

II. Situation Analysis and Agriculture Sector Overview

- 2.1 Tuvalu has a total land area of 26 square kilometers (km²) covering nine coral atolls and reef islands spread across more than 900,000 km² of Pacific Ocean. Land resources are few and of poor quality and with the highest point of land only a few meters above sea level. About 50% of the population of approximately 9,600 resides on Funafuti where population density is high. Small size, isolation from markets, and a harsh physical environment are significant constraints to the country's development. The low-lying atolls face occasional cyclones and the prospect of marine inundation in the event of rising sea levels. Higher sea levels already threaten the country's underground water table and the future habitation by the people of Tuvalu .
- 2.2 Subsistence farming and fishing are the main economic activities. Fishing license fee earnings, revenues from Internet domain name “.TV”, remittances from overseas workers, official transfers, and income from Tuvalu Trust Fund (TFT) and the Falekaupule Trust Fund (FTF) have provided the country with the main sources of income. A private sector-led economy has yet to emerge; and given the inherent constraints in such a small country, the private sector may never achieve lead status in the economy (ADB). A rising level of external revenue and grants has supported relatively good income growth, by regional standards, and progress in the transition to a service-oriented economy—agriculture, forestry, and fishing now provide less than 20% of GDP and approximately 40% of employment. Whilst Funafuti dominates the job opportunities in the public sector almost all fishing, agriculture, and handicraft manufacturing take place on the outer islands. However, there is a growing concern that traditional skills are being lost as the younger generation is reluctant to engage in the hard work of the traditional subsistence lifestyle and there is a need to document traditional practices and techniques. To slow the migration of population to Funafuti, improving the quality of life and income earning opportunities for the outer islands is a high priority. The Falekaupule Trust Fund was established specifically to

address development issues for the outer islands and the challenge now is to identify strategies that will reverse the outward migration and falling output from the outer islands and to help ensure that the outer island economies are sustainable in the long term.

- 2.3** Agriculture and fisheries remain important for food security, sustainable livelihoods and for national economic growth. Agriculture and fisheries development are emphasized as priorities in the Tuvalu National Strategy for Sustainable Development (NSSD) 2005-2015. Agriculture has traditionally been the preoccupation of Tuvaluan people and involves the cultivation of trees and crops and raising a limited number of pigs and chickens. Crop production is primarily for subsistence, crops comprising coconut, babai (swamp taro), taro, breadfruit, pandanus, banana, pumpkin, sweet potatoes and pawpaw. Home gardening is practiced but constrained by damage caused by roaming animals (pigs and chickens) lack of inputs and water availability. 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, however currently seawater inundation is resulting in a decline in production and abandonment of a number of pits. The coconut tree dominates agricultural production both for household purposes and commercial activity.
- 2.4** Copra export traditionally provided a significant proportion of the country's export earnings and livelihoods of the population despite the persistent low prices. Due to major marketing difficulties however the Tuvalu Copra Board ceased export of copra in 2000. Currently the most important of coconut products are toddy and fresh nuts. There is potential for improving productivity of coconut groves by intercropping with local and introduced fruit trees and cash crops such as noni. Coconut based intercropping is a traditional farming system that can be revived and improved. 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.
- 2.5** Livestock production in the country is at subsistence level, with pigs and free-range chicken being the main livestock kept. Most households at the outer islands keep a few pigs and a number of local chickens. There is opportunity for some import substitution through improved livestock management and production. A decisive factor determining increased livestock production is the cost of animal feed since such feed has to be imported. Further experimentation with local feed materials and appropriate animal breeds is warranted.
- 2.6** The development of agriculture in Tuvalu must confront many fundamental issues and challenges. Among them poor soils and growing conditions, small land areas, few comparative advantages, decline of outer island populations, increasing urbanization, declining interest in traditional agricultural practices, distance to export markets, and poor local market access for those who do wish to produce cash crops. Nevertheless, there is considerable scope for increasing production for local consumption and reversing recent production declines. Key challenges will be to revitalize and expand agriculture extension services, encourage people to once again turn to local rather than imported foods for better nutritional health, and improve transport and marketing of local produce (NSSD)
- 2.7** The importance of marine resources to the economy, sustainable livelihoods and food security cannot be overestimated. Tuvalu's main potential for future economic growth and development depend on its marine resources. Currently license fees represents the main economic activity, but increasing Tuvaluan participation in tuna fishing will continue to be one of the Government's main development priorities – based on the two central facts that the key to long term development for Tuvalu lies in the sustainable harvesting of its ocean resources, and that tuna is

the most valuable of these resources. However, Tuvalu faces great difficulties in establishing larger-scale, domestic fisheries. Tuna fishery development in particular is constrained by: the high investment cost of suitable vessels; the high capital and recurrent costs of shore-based and/or transport facilities; the lack of slipping and docking facilities; meager water supply; limited air transport and services; and the difficulty in attracting foreign investment in competition with other countries in the region. Responsibility for fisheries and marine resource matters is vested in two agencies, the Fisheries Department and the National Fishing Corporation of Tuvalu (NAFICOT), both of which are divisions of the Ministry of Natural Resources. The Department of Fisheries is responsible for the control, management and development of fisheries while NAFICOT is responsible for commercial fisheries development.

2.8 The subsistence fishery is widespread and involves the participation of virtually all households in the country. However, attempts to develop domestic fisheries in Tuvalu beyond the subsistence level have met with only limited success so far. Community Fishing Centres (CFCs) have been established in the outer islands. The centres serve as marketing points where fishers can have their catch processed by salting and drying for the domestic market. Government has managed operation of the centres to date, but efficiency is an issue, and it is intended that they should be put on a more commercial footing by leasing to private operators, or transferred to the community (or closed). Aquaculture research projects involving giant clams and introduced *Eucheuma* seaweed have been carried out, the former as a possible means of re-stocking wild populations, and the latter for commercial production. Neither has so far led to any kind of commercial development. The NSSD identifies as a priority the need to formulate and implement a clear, coherent and integrated fisheries sector development programme. Tuvalu is not yet a member of *Codex Alimentarius*. Developing national food standards in line with the provisions of *Codex* would enhance Tuvalu's potential industry in exploiting, processing and exporting its fisheries resources. However, because of the critical importance of marine resources to food security sustainable management of the resource retains the highest priority.

2.9 The traditional structure of Tuvalu society and its subsistence economy have been built on the sustainable use of the nation's limited, but nevertheless valuable natural resources, and the conservation and careful exploitation of its fragile atoll ecosystems. But these are now under threat from a growing population (on Funafuti), changing life styles, and climate change. Tuvalu is ranked as one of the most environmentally vulnerable states in the region, largely because of its low relief and small land area. The NSSD recognizes that national impacts associated with climate change and sea level rise include salt-water inundation of pulaka pits, coastal erosion and flooding. Developing appropriate policy and contingency/adaptation plans to mitigate the threats of climate change and sea level rise is of paramount importance for continued survival of the nation and its people.

III. Key issues shaping priorities for FAO assistance

- High and volatile food and oil prices and a deep trade balance deficit.
- Increasing levels of food and nutrition related non communicable diseases, which impact negatively on health system, families and national economy.
- Limited livelihood options particularly for outer islands.
- High level of youth unemployment particularly in urban areas (Funafuti).
- Lack of food quality and safety standards and capacity to implement regulations.
- Weak agricultural extension capacity and human resources for sector development
- Limited land area, poor soils and growing conditions
- Limited water supply for competing demands between domestic and agricultural uses.
- Lack of agricultural and fisheries infrastructure in the outer islands.

- Need to sustainably develop coconut value added industries.
- Need to sustainably develop and diversify fisheries and aquaculture commodities for domestic and international markets.
- Periodic devastation by cyclones and to lesser extent, droughts.
- Vulnerability to adverse impacts of Climate Change and Sea level Rise

IV. Country programme framework

4.1 The Tuvalu National Strategy for Sustainable Development - *Te Kakeega* (NSDS 2005-2015) identifies eight strategic areas: (i) good governance; (ii) macroeconomic growth and stability; (iii) social development (health, welfare, youth, gender, housing, and poverty alleviation); (iv) outer island and *falekaupule* (local island council) development; (v) employment and private sector development; (vi) human resource development; (vii) natural resources (agriculture, fisheries, tourism, and environmental management); and (viii) infrastructure and support services. Implementation of *Te Kakeega II* is expected to result in more employment opportunities, higher economic growth, better health care and education, better basic infrastructure, and continued social stability.

4.2 The key policy objectives for Agriculture are defined as: reverse the decline in subsistence agricultural production; increase the availability of land for agricultural production; increase production and consumption of local produce; and mitigate climate change related agricultural impacts. For fisheries development, the key policy objectives are: improve management of fisheries resources – inshore and EEZ; eliminate subsidies to Community Fishing Centers (CFCs) through efficiency gains, privatisation, or closure; and NAFICOT is made commercially viable. The *Te Kakeega II* Matrix, developed following a Donor Roundtable Meeting held in Suva 17 May 2006, provides the shorter term framework for implementation of the *Kakeega II*. For agriculture, there are two priority strategies viz. increased food production, diversified crops and increased income generating opportunities; and improved biosecurity. For fisheries, there are five priority strategies: make NAFICOT commercially viable; implement the recommendations of the CFC Review Report; develop coastal marine resources management system for Tuvalu; develop and maintain coastal fisheries as a source of food and income; and strengthen fisheries statistics database, including coastal fisheries information. Climate change is an important cross cutting issue and in 2007 Tuvalu has adopted a National Adaptation Programme of Action (NAPA) prepared with GEF funding assistance. Its objectives include identifying and promoting priority activities that address urgent and immediate needs for adaptation to the adverse impacts of climate change among the communities on the vulnerable islands of the country. Priority adaptation measures have been selected in the following areas considered most urgent for Tuvalu: coastal, agriculture, water, human health, fisheries, and disaster management. The programme has been submitted to the UNFCCC for funding consideration.

4.3 Taiwan and the Government of Japan are by far the two major donors for capital investment projects. EU, AusAID, and NZAID are also considerable aid providers. Taiwan provides annual budgetary grants, infrastructure (including bridges, jetty, shipping warehouse etc.), private sector support, ICT, agriculture assistance, scholarships and training. The focus of agriculture assistance is improvement and expansion of extension services, training on vegetable planting and aquaculture (milkfish farming on Vaitupu). The Government of Japan has pledged assistance for the construction of the main wharf at Funafuti, and NZAID is assisting with the ship-to-shore project. The Forum Fisheries Agency promotes through its EU-funded DevFish program greater economic returns from fisheries resources, primarily with analyses and recommendations on the important Tuna fishery. FAA has assisted in preparation of a fisheries development master plan

launched in 2008. Through the SOPAC, Tuvalu receives assistance in water management and climate change adaptation relating to coastal processes with Funafuti as one of the sites where sea-level changes are being measured. The Secretariat of the Pacific Community (SPC) has various programs that support agriculture. Recently a development partners' declaration which builds on the Paris Declaration has been prepared with the objective to improve aid effectiveness.

Overview of FAO on-going and recent assistance

4.4 Through TCP assistance and the RPFS recent support has focused on increased food crop production to enhance food security and improve diets. TCP support has been provided for strengthening ecologically-based management of rat in coconut plantations and for growing sigatoka disease resistant banana varieties. Two RPFS projects aimed at increasing local food production through the establishment of nurseries to supply planting materials and training of farmers, and upgrading pig breeding stock and up-skilling farmers on pig feeding using mainly local materials and other proper husbandry techniques.

Other assistance

4.5 Technical and financial support was provided to Tuvalu for the preparation of their first country report on Forest Sector Outlook Study 2020, and for preparation of a National Plan of Action to address Illegal, Unregulated and Unreported Fishing (NPOA IUU). Tuvalu has also benefited from the Telefood Program of FAO. Since its inception in 1997, there have been 5 Telefood projects approved and implemented.

V. Proposed Programme Framework

5.1 Based on the situation analysis and existing medium-term priorities of the Government and the UN System, and taking into account past and on-going FAO and partner's programmes, the following four priority outcomes will be pursued in the next four years:

- 1) Strengthened policy, legal and regulatory frameworks for sustainable agriculture and fisheries development.
- 2) Increased production, productivity and resilience of crop and livestock systems.
- 3) Improved income and employment opportunities through sustainable development of aquaculture and fisheries.
- 4) Enhanced capacity in processing and value adding of agriculture and fisheries products

Strengthened policy, legal and regulatory frameworks for sustainable agriculture and fisheries development.

5.2 Agriculture and fisheries constitute the mainstay of the everyday life of the Tuvalu people and this needs to be fully reflected in the national development framework if Tuvalu is to attain a high level of food security. As a first step, the national policy framework needs to be strengthened to clearly define what food security issues are, set clear goals, targets and outputs, activities and the role of all stakeholders. Improvements are also needed to expand data for effective planning and policy formulation. FAO will focus technical assistance to support a strengthened policy framework for sustainable agriculture and fisheries development to enhance food security and livelihoods.

Increased production, productivity and resilience of crop and livestock systems.

5.3 The atoll environment is one of the most challenging for crop and livestock production. Poor soils, scarcity of the water resource, and vulnerability to environmental degradation and impacts of climate change limit options to increase production. Nevertheless, rapidly increasing

population density in urban areas, soaring international fuel and oil prices and deteriorating diets, make it imperative that the level of self-sufficiency in food production is improved. Furthermore, opportunities exist to improve livelihoods (particularly on outer islands) through improved agriculture and fisheries productivity. Through the FSSLP and TCP resources support will be provided to strengthen traditional food production systems and services to the sector. Particular attention will be accorded to Tuvalu's vulnerability to the impacts of climate change and sea level rise.

Improved income and employment opportunities through sustainable development of aquaculture and fisheries.

5.4 Sustainable development of the marine resource offers the greatest potential for economic growth, sustainable livelihoods and food security in Tuvalu. It is necessary to expand fisheries projects on marketable marine resources whilst also ensuring conservation of stocks of vulnerable species. Resources from the FSSLP and TCP will be available to support sustainable development of aquaculture, inshore fisheries and value added products. Capacity building support in the area of food safety and standards will enhance opportunities for processed and value added products.

Enhanced capacity in processing and value adding of agriculture and fisheries products.

5.5. The coconut sector needs to be restructured and revitalized with a stronger focus on whole nut processing and value added products. Opportunities exist also to process and add value to other agriculture and fisheries products. The FSSLP and TCP funds could be provided for improving capacity and skills for product processing and value addition. Capacity building support in the area of food safety and standards will enhance opportunities for processed and value added products.

Priority NMPTF Outcomes and their Relationship to the to the Government and UN Medium-term Priorities

National Medium-Term Development Agenda NSSD 2005-2015		UNDAF Results Areas: 1. Equitable economic growth and poverty reduction, 2. Good Governance and Human Rights & 4. Sustainable environmental management		
Strategic Goals	Key Issues/constraints	NMPTF Outcomes	NMPTF Outputs	Potential areas for FAO assistance
<p>Natural Resources Development (Agriculture and Fisheries):</p> <p><i>Reverse the decline in subsistence agriculture production</i></p> <p><i>Increase production and consumption of local foods</i></p> <p><i>Mitigate climate related agricultural impacts</i></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Lack of a sector plan that provides a coherent policy and financing framework for promoting agriculture development and food security. <input type="checkbox"/> High and volatile food and oil prices and a deep trade balance deficit. <input type="checkbox"/> Increasing levels of food and nutrition related non communicable diseases <input type="checkbox"/> Limited livelihood options particularly for outer islands. <input type="checkbox"/> Weak agricultural extension capacity and human resources for sector development <input type="checkbox"/> Limited land area, poor soils and growing conditions <input type="checkbox"/> Limited water supply for competing demands between domestic and agricultural uses <input type="checkbox"/> Periodic devastation by cyclones and to lesser extent droughts <input type="checkbox"/> Vulnerability to adverse impacts of Climate Change and Sea level Rise 	<p><i>Strengthened policy, legal and regulatory frameworks for sustainable agriculture and fisheries development.</i></p> <p><i>Improved production, productivity and resilience of crop and livestock systems</i></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Evidenced-based sector policies in place <input type="checkbox"/> Equipment and training provided <input type="checkbox"/> Training and capacity building provided. Increased resilience of agricultural systems to impacts of climate change 	<p>Support for sector policy development and for data & statistics collection and management systems (TCPF)</p> <p>Pigs and poultry development Slaughter houses for Funafuti Outer islands agricultural centers (FSSLP)</p> <p>Capacity building for extension services</p> <p>Horizontal component of FSSLP on climate change adaptation/mitigation of impacts on agriculture and fisheries</p>

National Medium-Term Development Agenda NSSD 2005-2015		UNDAF Results Areas: 1. Equitable economic growth, 2. Good Governance and Human Rights, 3. Environmental management	
Strategic Goals	Key Issues/constraints	NMTPF Outcomes	NMTPF Outputs
<p><i>Improve management of fisheries resources</i></p> <p><i>Eliminate subsidies to CFCs</i> <i>NAFICOT is made commercially viable</i></p>	<p>-</p> <ul style="list-style-type: none"> <input type="checkbox"/> Need to sustainably develop coconut value added industries. <input type="checkbox"/> Need to sustainably develop and diversify fisheries and aquaculture commodities for domestic and international markets. 	<p><i>Enhanced capacity in processing and value adding of agriculture and fisheries products</i></p> <p><i>Improved income and employment opportunities through sustainable development of aquaculture and fisheries.</i></p>	<ul style="list-style-type: none"> <input type="checkbox"/> Appropriate technologies for crop and fruit trees disseminated to farmers <input type="checkbox"/> Processing equipment, products developed and training provided. <input type="checkbox"/> Codex committee established <input type="checkbox"/> Food safety standards and regulations established <input type="checkbox"/> Technical and economic feasibility studies for aquaculture undertaken, equipment and training provided.

The FAO activities have been determined through dialogue with the government and other sector stakeholders, and in accordance with the priorities set out in the Tuvalu National Strategy for Sustainable Development 2005-2015.