	4.1.2 Production and marketing organizations strengthened to support agriculture production, processing and marketing	4.1.2.1 Farmers associations & marketing organizations assisted to organize, transport & market produce from outer islands in Funafuti	DOA, production & marketing organizations, shipping	Year 1-7
		4.1.2.2 Training provided to staff of farmers associations & marketing organizations on production planning and marketing strategies	DOA, Farmer Associations, marketing organizations	Year 1-7
		4.1.2.3 Construct and equip a food processing (including cooking) facility	MNR, DOA	Year 1-2
	4.1.3 Two existing market outlets for local products investigated then strengthened	4.1.3.1 Investigate operation of the existing market places & consider ways of improving performance	TNPF, MNR, DOA, Funafuti kaupule	Year 1-3
		4.1.3.2 Encourage sale of local and imported products at the Funafuti market places to help build demand	DOA	Year 1-3
	4.1.4 Nutritional, taste, cultural and economic benefits of local foods highlighted & promoted	4.1.4.1 Promote local foods based on their cultural and economic importance, health benefits, freshness and superior flavour	DOA, MOH, Kaupule, Rural Development, NGOs - TANGO, TUFHA	Year 1-7
		4.1.4.2 Provide trainings on cooking of local foods/vegetables and when appropriate incorporate into that on food processing/preservation	DOA, MOH, Kaupule, RD, NGOs - TANGO, TUFHA	Year 1-7

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		4.1.4.3 Develop media advertisements, contests, cookbooks & publishing of local recipes for local foods	DOA, MOH, RD, Kaupule, TANGO, TUFHA, TNCW	Year 1-5
	4.1.5 Import substitution of root crops explored	4.1.4.3 Conduct survey on import volume of root crops from overseas and by type. To include other potential commodities especially livestock products.	DOA, Customs, Stats	Year 1 - 5
		4.1.4.5 Develop policy on the Identified and selected root crop for import substitution	DOA, farmes Association, Kaupule, HA	Year 1 - 7
4.2 Markets for new & emerging domestic products developed & supported	4.2.1 Support the development of new and emerging domestic agricultural products	4.2.1.1 Expand marketing of biodiversity products e.g land crabs, coconut crabs, Lauluu (bird nest), noni, edible sea weeds, Polynesian arrowroots (masoaa) etc.	Trade Dept, DOA	Year 1-4
		4.2.1.2 Encourage import substitution for agricultural products with potential for local production on competitive basis	Trade Dept, DOA	Year 1-4
		4.2.1.3 Develop agricultural processed products e.g. 'fekei', 'pulaka' chips, based on new processing & preservation methods for promotion in local and export markets	Trade Dept, DOA	Year 1-4
		4.2.1.4 Promote agro tourism	Trade Dept, DOA	Year 1-4
4.3 Export potential of selected agricultural products investigated and developed where feasible	4.3.1 Analyze local and overseas markets on an ongoing basis, including emerging markets	4.3.1.1 Build capacity of the Trade Dept to review overseas markets, and identify new markets for agricultural commodities, such as fair trade, organic agriculture, biodiversity products & other emerging markets	Trade Dept, DOA	Year 1-4
	4.3.2 Feasibility of market access of select agricultural products investigated and feasible opportunities developed	4.3.2.1 Prepare market access applications (with assistance from partners)	DOA, SPC, FAO, Trade Dept	Year 1-4

Goal 5: Agriculture workforce increased, inclusive of landowners, women and youth				
Outcome	Strategy	Actions	Responsible agencies & stakeholders	Time frame
5.1 Adequate long-term supply of labour force for agriculture sector development	5.1.1 Participation of youth in agriculture encouraged	5.1.1.1 Develop and implement programmes to facilitate access to land by young farmers on lease basis	MHA, MNR, DOA, Lands	Year 1-5
		5.1.1.2 Facilitate access to agricultural inputs by young farmers	MHA, MNR, DOA, Kaupule	Year 1-5
		5.1.1.3 Encourage involvement and participation of youth in organizations in the agriculture sector	MHA, MNR, DOA, Kaupule	Year 1-5
		5.1.1.4 Provide training for youth to encourage them to participate in agriculture	MHA, MNR, DOA, Kaupule	Year 1-5
	5.1.2 Women's roles in agriculture expanded and enhanced	5.1.2.1 Encourage involvement of women (individually & in community groups) in agriculture including in vegetable & livestock farming, floriculture, post-harvest and food processing/ preservation & marketing	TNCW, MHA, MNR, DOA, Kaupule	Year 1-5
		5.1.2.2 Facilitate access of women to essential tools and other agricultural inputs	TNCW, MHA, MNR, DOA, Kaupule	Year 1-5
	5.1.3 Capacity of primary, secondary schools & Vocational training centres in agriculture strengthened	5.1.3.1 Improve curricula for agriculture in high schools and in Vocational Training centers	MEYS, DOA	Year 1-3
		5.1.3.2 Promote appropriate inclusion of agriculture in primary education	MEYS, DOA	Year 1-3
		5.1.3.3 Develop school garden programme including staple food crops e.g. pulaka, taro etc. in primary & secondary schools for practical learning	MEYS, DOA	Year 1-3
		5.1.3.4 Promote at the practical level the culture of entrepreneurship in the primary & secondary school levels	MEYS, RD, DOA	Year 1-5
	5.1.4 Farmers Association are established registered and strengthened	5.1.4.1 Promote the establishment of Farming organizations on all outer islands where they have not been developed	DOA MHA	Year 1-7
		5.1.4.2 Farming Organizations on outer islands to be registered with Island Kaupule for recognition to stimulate farming activities and increasing agricultural production on outer islands	DOA Kaupule	Year 1-7
		5.1.4.3 Engage Farming Organizations in small commercial agricultural activities as opportunity arises	DOA TNPSO	Year 1-7

Goal 6: Access to safe, affordable and nutritious food enhanced				
Outcome	Strategy	Actions	Responsible agencies & stakeholders	Time frame
6.1 Improved health through consumption of healthy local foods	6.1.1 Strengthen the legal and policy framework for promotion of healthy foods	6.1.1.1 Revise and approve a food and nutrition policy	MNR, DOA, SPC, FAO, FORSEC SIDS	Year 1-3
	6.1.2 Consumption of healthy local foods promoted	6.1.2.1 Develop and implement public education and awareness programme on healthy food choices	DOA, MOH, Kaupule, NGOs e.g. TANGO, TUFHA	Year 1-7
		6.1.2.2 Promote increased consumption of healthy foods and diet, including increased consumption of local foods e.g. fruits & vegetables and decreased consumption of fat, sugar and salt	DOA, MOH, Kaupule, NGOs e.g. TANGO, TUFHA	Year 1-7
6.2 Improved access to adequate and safe food supplies for the population	6.2.1 Consistent and dependable access to adequate and safe food supplies ensured	6.1.2.3 Strengthen the targeting and delivery of social assistance to vulnerable groups to mitigate against external price shocks & disasters	Nat'l Disaster Committee, MNR, DOA, MOH, Kaupule	Year 1-7
		6.1.2.4 Initiate & expand school feeding programme to mitigate against disasters	Nat'l Disaster Committee, MNR, DOA, MEYS, MOH	Year 1-7
		6.1.2.5 Strengthen distribution, storage and marketing system of safe foods for consistent supplies	Private sector, MOH	Year 1-7
	6.2.2 Affordability of food supplies enhanced	6.2.2.1 Implement price support programme to subsidize basic food items to mitigate against external price shocks & disasters	Cabinet, Nat'l Disaster Committee, MNR, DOA, MOH	Year 1-7
	6.2.3 Ensure safety of food supplies	6.2.3.1 Ensure that activities of relevant agencies for national food safety are integrated	MOH, MNR, Trade Dept	Year 1-3
		6.2.3.2 Establish an inter-ministerial National CODEX ALIMENTARIUS Committee (MNR, DOA, MOH)	MNR, DOA, MOH, FAO	Year 1-3