

TONGA

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| Capital: | Nuku'alofa |
| Land Area (km²) | 688 |
| Sea Area/EEZ (km²) | 700,000 |
| Islands (No.) | Some 150, about 35 are inhabited |
| Population (No.) | 100,200 |
| Annual Growth (%) | 0.6 |
| Density (inhabitants/km²) | 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 km², 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 km². 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 intercropping of vegetables with vanilla.