

**ASIAN DEVELOPMENT BANK
Operations Evaluation Department**

PROJECT PERFORMANCE EVALUATION REPORT

FOR THE

**OUTER ISLANDS AGRICULTURE DEVELOPMENT PROJECT
IN THE KINGDOM OF TONGA**

In this electronic file, the report is followed by Management's response.



Performance Evaluation Report

Project Number: 26028
Loan Number: 1412
July 2006

Tonga: Outer Islands Agriculture Development Project

Operations Evaluation Department

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – pa'anga (T\$)

| | At Appraisal (July 1995) | At Project Completion (July 2001) | At Operations Evaluation (November 2005) |
|-----------|-----------------------------|--------------------------------------|---|
| T\$1.00 = | \$0.800 | \$0.497 | \$0.520 |
| \$1.00 = | T\$1.25 | T\$2.15 | T\$1.92 |

ABBREVIATIONS

| | | |
|-------|---|--|
| ADB | – | Asian Development Bank |
| BME | – | baseline monitoring and evaluation |
| EIRR | – | economic internal rate of return |
| GDP | – | gross domestic product |
| km | – | kilometers |
| MAF | – | Ministry of Agriculture and Forestry |
| MIS | – | management information systems |
| MLCI | – | Ministry of Labour, Commerce and Industry |
| MOF | – | Ministry of Finance |
| MOW | – | Ministry of Works |
| NZAID | – | New Zealand Agency for International Development |
| OED | – | Operations Evaluation Department |
| OEM | – | Operations Evaluation Mission |
| PCR | – | project completion report |
| PSC | – | Public Service Commission |
| RRP | – | report and recommendation of the President |
| TA | – | technical assistance |
| TCC | – | Tonga Communications Corporation |
| TTC | – | Tonga Telecommunications Corporation |

NOTES

- (i) The fiscal year (FY) of the Government ends on 31 June.
- (ii) In this report, “\$” refers to US dollars.

| | |
|--------------------------|---|
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Operations Evaluation Department, PE-687

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The guidelines formally adopted by the Operations Evaluation Department (OED) on avoiding conflict of interest in its independent evaluations were observed in the preparation of this report. Rob Solomon is the consultant. To the knowledge of the management of OED, there were no conflicts of interest of the persons preparing, reviewing, or approving this report.

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BASIC DATA
Outer Islands Agriculture Development Project (Loan 1412-TON)

PROJECT PREPARATION/INSTITUTION BUILDING

| TA No. | Technical Assistance Name | Type | Person-Months | Amount | Approval Date |
|--------|--|------|---------------|--------|---------------|
| 1712 | Review of the Operations of the Ministry of Agriculture and Forestry | ADTA | | 75 | 5 Jun 1992 |
| 1970 | Agriculture Development Project | PPTA | 16.0 | 430 | 26 Oct 1993 |
| 2467 | Capacity Strengthening of Ministry of Agriculture and Forestry | ADTA | 25.5 | 600 | 12 Dec 1995 |
| 2468 | Institutional Strengthening of Tonga Trade | ADTA | 20.5 | 850 | 12 Dec 1995 |

| KEY PROGRAM DATA (\$ million) | Per ADB Loan Documents | Actual |
|--------------------------------------|-------------------------------|--------------------|
| | Expected | Actual |
| Total Program Cost | 5.72 | 4.6200 |
| Foreign Currency Cost | 2.82 | 3.2700 |
| Local Currency Cost | 2.87 | 1.3500 |
| Bank Loan Amount/Utilization | 3.63 | 3.2700 |
| Bank Loan Amount/Cancellation | | 0.002 ^a |
| KEY DATES | Expected | Actual |
| Fact-Finding | | 21 Mar–8 Apr 1995 |
| Appraisal | | 3–22 Jul 1995 |
| Loan Negotiations | | 7–17 Nov 1995 |
| Board Approval | | 12 Dec 1995 |
| Loan Agreement | | 29 Apr 1996 |
| Loan Effectiveness | 28 Jul 1996 | 23 Dec 1996 |
| Program Completion | 31 Dec 2000 | 30 Jun 2001 |
| Loan Closing | 30 Jun 2001 | 10 Oct 2001 |
| Months (Effectiveness to Completion) | 59.0 | 63.5 |

ECONOMIC AND FINANCIAL INTERNAL RATES OF RETURN (%)

| | Appraisal | PCR | PPER |
|--|------------------|------------|-------------|
| Economic Internal Rate of Return | 16.0 | 25.0 | 3.3 |
| Financial Internal Rate of Return ^b | 4.0–5.0 | 8.2 | (9.8) |

BORROWER

Kingdom of Tonga

EXECUTING AGENCY

Ministry of Finance

MISSION DATA

| Type of Mission | No. of Missions | No. of Person-Days |
|------------------------|-----------------|--------------------|
| Fact-Finding | 1 | 48 |
| Appraisal | 1 | 68 |
| Inception | 1 | 20 |
| Program Administration | | |
| Review | 7 | 117 |
| Program Completion | 1 | 37 |
| Operations Evaluation | 1 | 20 |

ADB = Asian Development Bank, ADTA = advisory technical assistance, PCR = project completion report, PPTA = project preparatory technical assistance, PPER = project performance evaluation report.

^a Utilization and cancellation amounts will not add up to actual loan amount because the loan was denominated in special drawing rights (SDR), and the Tonga pa'anga/SDR depreciated by 34.5% from T\$1.75 at the time of loan effectiveness to T\$2.67 at loan completion.

^b For telecommunication component only.

EXECUTIVE SUMMARY

This report details the findings of an evaluation of the Outer Islands Agriculture Development Project in Tonga.

Tonga has a population of about 100,000 living on four main island groups, which are dispersed widely over 360,000 square kilometers (km) of ocean. The natural resource base is limited, comprising some fertile volcanic soils, a large and relatively unexploited offshore tuna resource, and attractive scenery with some tourist potential. The structure of the society is stable; social indicators are high, particularly for education; and mortality rates are low. The main islands of Tongatapu and Vava'u are relatively well developed, with a full range of services and an active private sector. However, the other islands receive far fewer services, and have not participated fully in national development. The tiny and remote Niuas Group comprises two main islands—Niuafu'ou and Niuatoputapu—that are about 200 km apart, and about 650 km from the main island of Tongatapu. They have a combined population of 2,000 living in 12 main villages. In contrast, 'Eua is only 22 km from Tongatapu with a population of 5,000 in 14 main villages. Overall, the Project covered 26 villages on these three islands with a combined population of 7,000, or 7% of the population in Tonga.

The Government of Tonga has prioritized the development of the agriculture sector to maintain adequate rural living standards, provide food security, generate export earnings, and reduce dependence on food imports. In addition, the Government focuses its development efforts on the outer islands, where poverty is more widespread and income-generating opportunities are limited. Tonga's agriculture sector faces several constraints, including (i) lack of scale; (ii) distance from markets; (iii) high costs and limited availability of transport links; (iv) high costs and shortages of labor due to out-migration; and (v) significant climate risks, especially droughts and cyclones. The rationale for the Project was that much of the agriculture and other development in Tonga is on the main island of Tongatapu, while the population of the outer islands is relatively disadvantaged. The Government's efforts to address these disparities need support.

Tongan farmers are entrepreneurial and productive. However, because the rural economy is supported by overseas aid and remittances, they will increase non-subsistence production only if a profitable market is assured. A prime example was the conversion to squash production once a lucrative market had been identified.

The objectives of the Project were to increase agriculture productivity on the outer islands, reduce income disparities between households on different island groups, and stimulate agriculture exports. These objectives were to be achieved by (i) improving the agricultural extension services provided to the outer islands by the Ministry of Agriculture and Forestry (MAF); (ii) increasing and sustaining agriculture production systems on the Niuas and 'Eua, and improving the standards of living of agricultural households on these islands through a community-based and integrated approach; (iii) providing market support and development assistance to the farmers of the Niuas and 'Eua; and (iv) providing the infrastructure and support that these islands require for integrated agriculture development and a reasonable quality of life.

About 1,000 farm families were to benefit, with farm incomes estimated to increase 60–90%. The economic internal rate of return (EIRR) for the Project was estimated at 16%. The project completion report (PCR) increased the EIRR to 25%. However, the Operations

Evaluation Mission (OEM) reduced this to 3.3%, which means the Project is classified as inefficient.

By improving infrastructure and communications facilities, the Project aimed to provide better marketing opportunities for farmers in the Niuas and on 'Eua. Meanwhile, the capacity building and resources made available to MAF were to help farmers take advantage of these opportunities.

The Project supported strengthening MAF's capacity to implement projects, as well as enhancing agriculture production in Niuas and 'Eua. As envisaged at appraisal, MAF would be restructured before the start of the technical assistance (TA). However, the TA inception report noted that the strategic plan for MAF had not been adopted, and MAF had not been restructured as expected. As a result, the restructuring of MAF became a major task of the TA. This proved more difficult and time consuming than anticipated, causing the TA to exceed the time limits for restructuring set in the covenants. The OEM agrees with the PCR that the time required for institutional change in the Tonga public service was underestimated, which delayed the benefits from MAF strengthening.

Support under the Project for market development included funding for three processing, storage, and market buildings near the port facilities. Market information and training materials were provided for handicraft and tourism opportunities, as well as agriculture production. Further, training courses were developed to cover market identification, product presentation and packaging, and basic small business management. The planning of this component appears to have suffered from a lack of attention to the design, location, and management of the facilities, as well as a misguided attempt to have the facilities serve dual purposes. The combination of export storage facilities and produce markets, located on the wharf, did not work. Tourism opportunities in the Niuas are minimal due to transport difficulties.

The Project also sought to strengthen the marketing organization, Tonga Trade, with the aim of developing better post-harvest export processing and marketing opportunities for the country. The lack of staff impeded the implementation of this component. Thus, the TA allocated a large portion of its inputs to a new institution with only a fraction of its designated staff. A market information system also was to be introduced through Tonga Trade to collect, analyze, and publish information for all sectors. However, the lack of market information does not appear to have been as serious a constraint to exports as envisaged at appraisal.

The Project envisaged 57 km of new and improved agricultural roads, although only 49 km were constructed. While the Ministry of Work's road construction was satisfactory, it was hampered by some unreliable equipment, which resulted in poor compaction of some sections of the roads. In some cases, the quality and length of the road construction fell short of the target. The quality of these roads at the OEM was very poor, as they had been maintained minimally since project completion.

Under the Project, a private telephone service using a domestic satellite earth station replaced the community radiotelephone services on the Niuas. This component was implemented quickly and efficiently, and usage is above expectations. However, the volume of calls is still uneconomical, and the service will require cross-subsidies for many years.

Most of the 13 loan covenants were complied with. However, the reorganization of MAF did not occur within the specified time frame, which delayed other components of the Project. Covenants on the staffing and independence of Tonga Trade were not met, nor was the

requirement for private sector funding of 50% of the organization's costs. The latter covenant now is acknowledged to be unrealistic. The report and recommendation of the President (RRP) provided no indication that the potential impact of this covenant was researched adequately in terms of (i) the capacity of the export sector to contribute to the costs of Tonga Trade, or (ii) the appropriate size for Tonga Trade relative to the anticipated benefits. Changes to the agreed arrangements for managing the community funds, less than required funding for the Niuas, and failure to establish a fund for 'Eua, resulted in only partial compliance with the community funds covenant.

This evaluation rates the Project unsuccessful, which is a downgrade of the PCR assessment of successful. The Project is assessed as less relevant, less effective, inefficient, and less likely to be sustainable. The objectives were well founded on national social and economic needs, as well as the Government's development policy and the Asian Development Bank's (ADB) strategy for Tonga. However, the OEM concluded that the large expenditures on infrastructure—the telephone system in particular—never were going to have a significant impact on agriculture exports or household incomes in the Niuas, especially when the Project did not address the key issue of transportation. The Project has put a considerable financial burden on the Government without producing any sustainable economic returns.

The PCR stated the Project and other investments have produced significant and beneficial changes in the lives of the target populations. The OEM disagrees, and saw little evidence to support this statement when visiting the outer islands. Household incomes, agriculture production, and agriculture exports have changed little in the Niuas since the formulation of this Project. The PCR also stated that 'Eua probably should not be classified as an outer island anymore, because of its (i) excellent sea and air links with Tongatapu, (ii) improved road network, and (iii) growing economy. The OEM agrees with this statement. However, this close relationship with Tongatapu, including the supply of fresh fruit and vegetables to the main market daily, existed before the formulation of the Project, as recognized in the project preparatory TA report. Finally, the PCR stated that the increased ability to communicate with each other and the rest of the world through the improved telephone system had changed the lives of the people of the Niuas. While the new telephone system has improved the quality of lives, the OEM believes this has only a loose connection with the project objectives.

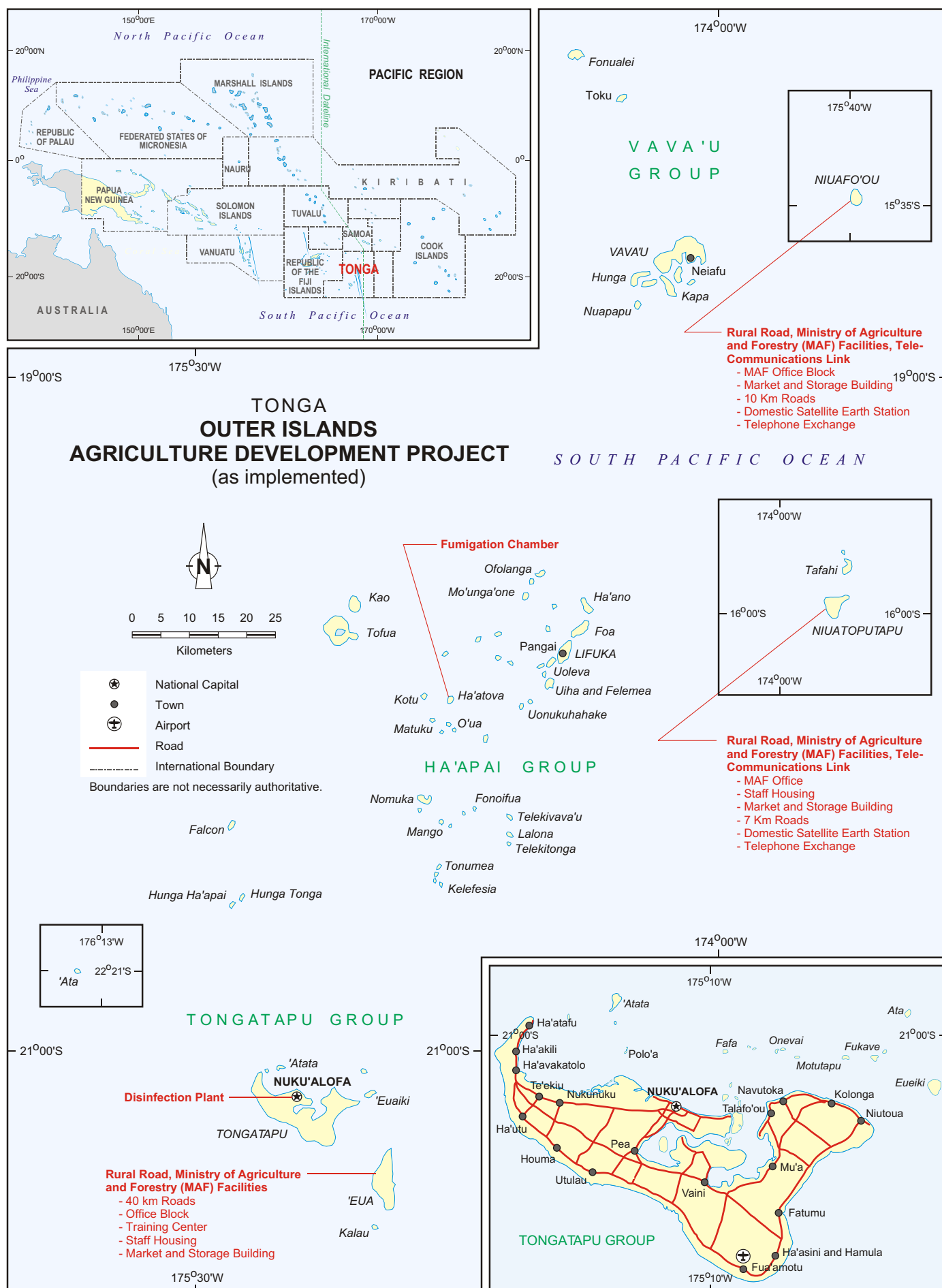
The following important lessons emerged from the Project: (i) long-term TA would have been more effective than intermittent inputs in restructuring MAF; (ii) provision of roads might be the most efficient way to stimulate economic growth in areas with agricultural land not served by roads; (iii) the experience with Tonga Trade exemplifies the difficulties of applying large-scale assistance to small and new organizations; and (iv) when using commercially oriented organizations (e.g., Tonga Telecommunications Corporation) to achieve non-commercial objectives, ADB and the Government should acknowledge possible conflicts, and should gear financial arrangements to realistic assessments of commercial outcomes. Further, when formulating a project that aims to stimulate agriculture exports from remote islands, market access must be addressed.

The Project, which included seven components and involved five ministries and one public enterprise, was seen as overly complex. Ownership of the Project also was seen as weak. This was demonstrated by (i) the poor maintenance of the road system in the Niuas and 'Eua, (ii) the reluctance of MAF to restructure its operations in a timely fashion, (iii) the reluctance of MAF and Tonga Trade to work together on establishing a single agriculture

marketing information system, and (iv) the weak political commitment to establishing Tonga Trade.

The draft report from the recent ADB-funded Agricultural Sector Review in Tonga stated that “the performance of the agriculture sector in Tonga over the past decade in terms of cash income and employment creation has been poor. Growth in the value added of the sector has lagged behind growth in other parts of the economy. The result is that the sector’s contribution to (gross domestic product) fell significantly during the past decade.” The report also stated that ADB and other international development agencies have tended to work almost exclusively through government agencies to achieve private sector development objectives. Apart from funds channeled to smallholders, commercial agriculture has not benefited from development interventions. Indeed, since capital inflows associated with aid projects have caused a higher exchange rate, these interventions have undermined the competitiveness of exporters.

Bruce Murray
Director General
Operations Evaluation Department



I. INTRODUCTION

A. Evaluation Purpose and Process

1. The Outer Islands Agriculture Development Project (the Project) in Tonga was selected as part of the annual random sample of completed projects for postevaluation by the Operations Evaluation Department (OED) of the Asian Development Bank (ADB). The Operations Evaluation Mission (OEM) visited Tonga on 6–30 November 2005, 4 years after loan closing. This was seen as a sufficient basis for evaluating project performance. The project completion report (PCR) also had recommended that the OEM proceed before December 2006. In preparing the evaluation report, the Mission followed OED's new *Guidelines for Preparation of Project Performance Evaluation Reports for Public Sector Operations*.¹

2. The evaluation is based on a review of project documents and other relevant studies. It also draws on discussions with ADB staff and senior officials of the Ministry of Finance (MOF), which was the Executing Agency; Ministry of Agriculture and Fisheries; Ministry of Works (MOW); Tonga Trade; Tonga Communications Corporation (TCC); other government agencies; nongovernment agencies; and community representatives from the Niuas and 'Eua islands in Tonga. The evaluation also incorporates the findings of the OEM's field visits to 'Eua and Niatoputapu. Due to a suspension of air services, the OEM was unable to visit Niuafo'ou.

3. A copy of the draft evaluation report was shared with concerned ADB departments and offices, as well as with the Borrower and MOF. Their views have been incorporated and acknowledged, where relevant.

4. In 2001, the PCR² rated the Project as successful,³ stating that target beneficiaries responded rationally and enthusiastically to the opportunities created. As a result, the PCR said, the increase in their incomes has been greater than expected. However, the OEM saw little direct evidence that the Project had increased incomes significantly. Thus, the OEM rated the Project as unsuccessful (paras. 64–82). The PCR also stated that the Project and other investments have produced significant and beneficial changes in the lives of the target populations. However, the Project probably did not contribute significantly to 'Eua's economic growth. Finally, the PCR stated that the increased ability to communicate with each other and the rest of the world through the improved telephone system, as well as the improved mobility due to the construction of new roads, improved the lives of the people of the Niuas. While the new telephone system⁴ has enhanced the quality of lives, the OEM believes this has only a loose connection with the project objectives to (i) increase agriculture productivity on the outer islands, (ii) reduce income disparities between households on different island groups, and (iii) stimulate agriculture exports.

¹ Available: <http://www.adb.org/Documents/Guidelines/Evaluation/PPER-PSO/default.asp>.

² ADB. 2001. *Project Completion Report on the Outer Islands Agriculture Development Project in Tonga*. Manila (Loan 1412-TON).

³ The PCR Mission was fielded in July 2001.

⁴ This component accounted for 50% of the total loan value.

B. Project Objectives

5. The Project was classified primarily as an economic growth project, with a secondary classification of poverty reduction. The objectives of the Project were to increase agriculture productivity on the outer islands, reduce income disparities between households on different island groups, and stimulate agriculture exports. These objectives were to be achieved by (i) improving the agricultural extension services provided to the outer islands by MAF, with associated research and trials capabilities; (ii) increasing and sustaining agriculture production systems on the Niuas and 'Eua, as well as improving the standards of living of agricultural households on these islands through a community-based and integrated approach; (iii) providing market support and development assistance to the farmers of the Niuas and 'Eua; and (iv) providing the infrastructure development and support that the Niuas and 'Eua required to support integrated agricultural development and a reasonable quality of life.

6. Much of the agriculture and other development in Tonga is on the main island of Tongatapu, while the population of the outer islands is relatively disadvantaged. The inhabitants of the Niuas are isolated from the main islands by poor communications links. The report and recommendation of the President (RRP)⁵ stated that the Project would benefit about 7,000 persons living on the Niuas and on 'Eua, where the socioeconomic analysis showed (i) income levels were low; (ii) access to government services and resources was restricted; and (iii) access to cash income opportunities, domestic water supplies, high-quality housing, and transport and communications infrastructure was limited compared with Tongatapu, where economic growth has been considerably faster.

7. The RRP stated that the Project was designed to increase economic activity in the agriculture sector in general and on the outer islands in particular by making producers aware of profitable, exploitable, and sustainable market opportunities. Although agriculture produce accounts for most of Tonga's export income, the country lacks a coherent marketing system and strategy. The Project supported strengthening MAF's capacity to implement projects, as well as enhancing agriculture production in the Niuas and 'Eua. The Project also strengthened the marketing organization, Tonga Trade, which was newly established within the Ministry of Labour, Commerce and Industry (MLCI). The aim was to develop improved post-harvest export processing and marketing opportunities for the country.

8. Further, the RRP stated that the Project would provide better marketing opportunities for farmers in the Niuas and 'Eua by improving infrastructure and communications facilities. The capacity building and resources provided to MAF were to help farmers take advantage of these opportunities. As a result, farmers would be able to increase yields and areas cropped, and adopt more profitable cropping patterns. About 1,000 farm families were to benefit, with farm incomes estimated to increase 60–90%. The economic internal rate of return (EIRR) for the Project was estimated at 16%. At the time of the PCR, the EIRR was increased to 25%, though the OEM reduced this to 3.3% (Appendix 1).

⁵ ADB. 1995. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grants to the Kingdom of Tonga for the Outer Islands Agriculture Development Project*. Manila.

II. DESIGN AND IMPLEMENTATION

A. Formulation

9. The Government of Tonga has prioritized the development of the agriculture sector to (i) maintain adequate rural living standards, (ii) provide food security, (iii) generate export earnings, and (iv) reduce dependence on food imports. In addition, the Government focuses its development efforts on the outer islands, where poverty is more widespread and income-generating opportunities are limited. During ADB's Country Programming Mission in 1992, the Government requested assistance for a project that addressed these two priorities. In response, ADB provided a project preparatory technical assistance (TA)⁶ for the Project. ADB fielded the Fact-Finding Mission in March 1995 to review the proposed Project. The Mission was to talk with farmers, community organizations, the Government, and the concerned agencies to resolve any issues related to the proposed Project. Due to logistical difficulties, however, the Fact-Finding Mission did not visit the Niuas. Given the importance of these islands in the Project, this was a significant gap in project formulation. The subsequent Appraisal Mission⁷ visited the Niuas and 'Eua before reaching agreement with the Government on the technical, organizational, implementation, financial, and economic aspects of the Project. The Appraisal Mission also confirmed that the Government accorded a high priority to the Project.

10. An ADB-financed review⁸ of the structure and operations of MAF in 1992 concluded that the ministry was an effective organization that generally has fulfilled its mandate. However, the review also determined that some structural reorganization would be necessary for MAF to undertake its changing role in an environment of increasingly commercialized agriculture production. MAF accepted in principle this recommendation, which was being implemented during the appraisal. The advisory TA's provision to strengthen the institutional capability of MAF was to assist in implementing the improvements.

11. A comprehensive socioeconomic analysis of the communities in the Niuas and 'Eua was undertaken as part of the feasibility study for the Project. This indicated a high social cohesion and structure. The communities on the islands supported the Project, viewing it as an opportunity to improve their quality of life. Their lack of development assistance in the past was highlighted, especially in comparison to Tongatapu and Vava'u.

12. The OEM identified the wide scope of the Project as a weakness in the project formulation. The Project had seven components, and involved five ministries and one Government-owned enterprise. As a result, the implementation of the Project was not always coordinated efficiently.

13. MOF initially did not support the loan, because it did not believe the Project would be economically viable or would increase agriculture exports significantly from the Niuas. Local staff and counterparts expressed a similar view. When the consultants

⁶ ADB. 1993. *Technical Assistance to the Kingdom of Tonga for Agriculture Development Project*. Manila.

⁷ The Appraisal Mission was fielded in July 1995.

⁸ ADB. 1992. *Technical Assistance to the Kingdom of Tonga for the Review of the Operations of the Ministry of Agriculture and Forestry*. Manila (TA 1712-TON, for \$75,000, approved 5 June).

visited the Niuas, one local counterpart frequently engaged them on the unlikelihood of the Project succeeding on these islands, mainly because the Project did not address transportation issues.

14. In addition, ownership of the Project was seen as weak. This was demonstrated by (i) the poor maintenance of the road system in the Niuas and 'Eua, (ii) the reluctance of MAF to restructure its operations in a timely fashion, (iii) the reluctance of MAF and Tonga Trade to work together on establishing a single agriculture marketing information system, and (iv) the weak political commitment to establishing Tonga Trade.

15. In formulating the Project,⁹ ADB followed standard approaches to implementation arrangements, consulting services, and procurement.

B. Rationale

16. Tonga's agriculture sector faces several constraints, including lack of scale; distance from markets; high costs and limited availability of transport links; high costs and shortages of labor due to out-migration; and significant climate risks, especially drought and cyclones. The main sector issues are (i) reducing the economic vulnerability resulting from exporting only one crop—squash—to a limited market, (ii) achieving equitable development in different island groups, (iii) overcoming Tonga's geographic and economic isolation, and (iv) achieving an efficient reorganization of the structure and functions of MAF. Another important aspect of the agriculture sector is that domestic production of food crops for home consumption is significant, and food security issues generally are dealt with at the household and village levels. Moreover, handicrafts and livestock production are important elements in the income of rural households, especially in the outer islands. Finally, the recent increases in national revenues from agriculture exports have been offset to some extent by corresponding increases in the imports of inputs, including seeds, fertilizer, agrochemicals, farm machinery, and transport.

17. The RRP stated that agriculture was the dominant economic activity in Tonga, accounting for 40% of gross domestic product (GDP) and providing more than 70% of domestic employment in 1993. However, the source of this information was not disclosed. More recent information suggests that agriculture contributes much less to the economy. Recent figures show that agriculture contributed 25% of GDP in 2003¹⁰ and 29% of domestic employment (46% for males) that year.¹¹

18. At appraisal, the Government's development objectives and strategies for the economy were outlined in the Sixth Strategic Development Plan (SDPVI), which covered 1991–1995. The predominant objective of SDPVI was to achieve sustainable economic growth with a more equitable distribution of income. The recurring themes in the SDPVI were achieving economic growth, regional development, and greater private sector participation.

19. The focus on regional development is rooted in the substantial disparities in income distribution among the different island groups due to differences in development

⁹ The loan Fact-Finding Mission was 12 March–8 April 1995, while the Appraisal Mission was 3–22 July 1995. ADB's Board approved the project on 12 December 1995.

¹⁰ Central Planning Department. 2006. *Strategic Development Plan Eight*. Nuku'alofa.

¹¹ Statistics Department. 2003. *Report on the Tonga Labour Force Survey 2003*. Nuku'alofa.

potential, as well as the severe resource allocation bias against the outer islands. The switch to squash as the country's principal export earner reinforced the disparities. Previously, Tonga exported traditional products, such as copra and bananas, which were produced in all the island groups. Through regional development programs, SDPVI sought to reduce these imbalances by redirecting resources to provide more equitable access to infrastructure, goods, and services in the less developed outer islands.

20. Under the most recent development plan (SDPVII, 2005/06 – 2007/08), the Government's strategic result areas include the facilitation of private sector development, and improvement of access to government services in rural areas and outer islands. The first priority policy sector is agriculture, which has the following objectives: (i) broaden the base of agriculture exports, (ii) diversify export markets for agriculture products, (iii) create opportunities in the outer regions for agriculture production for export, and (iv) strengthen and support key institutions in the industry. The draft Strategic Development Plan Eighth continues to stress agriculture as a key economic sector and a major contributor to two of the plan's goals: (i) promoting sustained private sector-led growth of a globally competitive economy, and (ii) ensuring the equitable distribution of the benefits of growth. The Project, therefore, fit the Government's development priorities at appraisal and evaluation.

21. At project appraisal, ADB's operational strategy for Tonga, as outlined in the *Strategy for the Pacific: Policies and Programs for Sustainable Growth*,¹² emphasized moving the country toward sustainable development and self reliance. It also encouraged greater ownership of projects through the targeted use of domestic funds. ADB's latest strategy document, *A Pacific Strategy for the Asian Development Bank 2005–2009*,¹³ noted: "It is difficult to achieve significant impact without a medium- and long-term commitment to a manageable number of clearly defined objectives. ADB needs a more analytic approach with longer time frames in fewer areas." The Project, with its somewhat scattergun approach involving seven components, five ministries, and one Government-owned enterprise, does not fit these new criteria. An intervention targeting a few components with a long-term commitment would be more appropriate.

C. Cost, Financing, and Executing Arrangements

22. As reported in the PCR, the cost of the Project was \$4.6 million, compared with the appraisal estimate of \$5.7 million. The appraisal estimate included provisions for price escalation (\$0.2 million), physical contingencies (\$0.3 million), and service charge on the loan during implementation (\$0.1 million). Neither of the two contingencies was required, and the service charge was lower than anticipated, which accounted for \$0.6 million in savings. Savings of approximately \$0.1 million each was realized on telecommunications equipment, and furniture and equipment. Meanwhile, \$0.2 million from the civil works component was not spent. The OEM considers the unspent funds from the civil works component an issue, because the roads on all three islands had quality problems at project completion. For 'Eua, the roads were 8 kilometers (km) short of the target. An MOW analysis found that the cost of building the remaining 8 km was approximately \$100,000, within the unspent amount on civil works. Weather, transportation, and availability of equipment caused numerous delays to this project component. Still, if the Project had been extended to allow the full expenditure, the

¹² ADB. 1996. *Strategy for the Pacific: Policies and Programs for Sustainable Growth*, 67. Manila.

¹³ ADB. 2004. *A Pacific Strategy for the Asian Development Bank 2005–2009*. Manila.

quality of roads constructed on 'Eua could have been improved and the roads currently would be in much better shape. This was not an option for the Niuas as construction equipment was only available for a limited time, and a second visit to the islands was not financially viable. A comparison of actual and estimated project costs and financing is in Appendix 2.

23. The implementation arrangements envisaged at appraisal for the project did not change significantly. As the Executing Agency, MOF established a Project Steering Committee (PSC) to oversee the management and implementation of the Project. Although the PSC aimed to meet once every 2 months, meetings were less frequent than anticipated. MOF was responsible for maintaining the appropriate reporting, administrative, and financial links with ADB. MOF was unable to supply the OEM with any of the minutes or other documentation from the PSC meetings. The files had been archived, and an attempt to retrieve them failed.

24. MAF, MOW, and TTC were responsible for implementing their respective components. Each appointed its own project managers and support staff. MAF established a project office, which was directly responsible to the director of MAF and had strong links to MAF's Policy and Planning, and Extension and Research Divisions. MAF also appointed a project manager for its capacity strengthening, farming system improvement, market support, and development components. The presence of the capacity strengthening TA team in MAF helped project management, especially in the early stages. The Prime Minister's office also assisted coordination by appointing permanent island representatives on each island.

25. In 2003, MAF's name was changed to the Ministry of Agriculture, Forestry, and Food to recognize the importance of food and food security in the country. In 2005, the ministry became the Ministry of Agriculture and Food, as the Forestry Department was split off into its own ministry. These changes did not affect project implementation or the future sustainability of the Project. The name and nature of business of TTC also has changed since the Project began. In 2001, TTC was merged with the Tonga Communications Commission to form the Tonga Communications Corporation (TCC). At appraisal, TTC was responsible for the national telecom services, while TCC handled the international services. The merger brought these services together under TCC.

26. Two advisory TA grants for \$600,000¹⁴ and \$850,000¹⁵ were attached to the loan. The first grant, for strengthening the capacity of MAF, was intended to enhance agricultural production in the Niuas and 'Eua. The second advisory TA was to strengthen Tonga Trade, as well as improve post-harvest export processing and marketing opportunities for the country.

D. Procurement, Construction, and Scheduling

27. **Procurement.** All procurement financed under the loan was carried out in accordance with ADB's *Guidelines for Procurement*. MOW was responsible for civil works, through a mixture of force account and contractors, using its own equipment.

¹⁴ ADB. 1995. *Technical Assistance to the Kingdom of Tonga for Capacity Strengthening of the Ministry of Agriculture and Forestry*. Manila (TA 2467-TON, for \$600,000, approved on 12 December).

¹⁵ ADB. 1995. *Technical Assistance to the Kingdom of Tonga for the Institutional Strengthening of Tonga Trade*. Manila (TA 2468-TON, for \$850,000, approved on 12 December).

Vehicles, computers, and other equipment were procured through international shopping and direct purchase, while telecommunications equipment was procured through international competitive bidding.

28. As the civil works were small in scale and scattered in remote locations, international contractors were not interested in them. As such, MOW undertook them on a force account basis, or by hiring local contractors directly. Given the inter-island shipping constraints and MOW's construction schedule, it was convenient to hire a private contractor, working on the island at the time, to build the roads on Niuatoputapu. MOW designed the buildings, and construction contracts were awarded through local competitive bidding procedures. Buildings on each island were grouped for the purpose of tendering. With the approval of ADB, TTC procured the telecommunications equipment by following international competitive bidding procedures.

29. **Scheduling.** As envisaged at appraisal, the Project would be implemented over 5 years, beginning in March 1996 and finishing in August 2001 (Appendix 3). The late signing of the Loan Agreement on 29 April 1996 and loan effectiveness on 23 December 1996 delayed the start of the Project. An error in amortization scheduling in the Loan Agreement caused the 6-month delay in loan effectiveness.

30. On 'Eua, road construction did not start until September 1998, after MOW had completed an earlier road project there. Roads on the Niuas were completed in late 1999. All construction work on the Niuas was affected by the difficulty in, and high cost of, shipping equipment. At appraisal, the combination of work with that of the Transport Infrastructure Project¹⁶ loan had been anticipated, which would have allowed the use of the equipment on site for that project. However, the delay in loan effectiveness made this impossible. Buildings on 'Eua were completed in February 1999, while those on the Niuas were done by April 2000. Installation of telecommunications equipment began in early 1997, and the system was operational by the end of that year. This represented an excellent recovery after the delayed start.

31. A change from individuals to a single company contract delayed the recruitment of consultants. In July 1996, ADB provided to MAF a shortlist of individual consultants for capacity building. However, MAF rejected four of these, including the three highest ranked consultants, which required ADB to re-tender for consulting companies. The team finally was fielded in July 1997. The project implementation consultants' services began in June 1998 and were completed in February 1999. Despite some delays, the restructuring of MAF was completed substantially by project completion. The Tonga Trade TA started in January 1997. At the midterm tripartite review, the parties agreed to carry over unspent funds to continue the TA through 2000 due to staffing problems at Tonga Trade.

32. **Construction.** MOW road construction was less than satisfactory. It was hampered by some unreliable equipment, which resulted in poor compaction of some sections of the roads. In some cases, the quality and length of road construction fell short of the project target. The Project envisaged the construction of 57 km of new and improved agricultural road works, though only 49 km were constructed (para. 76). The

¹⁶ ADB. 1994. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance to the Kingdom of Tonga for the Transport Infrastructure Project*. Manila.

OEM discovered that the initial reason the remaining 8 km were not built was that the community could not decide where the roads should go.

33. The Government ensured that all civil works were carried out in compliance with the applicable environmental guidelines.

E. Design Changes

34. The scope did not change significantly during implementation. However, the training in the component covering the safe use of agrochemicals was changed to training in integrated pest management. This achieved the original objective, while providing farmers in the Niuaus with the opportunity to seek accreditation from MAF as organic suppliers.

F. Outputs

35. By improving infrastructure and communication facilities, the Project aimed to provide better marketing opportunities for farmers in the Niuaus and on 'Eua. Meanwhile, the capacity building and resources made available to MAF were to help farmers take advantage of these opportunities. As a result, farmers were expected to increase yields and areas cropped, and adopt more profitable cropping patterns.

1. MAF Capacity Strengthening

36. This component of the Project aimed to strengthen the agricultural extension services in the Niuaus and 'Eua, and to provide supporting research and trials work. The emphasis was on expanding the current work of MAF staff to include (i) baseline socioeconomic surveys, (ii) research and development of new crops, (iii) marketing and quality improvement, and (iv) improvement in farm management. This component was implemented without significant modifications to the appraisal proposals.

37. The Project improved the MAF facilities on 'Eua and the Niuaus by constructing new offices; renovating office space; and providing housing, training facilities, and transport for staff. Building construction was delayed due to the Government's difficulties in securing counterpart funds and physical difficulties in transporting materials to the Niuaus. The buildings are of good quality and are being used effectively. Each island has an agriculture committee that meets monthly, and farmers participate in regular meetings and training. The OEM visited the 'Eua and Niuatoputapu facilities. MAF has a good maintenance program in place; the 'Eua buildings were repainted in 2003.

38. The Project also supplied a 2-ton truck and a motorbike to 'Eua; a truck and a motorbike to Niuafu'ou; and a 4x4 pickup truck, a motorbike, and a boat to Niuatoputapu. Office furniture, including computers, also was supplied. Although the computers were used effectively, they no longer operate due to out-of-date technology and exposure to salt air in non-air-conditioned environments. The trucks are still operating, but the motorbikes have disappeared and the outboard motor for the boat no longer works.

39. This component also included a capacity strengthening TA (Appendix 4). The restructuring of MAF, which became a major task of this TA, was more difficult and time consuming than anticipated. As a result, the time limits set in the covenants for the restructuring were not met. The MAF extension teams were to establish participatory

benefit monitoring and evaluation (BME) systems. Further, these teams were to develop and administer assessments using verifiable indicators of change, including economic, social, and environmental assessments. The surveys were to be carried out in accordance with ADB's *Handbook on Benefit Monitoring and Evaluation*. However, these BME surveys and assessments were not undertaken, which reduced the information available for the OEM's evaluation of the Project.

2. Farming System Improvement

40. A community-based and integrated approach was to be used to increase and sustain agriculture production systems on the Niuas and 'Eua, and to improve the standard of living of rural households. This component also was to introduce new crops where appropriate, teach improved farm management of existing crops, and provide market access for farm and handicraft products.

41. The Project supported initial surveys of pests and diseases, animal health, and household nutrition status. It also established production and marketing potentials. Appropriate research and development was to be funded on the targeted islands, and the safe use of agrochemicals promoted. MAF extension staff was to work with local producers and dealers to develop small-scale demonstration crop processing facilities to be funded by the Project.

42. This component was implemented largely as planned at appraisal, except for the delays in providing project implementation consulting services. To support the implementation of this component, 11 person-months of international consulting services were provided. The services covered (i) post-harvest technology (3 person-months), (ii) training and extension (3 person-months), (iii) handicraft design (2 person-months), and (iv) marketing and small business (3 person-months). In addition, 3 person-months of local consulting services were provided to promote the safe use of agrochemicals. The consultants were to prepare training materials and assist MAF staff in undertaking training programs in village communities. The OEM verified that the core training materials were still available on MAF head office computers.

43. A team of three consultants and three local counterparts visited the Niuas and 'Eua, staying 1 week on each island to train extension staff and farmers. MAF conducted follow-up training in 2000. The Project established nurseries and on-farm trials on the islands to facilitate the introduction of new plants and techniques. During the evaluation mission, the MAF extension service had three demonstration vegetable gardens in villages in 'Eua, but little was happening on the Niuas. The staff is working mainly with women in producing tomatoes, lettuce, etc., to promote food security and generate cash income.

44. The Niuas have very limited fertile soil, and many people from Niuatoputapu have their gardens on the nearby island of Tafahi (5 km away). On this small but fertile island, farmers mainly grow kava. During the OEM, kava and handicrafts were the only income generating products on the Niuas. Thus, the objective of introducing new crops was not successful (Appendix 5).

3. Market Support and Development

45. The Project supported market development, providing funding for three processing, storage, and market buildings. Market information and training materials were provided for handicraft and tourism opportunities, as well as agricultural production. In addition, training courses were developed to cover market identification, product presentation and packaging, and basic small business management.

46. This component was implemented as planned, except—as with the other MAF buildings—construction was delayed. The quality of construction was satisfactory. The ‘Eua building has survived a cyclone, with some damage to the office, toilets, and surrounding fencing. While MOW has repaired the office and toilets, reconstructing the fence appears pointless. Although local public markets had been operating at these centers, they were open for less than a year. Competition from privately run markets and resistance to cost recovery charges kept patronage low. MAF is trying to rent the buildings for other purposes related to project objectives, such as pre-export storage of squash on ‘Eua, and work space and storage for handicrafts on the Niuas. However, MAF’s success has been limited. The OEM agrees with the PCR assessment that planning of this component appears to have suffered from a lack of attention to design and location, as well as a misguided attempt to have the facilities serve dual purposes. The combination of export storage facilities and produce markets, located on the wharf, did not work. Privately run produce markets on the island are smaller, less expensive to rent, and sensibly located in residential areas. Financial returns from the other uses of market facilities are negligible compared to the capital costs of the buildings.

47. A market information system was to be introduced through Tonga Trade to collect, analyze, and publish information for all sectors. An advisory TA was provided for institutional support to Tonga Trade. Key outputs from this were (i) an Internet system for gathering trade information; (ii) a Tonga Trade Web site; (iii) a Tonga Trade library; (iv) Tonga Trade newsletter and weekly radio broadcasts; (v) the Tonga and Fiji Islands bilateral trade fair; (vi) the Pacifika Trade Fair; and (vii) industry groups for vanilla, kava, squash, handicrafts, etc. (Appendix 6).

48. Discussions with the community on Niuatoputapu revealed that farmers have little incentive to produce agricultural produce for export, while they continue to suffer from transportation difficulties. At the time of the evaluation, air services to the Niuas and ‘Eua had not operated for 18 months, and the shipping service to the Niuas was only 4 times per year. ‘Eua, on the other hand, has daily shipping services that allow produce to get to the main agriculture market on Tongatapu by 7:30 a.m. 6 days a week. Farmers on ‘Eua stressed that their problem is access to overseas markets, as well as the transportation costs of exporting from their island.

4. Roads

49. The Project was to construct 40 km of roads on ‘Eua, though only 32 km had been built by project completion. MOW planned to complete the remaining section. However, OEM discussions with those involved revealed that the ‘Eua community could not decide where the remaining 8 km should be built. The ‘Eua road program was a source of concern for various reasons, including the rate of progress, the construction standards, and the financial and physical reporting. By March 1999, construction was considerably behind schedule due to a lack of machines and equipment. In July 1999,

MAF requested the suspension of 'Eua road works due to quality problems, and asked MOW to wait until the proper equipment arrives before resuming construction. At the October 2000 Tripartite Mission, the participants acknowledged that the 'Eua roads needed improvement to bring them up to standard in terms of road surface drainage, surface finishing, and clearing of vegetation in the center of the road. Although the Mission stated that overall road work was marginally satisfactory, it advised the MOW to suspend further 'Eua work due to cost overruns. The PSC meeting of March 2001 was advised that road works in 'Eua had ceased construction to review the actual money still available at MOW for this component of the Project. At project completion, some sections of the roads in 'Eua needed improvement, particularly roadside drainage and centerline vegetation, as a result of inadequate pavement material. The Government planned to address the quality issues under its routine maintenance program. However, the OEM's review of the road network and discussions with officials revealed that the Government had not done so for most roads. As a result, some roads were no longer suitable for agricultural access.

50. The construction of roads on the Niuas was delayed by difficulties in shipping construction equipment there. In addition, the poor characteristics of the volcanic-based fill material used affected the quality. The private contractor hired to undertake road works in Niuatoputapu also presented problems. MAF complained about the quality of Niuatoputapu roads, implementation delays, and the failure to construct roads to specifications. The contractor stated that the delays were due to heavy rains, while the quality problems resulted from MOW drawings not indicating areas of high gradient, swamps, and dense vegetation. Moreover, MOW selected a quarry on the island for the contract with substandard rock, and the rights to extract were delayed. Thus, construction was significantly more difficult and expensive than anticipated. During the October 2000 Mission, MOW and ADB agreed that the road contractor should rectify the problems, because the roads had not been constructed to specifications. Following several exchanges of letters between MOW and the private contractor's legal representatives, the private contractor relented and undertook further upgrading work.

5. Telecommunications

51. Under the Project, a private telephone service using a domestic satellite earth station replaced the community radiotelephone services on the Niuas. Underground cables were laid in Niuatoputapu, while poles were used for cabling in Niuafu'ou. Some of the procurement was linked with projects that TTC was undertaking elsewhere in Tonga, enabling the work on this component to be completed under budget. With the agreement of ADB, TTC used the savings to (i) install a community radiotelephone and fax on the island of Tafahi near Niuatoputapu, (ii) improve its office facilities on Niuafu'ou, and (iii) extend the telecommunications service. This element of the Project was implemented efficiently and effectively. From 2000 to 2004, subscribers on Niuatoputapu increased from 115 to 197, while subscribers on Niuafu'ou climbed from 70 to 92 (Appendix 7, Table A7.1). The number of calls originating in the Niuas has exceeded forecasts, and the system has been used for commercial and personal calls.

52. Unfortunately, the satellite system installed in the Niuas, which was controlled by Telstra in Australia, was withdrawn from service in 2003. As a result, TCC had to replace much of the equipment (Appendix 7, para. 4). This has increased capital costs, thereby delaying the time until the Project becomes self-financing. The telecommunications component was installed before MOW undertook the road component on Niuafu'ou,

which created a second problem. Ten poles had to be dug up and moved to accommodate the ensuing road alignment. Finally, treated timber was not used for the poles, which were eaten by sulfur and had to be replaced by 2003.

6. Water Supplies

53. As proposed at appraisal, 60 tank and piping water supply systems were installed, with work completed in February 1998. The Government had difficulty sourcing counterpart funds for this component, and eventually sought funds from the New Zealand Agency for International Development (NZAID). NZAID provided an estimated \$270,000 under its rural development program for the Niuas.

7. Community Funds

54. This component was not implemented as planned, and was judged not to have achieved its intended purpose. Under the Project, about \$220,000 in community funds were to be set aside on the three islands ('Eua and the two Niuas) as part of the Government counterpart contribution. However, the Government had difficulty sourcing funds. As a result, NZAID agreed in early 1998—with the concurrence of ADB and the Government—to set up funds for the Niuas at T\$25,000 per island. The Government's Central Planning Department coordinates the administration of the funds, which conforms to NZAID requirements. However, this setup is contrary to the arrangements specified in the RRP. As envisaged at appraisal, the island development committees and MAF would have stronger roles in community projects. Held at Tonga Development Bank offices, the funds were to be used for capital improvements that facilitate agriculture production, marketing, processing, handicrafts, or tourism.

55. The revised arrangements did not reflect the recommendations of the rural sociologist provided under the project preparatory TA (footnote 6), who suggested that these should be revolving funds, with repayment arrangements determined by the respective communities. Overall, funding has fallen about 80% short of requirements, with 'Eua receiving none. Several projects have been funded, including the fencing off of garden areas to prevent damage by pigs, and the development of a kava plantation. Even if full funding had been available, it is unknown whether the target communities could have used the funds completely and effectively.

8. Quarantine and Disinfection Equipment

56. The Project supported the construction of quarantine, disinfestation, and fumigation facilities on the Niuas to allow them to act as ports of entry for fruits and vegetables. The Project also provided a fumigation chamber to be located on Ha'apai, and a dry heat disinfection plant on Tongatapu. This part of the infrastructure component was implemented as planned. Poor wharf facilities and rough seas delayed the landing of incinerators on the Niuas. MAF needs the incinerators to destroy suspect material and assist in the preservation of the favorable pest and disease status of the Niuas. As planned, the equipment has been installed using Government funds. However, during the OEM, the equipment was no longer working on the Niuas.

G. Consultants

57. ADB provided two associated TA grants. One TA, for \$600,000 equivalent, was for capacity strengthening of MAF. Resources provided under this TA included consulting services, equipment, and operating costs. The other TA, for \$850,000 equivalent, was for institutional strengthening of Tonga Trade. MLCI was the Executing Agency for this TA, which included office equipment, vehicles, and operating costs.

58. To assist with the implementation of the Project, 25.5 person-months of international consulting services were provided to MAF (Appendix 4). The objective of the advisory TA was to develop the skills and ability of MAF staff to respond to technical and marketing queries raised by highly commercial farmers and merchants in the private sector. It also aimed to inform growers and traders about new market opportunities, and production and processing techniques. The consulting services comprised 18 person-months for an institutional development specialist, 3 person-months for a management information systems (MIS) specialist, 2 person-months for a BME specialist, and 2.5 person-months for a media communications expert.

59. The Government adopted a policy that the marketing of agricultural and other commodities should be rationalized under Tonga Trade, which was established within MLCI in 1995. The second advisory TA (Appendix 6) provided institutional support to Tonga Trade in the areas of (i) market development, (ii) trade information, (iii) trade policy, and (iv) trade promotion. The TA included 20.5 person-months of consultancy inputs covering (i) an export marketing development specialist (12 person-months) to assist the director of Tonga Trade; (ii) an MIS specialist (5 person-months) to design, create, and install a computer database and local area network for interested users; and (iv) short-term specialists (3.5 person-months) for training in the development of marketing plans, presentational skills, and database analysis.

60. In December 1998, ADB agreed to carry over unspent funds from the Tonga Trade TA to continue the project through 2000. The carryover was justified based on problems completing project activities within the original 2-year time frame due to Tonga Trade staffing issues. The OEM believes that concluding the TA at the end of 1998 would have been more prudent. The Government's commitment to Tonga Trade during the Project was unsatisfactory, and this was unlikely to change. In the end, the TA continued without the required counterparts, producing an ineffective outcome.

61. To assist with loan implementation, 11 person-months of international consulting services also were provided to MAF. The short-term consultancies covered post-harvest technology (3 person-months), training and extension (3 person-months), handicraft design (2 person-months), and marketing and small business operation (3 person-months). In addition, 3 person-months of local consulting services were required, covering the safe use of agrochemicals and farmer training for market development.

H. Loan Covenants

62. Most of the 13 loan covenants were complied with. However, the reorganization of MAF did not occur within the specified time frame, delaying other components of the Project. Covenants on the staffing and independence of Tonga Trade were not met, nor was the requirement for private sector funding of 50% of the organization's costs. The latter covenant now is acknowledged to be unrealistic. The RRP did not indicate that the potential

impact of this covenant was adequately researched in terms of (i) the capacity of the export sector to contribute to the costs of Tonga Trade, and (ii) the appropriate size for Tonga Trade in relation to anticipated benefits. This covenant was expressed inflexibly; might not have considered adequately the limited capacity of the export sector to provide funds; and created additional risk by forcing Tonga Trade to impose de facto taxes on exports, which would have been counterproductive to the purposes of the TA. The OEM concurs with this assessment. Changes to the agreed arrangements for managing the community funds, less than required funding for the Niuaus, and failure to establish a fund for 'Eua resulted in minimal compliance with the community funds covenant.

I. Policy Setting

63. Policies did not change significantly during the implementation period.

III. PERFORMANCE ASSESSMENT

A. Overall Assessment

64. Overall, the Project is assessed as unsuccessful although on the borderline of partly successful (based on a four-category system of highly successful, successful, partly successful, or unsuccessful). The objectives were well founded on national social and economic needs, the Government's development policy, and ADB's strategy for Tonga. However, the OEM concluded that the large expenditures on infrastructure—the telephone system in particular—never were going to have a significant impact on agriculture exports or household incomes in the Niuaus, especially when the Project did not address the key issue of transportation. The Project's impact on the growth of agriculture activity on 'Eua is difficult to ascertain, as other factors (e.g., squash export opportunities) have contributed significantly. The OEM does not expect the Project to have any impact on reducing inter-island income disparities.

65. The overall assessment is based on the four criteria: relevance (20% weight), effectiveness (30%), efficiency (30%), and sustainability (20%).¹⁷ Individual criterion ratings were in whole numbers from 0–3 in increasing order of project performance.¹⁸ The overall assessment is summarized in the following Table 1.

¹⁷ These are the standard weights used by OED.

¹⁸ For example, irrelevant (0), less relevant (1), relevant (2), and highly relevant (3).

Table 1: Overall Performance Assessment

| Criterion | Weight (%) | Assessment | Rating Value | Weighted Rating |
|-----------------------------------|-------------------|-------------------------------|---------------------|------------------------|
| 1. Relevance | 20 | Partly Relevant | 1.0 | 0.2 |
| 2. Effectiveness | 30 | Less Effective | 1.0 | 0.3 |
| 3. Efficiency | 30 | Inefficient | 0.0 | 0.0 |
| 4. Sustainability | 20 | Less Likely to be Sustainable | 1.0 | 0.2 |
| Overall Rating^a | | Unsuccessful | | 0.7 |

^a Highly successful > 2.7, successful $2.7 \leq S \leq 1.6$, partly successful $1.6 < PS \leq 0.8$, unsuccessful < 0.8.

B. Relevance

66. The Project is assessed as partly relevant. The rating is based on (i) relevance to the country's priorities, as well as ADB's country and sector strategies; (ii) adequacy of the justifications for the respective interventions; and (iii) appropriateness of the design to achieve the intended outcomes and impacts.

67. The Project was consistent with the high priority the Government accorded to the development of the agriculture sector for maintaining adequate rural living standards, providing food security, generating export earnings, and reducing dependence on food imports. SDPVI outlined the Government's development objectives and strategies for the economy at the time of appraisal, which were to achieve sustainable economic growth with a more equitable distribution of income.

68. The project interventions, on the other hand, are rated less relevant. The OEM believes the significant focus on infrastructure is likely to contribute only minimally to project objectives. The telecommunications component—the largest single component—was irrelevant to the objectives of increasing agriculture productivity on the outer islands, reducing income disparities between islands, and stimulating exports. The main impact of this component has been to increase in households' expenditure without any corresponding increase in income. Roads—the second largest component—could not improve agriculture exports on the Niuaus without addressing how the produce was to get from the wharf to the market. The market support and development interventions, which entailed the construction of storage and market facilities on the wharves, were only partly relevant for the same reason. The significant expenditure on Tonga Trade, which was envisaged as a catalyst for increased agriculture exports, was somewhat misplaced, as Tongan farmers always have been responsive to market signals. The other significant agriculture intervention was to build offices and housing on the three islands for MAF staff. In the OEM's view, this has only a limited relationship to the objective of increasing household incomes or increasing agriculture exports.

69. The timing of the Project also does not appear to have been appropriate. The restructuring of MAF, which the appraisal document stated was to be completed before the Project commenced, instead was only beginning. Thus, the restructuring became a major focus of the institutional strengthening TA. The Tonga Trade interventions were too early and intensive. Tonga Trade was in its infancy, with no full-time staff for the

majority of the Project, which contributed to its ineffectiveness. The goal of privatizing Tonga Trade was also unrealistic. The OEM believes that undertaking these components was inappropriate before the local ministries fully committed to the Project. The Tonga Trade component was rated irrelevant.

C. Effectiveness

70. The Project is assessed as less effective. The evaluation of effectiveness considers whether intended outcomes were achieved, or are likely to be. It also takes into account the influence of the implementation process on project outcomes, including the effect of delays in outcomes and implementation side effects.

71. The MAF restructuring introduced the desired changes, improving the organization's ability to serve the farmers of Tonga. However, the shortage of full-time counterpart staff undermined its long-term effectiveness. The project design noted that MAF capacity on the targeted islands was limited to mainly administrative operations. The Project has contributed to capacity development of staff on the outer islands through the MAF Extension Unit facilities, including the use of training rooms on the islands and the introduction of demonstration crop farms. These still existed at the time of evaluation. However, the OEM did not observe any noticeable increase in agriculture productivity or exports on the islands resulting from the MAF restructuring (Appendix 5). The MAF extension teams were to establish participatory BME systems, as well as develop and administer assessments. However, these BME surveys and assessments were not undertaken, which reduced the information available for the OEM's evaluation of the Project. As a result the MAF TA was rated less effective.

72. The March 2000 review of the Project found that the irregular shipping services were the most binding constraint in the Niuaus, causing the low volume of trade that failed to attract commercial shipping services to the remote islands. The RRP and subsequent reviews, including the PCR, continued to rely on private sector shipping services being introduced between the Niuaus and Samoa (clearly an unprofitable route). The OEM considers this reliance misplaced. As the Project did not address the critical issue of shipping, agricultural development in the Niuaus continued to be restricted. As a result, road development and farming systems development were less effective than they could have been.

73. Poor road construction and incomplete roads in 'Eua also contributed to this component being less effective. The telecommunications component was rated less effective due to its limited impact on the project objectives to increase agriculture productivity and reduce income disparities between households on different island groups. The OEM questions such a large expenditure on a component that is only loosely linked to the project's objectives. Further, the market and storage buildings on the three islands were ineffective. Only the 'Eua market opened for any length of time, but it also closed down within a year. Almost no goods for shipping are stored in these facilities, apart from the 'Eua shed being rented out for a month around November each year for squash exports. The market support and development component did not contribute to an increase in agriculture activity on the islands.

74. The OEM attended a presentation of findings for the Strategic Development Plan Eight. Community consultations on development issues and concerns, held between June and October 2005, were a component of this process. The key findings include the

following: (i) the standard of agricultural and public roads needs to be improved ('Eua representatives); (ii) wharf and roads need to be upgraded for more efficient transportation (Niuafu'ou representatives); (iii) the inter-island ferry should visit the island eight times a year instead of four (Niuatoputapu representatives); (iv) the main source of income is weaving and there is need for a secure market for products; and (v) Government needs to arrange a market for outer island products to help enhance this source of income (participants from Niuafu'ou Island). The planners undertaking the consultations recognized the need for market research to secure international market outlets for local products. These comments suggest that (i) the project roads have been maintained poorly, and require upgrading or maintenance; and (ii) marketing and market information are still problems for the remote islands. Thus, these two key components of the Project appear to have been ineffective.

D. Efficiency

75. The Project is assessed as inefficient. The EIRR, estimated at 16% during appraisal, was reduced to 3.3% during the OEM. The Project has not increased agriculture production or exports on the Niuaus. Agriculture production and exports on 'Eua have risen, though determining whether the Project contributed to these increases is difficult. The main commodities—squash, kava, and vanilla—were well established and growing before the Project (Appendix 5).

76. The Project improved the MAF facilities on 'Eua and the Niuaus by (i) constructing new offices; (ii) renovating office space; and (iii) providing housing, training facilities, and transport for staff. Although building construction was delayed due to the Government's difficulties in securing counterpart funds and physical difficulties in transporting materials to the Niuaus, this component is rated efficient. The farming systems improvement component was implemented largely as planned at appraisal, except for the delays in providing project implementation consulting services. Construction of the roads component, which was to include 57 km of new and improved agricultural road works, was delayed considerably on the Niuaus due to problems getting construction equipment shipped there. Meanwhile, the 'Eua roads were 8 km short of the target at project completion. The road component, therefore, is rated less efficient. The OEM believes the Project should have been more cognizant of the logistical difficulties involved in constructing buildings and roads on the Niuaus.

77. Implementation of the telecommunications component cost less than estimated at appraisal. This subcomponent was expected to generate its own revenue stream and break even at the end of 5 years. The OEM considers this unrealistic for such a small population base. Operating costs have been relatively high (Appendix 1), and the Niuafu'ou operation in particular is financially marginal. In addition, some of the equipment had to be replaced, with all the telephone poles, after only 3 years. Thus, the likelihood of breaking even in the medium term remains slim. The financial internal rate of return of this component has been reestimated at -9.8%, compared with 4–5% at appraisal. Telephone charges can barely cover management and operating costs, but are insufficient to meet the cost of debt servicing under the subsidiary loan, or the replacement capital expenditure. Although the component was implemented quickly and efficiently, it is a cash drain on its customers and the business supplying the service. Thus, it is rated inefficient.

78. The Tonga Trade component is rated less efficient. Expensive consulting services returned poor value due to changing policies regarding Tonga Trade's role and its lack of staff. The mandate for developing Tonga Trade involved identifying and implementing methods to ensure that the organization is at least 50% self-financing after 2 years. This was an extremely ambitious target that reflected a lack of understanding of the capacity of the private agriculture sector in Tonga. The OEM believes the large expenditure on this component will never significantly increase Tonga's agriculture exports.

E. Sustainability

79. The Project is assessed as less likely to be sustainable. Ownership of the Project is considered weak. This was demonstrated by (i) the poor maintenance of the road system in the Niuas and 'Eua, (ii) the reluctance of MAF to restructure its operations in a timely fashion, (iii) the reluctance of MAF and Tonga Trade to work together on establishing a single agriculture marketing information system, and (iv) the weak political commitment to establishing Tonga Trade.

80. The MAF restructuring was achieved without an increase in budget requirements. MAF is now fully staffed and its effectiveness has increased, indicating that the MAF structure is sustainable. The market and storage facilities, which barely have been used since completion, are less likely to be sustainable.

81. The technology for the telecommunications system installed in the Niuas was out of date within 5 years, and components had to be replaced. Untreated timber was used for the telephone poles in Niuafo'ou, which required them to be replaced within 5 years as well. However, given the Government's commitment to maintaining the telecommunications to the Niuas, at a subsidized rate, this component is sustainable.

82. The project review in 2000 found that roads constructed on 'Eua were the most useful output of the Project. However, they were not considered sustainable due to the low standard of construction and the lack of a proper maintenance schedule. Roads on the Niuas also have suffered from a lack of maintenance.

IV. OTHER ASSESSMENTS

A. Environmental

83. The Project was classified as environmental category B.¹⁹ An environmental impact assessment, carried out as part of the preparation process, concluded that only a few project activities have the potential to generate significant environmental effects. While the Project was expected to lead to some expansion and intensification of agricultural land use, it largely aimed to build on the traditional Tongan farming system of multicropping and agroforestry.

¹⁹ Projects are categorized as "B" if they could have some adverse environmental impacts, but of lesser degree or significance than those for category A projects. An initial environmental examination (IEE) is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

84. The Project built three processing, storage, and market buildings on government land at the island wharves. They did not require the resettlement of any families, and no families incurred the permanent or temporary loss of assets or other socioeconomic losses. The 32 km of road works constructed during the Project involved the upgrading of bush tracks to roads, rather than the construction of new roads. As new land was not required for the buildings or roads, the Government did not have to pay compensation to landowners.

85. The PCR stated that the increase in the use of agrochemicals and fertilizers was limited to relatively small areas for coffee and watermelons. The Project included consulting services to educate farmers about the appropriate use of agrochemicals and fertilizers.

86. The implementation of the road component has led to minor erosion problems, though the consequences are not serious. The environmental assessment report stated that some erosion might occur if roads are not constructed and maintained properly. Project roads have generated additional runoff. Nonetheless, although the OEM found that agriculture road maintenance was generally lacking during its visit to the islands of 'Eua and Niuatoputapu, erosion was not a serious problem. A problem exists, however, with some of the roads being used infrequently, which allowed them to become overgrown by surrounding vegetation. The Project was not designed to encourage big increases in areas under cultivation. Except for squash, most crops do not involve major soil disturbance. The use of chemical herbicides, pesticides, and fertilizers is limited in Tongan agriculture, especially on the outer islands. The Project introduced integrated pest management to farmers.

87. The Government carried out all civil works in compliance with the applicable environmental laws and regulations.

B. ADB Performance

88. ADB's performance is rated less than satisfactory. The disbursements were timely, and responses to requests for funding satisfactory. The project design process was protracted, though the delay contributed to beneficial revisions, including a reduction in the number of components. The OEM agrees with the PCR that the components could have been reduced further by combining the components for strengthening MAF and improving farming systems, as their inputs and outputs are difficult to distinguish from each other. Overall, the scope of the Project was too wide, stretching the Government's human resources. As a result, the implementation of activities was less efficient and effective.

89. ADB did not undertake a formal midterm review, as required by the RRP. ADB supervised the Project regularly, with an officer from its South Pacific Regional Mission in Port Vila, Vanuatu, handling the review missions. However, this approach did not solve the Project's recurring problem with poor road construction. The South Pacific Regional Mission helped the Government meet ADB requirements. Further, ADB showed flexibility regarding TA revisions, reallocation of proceeds to accommodate financial constraints of the Government, and procurement of telecommunications equipment. If ADB had been inflexible on these matters, some components might not have been completed. However, the OEM felt that problems with the privatization and

funding of Tonga Trade could have been resolved earlier. This would have reduced significantly the amount of wasted effort by the TA.

90. The Project Review Mission of October 2000 stated that isolating the project impact from the wide range of other projects (transport infrastructure, etc.) and activities was difficult. While the 'Eua projections appear reasonable, the forecast eightfold increase in agriculture for the Niuas was unrealistic. Because the Project did not address the shipping issue, the OEM considers the expectation of large increases in exports and cash income resulting from the Project as naive. The telecommunications component was poorly formulated, as it imposed considerable burden on households without any corresponding increase in incomes. Therefore, ADB's performance is rated less than satisfactory.

C. Borrower's Performance

91. The Borrower's performance is rated less than satisfactory. The OEM acknowledges the difficulties associated with any project seeking to assist the development of the outer islands. Loan effectiveness was delayed significantly. Except for the telecommunications component, which was implemented rapidly, components were delayed by the Government's inability to mobilize counterpart funds. Recruitment of TA specialists for MAF also was delayed, and execution of institutional strengthening components was slower than expected. The deployment of road construction equipment by MOW was delayed.

92. The Project was to support operation and maintenance costs for the physical facilities built under the Project until the end of implementation. At that time, the respective line agencies were expected to take over that responsibility. MOF, in conjunction with MAF, MOW, and the permanent island representatives, were responsible for drawing up an action plan to ensure the proper maintenance of the facilities and equipment provided under the Project. The participating communities were to be encouraged to accept ownership, and hence responsibility, for maintaining installed infrastructure. This was especially important on the remote Niuas, where logistical problems hamper the Government's ability to carry out non-emergency maintenance. The plan was never produced, and subsequent road maintenance has been less than satisfactory.

93. Throughout the Project, the Government assured that the staffing issues with Tonga Trade would be resolved. At the OEM, the staff was less than half the size committed at appraisal time. The Government also failed to resolve the conflict between Tonga Trade and MAF over export marketing of agriculture produce. At the OEM, duplication of effort in this area continued. The BME surveys and assessments also were not undertaken.

D. Technical Assistance

94. The MAF TA performance is rated successful. Once the changes to the terms of reference (TOR) were agreed upon, the MAF implementation consultancy was effective in introducing the desired changes to the ministry. Although the MAF institutional strengthening TA (Appendix 4) required some reorientation and an extension, it was implemented effectively. The performance of the Tonga Trade TA (Appendix 6) is rated partly successful. The OEM views the rationale for Tonga Trade, based on the desire to

control market fluctuations, as inappropriate. The OEM questioned the timing of the intervention, which undermined its relevance. Further, the TA's effectiveness, efficiency, and sustainability were reduced by a shortage of full-time counterpart staff, inadequate local funding, poor cooperation with other agencies, and difficulty in meeting the private sector funding covenant.

V. LESSONS AND FOLLOW-UP ACTIONS

A. Lessons

95. During the Project, a number of important lessons emerged. First, the strengthening of MAF has resulted in a more effective organization that is better able to serve the farmers of Tonga. However, the restructuring took much longer than anticipated, and long-term resident consultants would have been more effective in maintaining progress than the intermittent inputs. Since capacity constraints are significant in microstates, ADB must be sensitive to the need for ongoing support at times of significant change if it plans to encourage ministry restructuring.

96. Second, the experience with the Tonga Trade TA exemplifies the difficulties of applying large-scale assistance to small and new organizations. Tonga Trade did not have the staff or financial resources to use the TA effectively, especially the training component, when it was provided. In addition, the continuing understaffing of Tonga Trade, as well as its subsequent changes in orientation, suggests that support for the organization's direction and role—as specified in the RRP—was not universal at higher levels of Government. The scale of a TA must recognize the size and strength of the recipient institution, and ensure general political support for the TA. Without such support, successful institutional change is impossible. The OEM believes that support to Tonga Trade should have been slowed or rescheduled at the first project review.

97. The goal of privatizing Tonga Trade within a short period also was unrealistic. It did not reflect the limited size and strength of the agriculture export sector, which was expected to assume the major role in financing and directing the organization. The expectations of the private sector far exceeded its ability to deliver. The OEM questions whether the spending envisaged for Tonga Trade was justified, given the size of the export sector.

98. The telecommunications component was implemented efficiently, and has improved the target population's communications with the outside world. However, this phone system will be a cash drain to TTC for some time. Although TTC has contributed to the achievement of important development goals, its weak financial performance might conflict with its new corporate status. When using commercially orientated organizations to achieve non-commercial objectives, ADB and the Government should acknowledge possible conflicts. Further, they should gear financial arrangements to realistic assessments of commercial outcomes. The OEM believes the new telephone system is connected only tenuously with the project objectives to increase agriculture productivity on the outer islands, reduce income disparities between households on different island groups, and stimulate agriculture exports.

99. More positively, beneficiaries have appreciated the provision of agriculture access roads, which have produced social and economic benefits. The OEM agrees with

the PCR conclusion that the provision of roads might be the most efficient way to stimulate economic growth in areas with agricultural land not served by roads.

B. Follow-Up Actions

100. Recommendations from the ADB-funded Agriculture Sector Study in 2005²⁰ should be implemented. The review recommends a development program to be implemented over 5–10 years. It is based on a strategy of first removing policy and other distortions that have constrained the development of agriculture in particular and the economy in general. The strategy seeks to establish a neutral investment environment that allows resources (land, labor, and capital) to flow to their most productive uses, maximizing the GDP produced from Tonga's available resources. Such a strategy avoids the problems of subsidizing the development of one sector of the economy at the expense of others.

101. The program is to be implemented in 3 phases:

- (i) **Policy and institutional development (phase 1).** This phase involves the adoption of a sound set of agriculture policy principles, as well as the establishment of appropriate private sector institutions, to ensure effective implementation of the development strategy.
- (ii) **Policy reform (phase 2).** Through this institutional framework, the program will work with the Government to remove impediments to investment in the sector. With the completion of phase 2, the agriculture sector's efficiency and ability to generate income and employment would be enhanced substantially.
- (iii) **Investment (phase 3).** If justified, phase 3 will involve a range of public good and infrastructure investments to support the further development of the sector. In the past, most such investments failed because of poor conception and implementation, as well as a distorted investment environment. This phase also would involve direct TA to the private sector to enable the efficient identification and development of investment opportunities, and to reduce the cost of finance.

²⁰ Study is still to be formally approved.

PROJECT ECONOMIC INTERNAL RATE OF RETURN

| Item | Year | | | | | | | | | | |
|----------------------------|------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 20 |
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2015 | |
| A. 'Eua | | | | | | | | | | | |
| 1. At PCR | | | | | | | | | | | |
| a. Yams | 0.0 | 1,131.0 | 1,161.0 | 1,192.0 | 1,222.0 | 1,253.0 | 1,283.0 | 1,314.0 | 1,344.0 | 1,375.0 | 1,500.0 |
| b. Taro | 0.0 | 20.0 | 40.0 | 59.0 | 79.0 | 99.0 | 119.0 | 138.0 | 158.0 | 178.0 | 375.0 |
| c. Kava (Dried) | 0.0 | 8.0 | 16.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 |
| d. Vanilla | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 250.0 | 400.0 | 800.0 |
| e. Squash | 0.0 | 8.0 | 800.0 | 800.0 | 800.0 | 800.0 | 800.0 | 800.0 | 800.0 | 800.0 | 800.0 |
| f. Tapa Cloth | 0.0 | 0.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 |
| Total | 0.0 | 1,167.0 | 2,767.0 | 4,701.0 | 4,751.0 | 4,802.0 | 4,852.0 | 5,002.0 | 5,202.0 | 5,403.0 | 6,125.0 |
| 2. Revised (at OEM) | | | | | | | | | | | |
| a. Yams | 0.0 | 565.5 | 580.5 | 596.0 | 611.0 | 626.5 | 641.5 | 657.0 | 672.0 | 687.5 | 750.0 |
| b. Taro | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| c. Kava (Dried) | 0.0 | 8.0 | 16.0 | 1,000.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 | 1,900.0 |
| d. Vanilla | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 922.0 | 1,400.0 | 240.0 | -126.0 | 800.0 |
| e. Squash | 0.0 | 8.0 | 800.0 | 800.0 | 600.0 | 640.0 | 1,000.0 | 1,200.0 | 600.0 | 400.0 | 800.0 |
| f. Tapa Cloth | 0.0 | 0.0 | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 |
| Total | 0.0 | 581.5 | 1,771.5 | 2,771.0 | 3,486.0 | 3,541.5 | 4,838.5 | 5,532.0 | 3,787.0 | 3,236.5 | 4,625.0 |
| Revised (%) | | 50 | 64 | 59 | 73 | 74 | 100 | 111 | 73 | 60 | 76 |
| B. Niuatoputapu | | | | | | | | | | | |
| 1. At PCR | | | | | | | | | | | |
| a. Yams | 0.0 | 10.0 | 19.0 | 29.0 | 38.0 | 48.0 | 57.0 | 67.0 | 76.0 | 86.0 | 180.0 |
| b. Taro | 0.0 | 457.0 | 474.0 | 491.0 | 508.0 | 525.0 | 542.0 | 559.0 | 575.0 | 592.0 | 688.0 |
| c. Kava (Dried) | 0.0 | 8.0 | 16.0 | 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 |
| d. Vanilla | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 400.0 | 700.0 | 750.0 | 750.0 | 750.0 | 750.0 |
| e. Pandanus Mats | 0.0 | 0.0 | 550.0 | 550.0 | 550.0 | 550.0 | 550.0 | 550.0 | 550.0 | 550.0 | 550.0 |
| Total | 0.0 | 475.0 | 1,059.0 | 2,170.0 | 2,296.0 | 2,623.0 | 2,949.0 | 3,026.0 | 3,051.0 | 3,078.0 | 3,268.0 |

| Item | Year | | | | | | | | | | |
|----------------------------|------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 20 |
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2015 | |
| 2. Revised (at OEM) | | | | | | | | | | | |
| a. Yams | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| b. Taro | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| c. Kava (Dried) | 0.0 | 8.0 | 16.0 | 90.0 | 90.0 | 160.0 | 160.0 | 80.0 | 80.0 | 80.0 | 80.0 |
| d. Vanilla | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| e. Pandanus Mats | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Total | 0.0 | 8.0 | 116.0 | 190.0 | 190.0 | 260.0 | 260.0 | 180.0 | 180.0 | 180.0 | 180.0 |
| C. Niuafo'ou | | | | | | | | | | | |
| 1. At PCR | | | | | | | | | | | |
| a. Yams | 0.0 | 10.0 | 19.0 | 29.0 | 38.0 | 48.0 | 57.0 | 67.0 | 76.0 | 86.0 | 180.0 |
| b. Taro | 0.0 | 457.0 | 474.0 | 491.0 | 508.0 | 525.0 | 542.0 | 559.0 | 575.0 | 592.0 | 688.0 |
| c. Vanilla | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 400.0 | 700.0 | 750.0 | 750.0 | 750.0 | 750.0 |
| d. Water Melon | 0.0 | 707.0 | 714.0 | 721.0 | 728.0 | 735.0 | 742.0 | 749.0 | 756.0 | 763.0 | 770.0 |
| e. Kava | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| f. Various | 0.0 | 0.0 | 0.0 | 400.0 | 400.0 | 400.0 | 400.0 | 400.0 | 400.0 | 400.0 | 400.0 |
| Total | 0.0 | 1,174.0 | 1,207.0 | 1,641.0 | 1,774.0 | 2,108.0 | 2,441.0 | 2,525.0 | 2,557.0 | 2,591.0 | 2,788.0 |
| 2. Revised (at OEM) | | | | | | | | | | | |
| a. Yams | 0.0 | 100.0 | 150.0 | 200.0 | 200.0 | 150.0 | 300.0 | 400.0 | 400.0 | 400.0 | 400.0 |
| b. Taro | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| c. Vanilla | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| d. Water Melon | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| e. Kava | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 50.0 | 25.0 | 75.0 | 50.0 | 50.0 | 50.0 |
| f. Various | 0.0 | 0.0 | 0.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total | 0.0 | 100.0 | 150.0 | 240.0 | 265.0 | 240.0 | 365.0 | 515.0 | 490.0 | 490.0 | 590.0 |
| Total RRP | 0.0 | 1,649.0 | 2,266.0 | 3,811.0 | 4,070.0 | 4,731.0 | 5,390.0 | 5,551.0 | 5,608.0 | 5,669.0 | 6,056.0 |
| Total Revised | 0.0 | 108.0 | 266.0 | 430.0 | 455.0 | 500.0 | 625.0 | 695.0 | 670.0 | 670.0 | 770.0 |
| Revised % | | 7% | 12% | 11% | 11% | 11% | 12% | 13% | 12% | 12% | 13% |

Economic Budget (Aggregated)
Crops Production Benefits

| Item | Year | | | | | | | | | | |
|-----------------------|-------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 20 |
| | | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2015 |
| Income | | | | | | | | | | | |
| Eua | 0.0 | 178.8 | 364.5 | 557.4 | 777.8 | 808.1 | 852.6 | 904.5 | 950.0 | 994.0 | 1,012.2 |
| Niuas | 0.0 | 138.6 | 238.8 | 334.4 | 456.9 | 480.5 | 512.4 | 543.2 | 568.0 | 592.2 | 600.6 |
| Total | 0.0 | 317.4 | 603.3 | 891.8 | 1,234.7 | 1,288.6 | 1,365.0 | 1,447.7 | 1,518.0 | 1,586.2 | 1,612.8 |
| Revised Income | | | | | | | | | | | |
| Eua | 0.0 | 89.1 | 233.4 | 328.6 | 570.7 | 596.0 | 850.2 | 1,000.3 | 691.6 | 595.4 | 764.3 |
| Niuas | 0.0 | 9.1 | 28.0 | 37.7 | 51.1 | 50.8 | 59.4 | 68.0 | 67.9 | 70.0 | 76.4 |
| Total | 0.0 | 98.2 | 261.4 | 366.3 | 621.8 | 646.8 | 909.6 | 1,068.3 | 759.4 | 665.4 | 840.7 |
| Purchased Inputs | | 26.0 | 19.5 | 23.1 | 29.3 | 0.7 | 0.4 | | | | |
| Labor | | 5.6 | 9.2 | 13.7 | 14.6 | 10.2 | 5.8 | | | | |
| Investment Costs | | 31.6 | 28.7 | 36.8 | 43.9 | 10.9 | 6.2 | | | | |
| Purchased Inputs | | 36.0 | 67.5 | 95.5 | 128.4 | 130.0 | 132.2 | 134.5 | 136.0 | 137.3 | 137.5 |
| Labor | | 40.7 | 77.0 | 112.6 | 159.2 | 165.2 | 172.3 | 181.6 | 183.0 | 185.4 | 186.0 |
| Operating Costs | | 76.7 | 144.5 | 208.1 | 287.6 | 295.2 | 304.5 | 316.1 | 319.0 | 322.7 | 323.5 |
| Production Cost | | 108.3 | 173.2 | 244.9 | 331.5 | 306.1 | 310.7 | 316.1 | 319.0 | 322.7 | 323.5 |
| Other Costs | | 19.5 | 18.5 | 18.5 | 18.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| MAF ADTA | | 224.4 | 205.0 | 197.3 | | | | | | | |
| Tonga Trade ADTA | | 151.6 | 181.0 | | | | | | | | |
| Project Costs | 313.0 | 2,015.0 | 627.0 | 896.0 | 627.0 | 64.6 | 64.6 | 64.6 | 64.6 | 64.6 | 64.6 |
| | 313.0 | 2,410.5 | 1,031.5 | 1,111.8 | 645.5 | 72.1 | 72.1 | 72.1 | 72.1 | 72.1 | 72.1 |
| Outflows | 313.0 | 2518.8 | 1204.7 | 1356.7 | 977.0 | 378.2 | 382.8 | 388.2 | 391.1 | 394.8 | 395.6 |
| Telecoms Benefits | | 64.6 | 64.6 | 64.6 | 64.6 | 64.6 | 43.0 | 9.0 | 33.0 | 33.0 | 33.0 |
| Cash Flow | (313.0) | (2356.0) | (878.7) | (925.8) | (290.6) | 333.2 | 569.8 | 689.1 | 401.3 | 303.6 | 478.1 |
| EIRR | 3.3% | | | | | | | | | | |

ADTA = advisory technical assistance, MAF = Ministry of Agriculture and Forestry, OEM = Operations Evaluation Mission, PCR = project completion report, RRP = report and recommendation of the President.

Source: Asian Development Bank estimates.

PROJECT COST: ESTIMATED VERSUS ACTUAL

| Subproject | Original Cost Estimates (\$'000) | | | Actual Cost (\$'000) | | | Changes (%) | | |
|--|-------------------------------------|--------------|--------------|-------------------------|--------------|--------------|----------------|---------------|---------------|
| | Foreign | Local | Total | Foreign | Local | Total | Foreign | Local | Total |
| A. Investment Cost | | | | | | | | | |
| 1. Civil Works | | | | | | | | | |
| a. Buildings | 324 | 972 | 1,295 | 895 | 111 | 1,005 | 176.3 | (88.6) | (22.4) |
| b. Roads | 201 | 602 | 802 | 740 | 94 | 835 | 268.9 | (84.3) | 4.0 |
| c. Water Supply | 90 | 90 | 180 | 0 | 272 | 272 | 0.0 | 202.3 | 51.2 |
| Subtotal (1) | 614 | 1,663 | 2,277 | 1,635 | 477 | 2,111 | 166.1 | (71.3) | (7.3) |
| 2. Vehicles | 92 | 111 | 203 | 93 | 56 | 149 | 1.3 | (49.4) | (26.4) |
| 3. Equipment and Furniture | 112 | 112 | 225 | 0 | 96 | 96 | 0.0 | (14.8) | (57.4) |
| 4. Telecommunications Equipment | 1,335 | 445 | 1,779 | 1,209 | 433 | 1,642 | (9.4) | (2.6) | (7.7) |
| 5. Consulting Services | | | | | | | | | |
| a. Training | 3 | 9 | 11 | 3 | 8 | 11 | 0.0 | (5.9) | (4.4) |
| b. Specialist Services (Local) | 0 | 18 | 18 | 16 | 19 | 35 | 0.0 | 4.4 | 92.3 |
| c. Specialist Services (Foreign) | 204 | 0 | 204 | 230 | 0 | 230 | 12.5 | 0.0 | 12.5 |
| Subtotal (5) | 207 | 27 | 234 | 249 | 27 | 276 | 20.0 | 1.1 | 17.9 |
| 6. Research and Development | | | | | | | | | |
| a. Research Labor | 0 | 49 | 49 | 0 | 34 | 34 | 0.0 | (30.0) | (30.0) |
| b. Travel and Accommodation | 17 | 50 | 67 | 0 | 47 | 47 | 0.0 | (6.7) | (30.0) |
| c. Training Materials and Publications | 22 | 67 | 90 | 0 | 63 | 63 | 0.0 | (6.7) | (30.0) |
| Subtotal (6) | 39 | 166 | 206 | 0 | 144 | 144 | 0.0 | (13.5) | (30.0) |
| Total (A) | 2,399 | 2,524 | 4,923 | 3,185 | 1,233 | 4,418 | | | |
| B. Recurrent Costs | | | | | | | | | |
| Operation and Maintenance | 0 | 125 | 125 | 0 | 120 | 120 | 0.0 | (4.3) | (4.3) |
| Total Baseline Cost | 2,399 | 2,524 | 4,923 | 3,185 | 1,233 | 4,418 | 32.8 | (51.2) | (10.3) |
| Physical Contingencies | 195 | 141 | 336 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| Price Contingencies | 120 | 87 | 207 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| Total Project Cost | 2,713 | 2,752 | 5,466 | 3,185 | 1,233 | 4,418 | 17.4 | (55.2) | (19.2) |
| Service Charge on the Loan | 133 | 0 | 133 | 81 | 0 | 81 | (39.0) | 0.0 | (39.0) |
| Total Costs | 2,846 | 2,752 | 5,598 | 3,266 | 1,233 | 4,499 | 14.8 | (55.2) | (19.6) |

Source: ADB. 2001. *Project Completion Report on the Outer Islands Agricultural Development Project*. Manila (Appendix 2, page 21).

PROJECT SCHEDULE: PLANNED VERSUS ACTUAL

| Item | | Appraisal Estimate | Actual | Delays (Month) |
|--|--------------|-----------------------|------------|-------------------|
| A. Loan Effectiveness | | Jul-96 | Dec-96 | 6 |
| B. Loan Consultants | - Fielding | Mar-96 | Jun-98 | 27 |
| | - Completion | | Feb-99 | |
| C. TA 2467 (MAF) Consultant | - Fielding | Jan-96 | Jan-97 | 12 |
| | - Completion | Dec-98 | Jul-00 | 19 |
| TA 2468 (Tonga Trade) Consultant | - Fielding | Jan-96 | Jul-97 | 18 |
| | - Fielding | Dec-97 | Aug-00 | 32 |
| D. Civil Works Contracts | | | | |
| 1. Construction of TTC Building, Niuafo'ou | | | | |
| a. Date of Award | | Jan-97 | Sep-97 | 8 |
| b. Completion of Work | | Jun-97 | Jan-98 | 7 |
| 2. Construction of MAF Building, 'Eua | | | | |
| a. Date of Award | | Jan-97 | Aug-98 | 19 |
| b. Completion of Work | | Dec-97 | Feb-99 | 14 |
| 3. Construction of MAF Building, Niuafo'ou | | | | |
| a. Date of Award | | Jan-97 | Mar-99 | 26 |
| b. Completion of Work | | Dec-97 | Oct-99 | 22 |
| 4. Construction of MAF Building, Niuatoputapu | | | | |
| a. Date of Award | | Dec-99 | Oct-99 | 0 |
| b. Completion of Work | | Jun-00 | Apr-00 | 0 |
| 5. Construction of 'Eua roads | | | | |
| a. Date of Award | | Jan-97 | Jul-97 | 6 |
| b. Completion of Work | | Dec-00 | Jun-01 | 6 |
| 6. Construction of Niuafo'ou roads | | | | |
| a. Date of Award | | Jul-99 | Nov-98 | 0 |
| b. Completion of Work | | Sep-99 | Oct-99 | 1 |
| 7. Construction of Niuatoputapu road | | | | |
| a. Date of Award | | Aug-99 | Jun-99 | 0 |
| b. Completion of Work | | Jan-00 | Dec-99 | 0 |
| E. Supply, Delivery, and Installation of TTC Equipment | | | | |
| 1. First Procurement | | Jun-96 | Dec-96 | 6 |
| 2. Last Procurement | | Jun-97 | May-97 | 0 |
| 3. Completion of Equipment Installation | | Jun-97 | Dec-97 | 6 |
| F. Start of Operations | | | | |
| 1. Completion of Tests and Commissioning | | Jul-97 | Feb-98 | 7 |
| 2. Beginning of Start-up | | Jan-98 | Feb-98 | 1 |
| G. Water Tank and Piping System Completion | | not specified | Feb-98 | |
| Overall Project Implementation | | | | |
| Start | | Mar-96 | Early 1997 | |
| Completion | | Dec-00 | Jun-01 | 6 |

MAF = Ministry of Agriculture and Forestry, TA = technical assistance, TTC = Tonga Telecommunications Corporation.
Source: ADB. 2001. *Project Completion Report on the Outer Islands Agricultural Development Project in Tonga*. Manila.
ADB. 2001. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Kingdom Tonga for the Outer Islands Agricultural Development Project*. Manila.

TA 2467-TON: CAPACITY STRENGTHENING OF THE MINISTRY OF AGRICULTURE AND FORESTRY

A. Rationale

1. The project preparatory technical assistance (TA)¹ identified a number of areas where the Ministry of Agriculture and Forestry (MAF) would need to be strengthened to implement the Outer Islands Agriculture Development Project. A review of MAF operations, financed by the Asian Development Bank (ADB),² recommended that MAF move toward a four-division structure. Although the report found MAF to be an effective organization, it identified weaknesses in (i) resource management (human, financial, and assets); and (ii) technical skills (farm and business management, analytical techniques, monitoring, evaluation, and understanding of the cash economy). The Government accepted these recommendations and findings in principle, and the Cabinet was to approve a strategic plan for the reorganization and future operations of MAF in 1996. ADB agreed to provide TA, for \$600,000 equivalent, focused on strengthening the capacity of MAF to manage market-oriented development projects.

B. Resources

2. The resources provided under the TA included 25.5 person-months of consulting services, \$40,000 worth of vehicles and equipment, and \$55,000 for incremental operating costs. The Government was to contribute \$30,000 in the form of office and secretarial support. The consulting services comprised (i) 18 person-months for an institutional development specialist, (ii) 3 person-months for a management information systems (MIS) specialist, (iii) 2 person-months for a benefit monitoring and evaluation specialist, and (iv) 2.5 person-months for a media communications expert.

C. Implementation

3. A change from individuals to a single company contract delayed recruitment of the consultants. In July 1996, ADB provided to MAF a shortlist of individual consultants for capacity building. However, MAF rejected four of these, including the three highest ranked consultants, which required ADB to re-tender for consulting companies. The team finally was fielded on 24 July 1997.

4. The inception report of the institutional strengthening specialist noted that the TA was designed to follow the adoption and implementation of the strategic plan for MAF. As envisaged at appraisal, the restructuring of MAF would be materially complete by the beginning of the loan project. However, at TA inception in July 1997, the strategic plan for MAF had not been adopted, and MAF had not been restructured as expected. The success of the TA depended on these changes having been made. In October 1997, a tripartite meeting of the Government, the consultants, and ADB reviewed the issues raised in the inception report. They concluded that the scope of the TA needed to be changed to allow the consultant team to assist with the MAF reorganization proposed in the 1993 report. ADB approved changes, within the budget limitations, to the terms of reference affecting mainly the institutional development specialist and

¹ See ADB. 1995. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grants to the Kingdom of Tonga for the Outer Islands Agriculture Development Project*. Manila.

² ADB. 1992. *Technical Assistance to the Kingdom of Tonga for the Review of the Operations of the Ministry of Agriculture and Forestry*. Manila (TA1712-TON, for \$75,000, approved on 5 June).

rural sociologist, as well as a minor reallocation of person-months to accommodate this requirement, without sacrificing the original objectives.

5. The consultant inputs were provided in three main phases: (i) July–November 1997, (ii) May–October 1998, and (iii) May–July 1999. The institutional development specialist provided short-term inputs until June 2000. Assisting with the implementation of the restructuring became a major activity of this specialist, though progress was slow. The reformed Research and Extension Division was established in December 1998, and the Corporate Services Division in January 2000. These two divisions are the most importance to the achievement of the project goals. The formation of the Regulatory and Quality Management Division, as well as the commercialization of the mechanical services and forestry activities, still was in progress at project completion. A loan covenant requiring the reorganization of MAF to be implemented within 6 months of loan effectiveness was partially complied with. Substantial, though not complete, compliance was achieved by project completion.

6. The Government and ADB accepted the inputs of the other specialists, which were provided as specified. A rural sociologist was added to the team to help define the needs of clients and improve links between MAF, farmers, and other interested groups. The MIS specialist helped MAF introduce program budgeting, which was required by the Ministry of Finance, though not included in the terms of reference. As a result of the TA and appointment of qualified staff, the use of computers is widespread throughout MAF and data management is much improved. The distribution of information, which now uses modern technology, is more attuned to the needs of clients and field staff. Although a benefit monitoring system had been planned, it had not been used at project completion. MAF staff believe that more monitoring is required, and have proposed requesting further assistance. The merger of the research and extension functions appears to have improved the standards of field services, though the sustainability of this improvement will need to be assessed later.

D. Achievements

7. The project completion report found the consulting services satisfactory. The restructuring of the Research-Extension Division has improved links between farmers and extension workers, and between extension workers and specialist support staff. The incorporation of finance, administration, budgeting, planning, and information functions within the Corporate Services Division has improved coordination of support services. A general feature of the restructuring has been the recruitment of more highly qualified staff, funded by savings arising from reductions in the number of unqualified support staff.

E. Constraints

8. The institutional development specialist's final report made some observations about the conduct of the TA, as well as institutional improvements in the Government in general.³ The report states that implementation of the restructuring was retarded by difficulties with recruitment, job rotations, frequent absences of senior officers on overseas missions, and bureaucratic procedures of the public service. The inadequate time allocated to the input from specialists did not adequately provide the support needed for MAF to fully achieve the revised objectives of the TA. Despite these difficulties, and the need for a substantial revision of the purpose during implementation, the TA achieved most of its goals.

³ Agrico (1995) Ltd. 2000. *Final Report on Institutional Strengthening of the Ministry of Agriculture and Forestry*. ADB (TA 2467-TON). Nuku'alofa.

F. Performance Assessment

9. The TA is assessed as successful. The TA inception report noted that the strategic plan for MAF had not been adopted, and MAF had not been restructured as expected. As a result, the restructuring of MAF became a major task of the TA. This proved more difficult and time consuming than anticipated, causing the TA to exceed the time limits for restructuring set in the covenants. The training component of the MAF TA is rated less effective. While training of MAF staff has been effective, the training and demonstration component for island staff and communities in general was less effective. The Operations Evaluation Mission does not consider a 1-week visit to each of the three islands adequate to contribute to the achievement of the project objectives.

10. The MAF restructuring was achieved without an increase in budget requirements. MAF is now fully staffed and its effectiveness has increased, indicating that the MAF structure is sustainable.

IMPACT ON FARM INCOMES

A. Estimates at Appraisal

1. Tonga's agriculture sector faces several constraints, including (i) lack of scale; (ii) distance from markets; (iii) high costs and limited availability of transport links; (iv) high costs and shortages of labor due to out-migration; and (v) significant climate risks, especially drought and cyclones. During project preparation, the financial impact of the Project on rural incomes was assessed through model farm household budgets for each of the three islands ('Eua and the two Niuas). As envisaged, the Project would raise incomes by encouraging increased cultivation and introducing technology to improve yields. The expected increase in cropping intensity and acreage cultivated was a relatively modest 14% on 'Eua and 50% on the Niuas (starting from a low base). Yield increases also were expected to be modest.

B. Changes Since Appraisal

2. Eight years since the Project began, some changes from the appraisal forecast already have occurred, mainly in the areas and production of different crops in response to changed price, transport, and marketing conditions.

3. The following assessment of changes was based on

- (i) the updated assessment produced for the project completion report,
- (ii) recorded changes in prices and costs, and
- (iii) the result of the annual Ministry of Agriculture and Forestry (MAF) crop area surveys (where available).

4. Exports of squash and, to a lesser extent, vanilla have been a major driver of economic growth. Japan has provided a niche market for these exports from November to January. A New Zealand company identified this market in 1987, and Tongan farmers and traders rapidly exploited it. By 1993, the value of squash exports amounted to 66% of Tonga's total exports. However, 90% of squash production is on the main island of Tongatapu. This development has accentuated the disparity between the economies of the main island and the outer islands. By contrast, the production and export of coconuts, coconut products, and bananas, which were significant until the terms of trade worsened about 1992, were spread throughout Tonga. Only 10% of the main replacement activity of squash production takes place away from Tongatapu. Exports of copra from the outer islands have fallen dramatically in recent years, and almost no aged coconut trees are being replanted.

5. The squash industry has been more prosperous than anticipated in the report and recommendation of the President (RRP).¹ In 'Eua, the squash industry has been assisted by the improved road system, better access to transport, and mechanical cultivation. However, squash production has become more concentrated on bigger farms, where more efficient use of mechanical cultivation is possible. Meanwhile, production on smaller farms has declined. Squash sales from 'Eua averaged 2,100 tons (t) between 1999 and 2001, compared with 733 t in 1996. In 2002, production increased to 3,100 t, and reached a record 3,700 t in 2003. At appraisal, production was estimated to increase by only about 16 t per year. Improved road

¹ ADB. 1995. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grants to the Kingdom of Tonga for the Outer Islands Agriculture Development Project*. Manila.

access was a prerequisite for this increased production, since squash is a bulky, low-value crop. Efficient transport is needed to meet shipping schedules. On-farm trials and extension services assisted by the Project also support the squash industry on 'Eua.

6. Since 2000, squash ships have anchored off 'Eua, and the squash has been barged directly from the wharf. Previously, squash was barged to Nuku'alofa before being transferred to the squash export ships. This has reduced the transport costs significantly to the 'Eua farmers.

7. In 1998 and 1999, vanilla prices fell to about half the levels used in the RRP analysis, before surging to new records in 2000. Production, maintenance, and planting were curtailed during 1998 and 1999. Statistics indicate that some of the area recorded in 1996 has been lost, with losses greatest in the case of the Niuas. MAF staff from these areas provided confirmation. Since 2000, rehabilitation and production activity on 'Eua has rebounded, and much of the original area is expected to be bought back into production. However, most of this is predated and cannot be attributed to the Project. Production and marketing was always more difficult on the Niuas, where the hotter climate also raised questions about the technical suitability of the sites for vanilla production. If the industry is to be revived there, it will have to start almost from scratch. As envisaged at appraisal, farmers on all three islands would receive increased income from vanilla from project year 5. However, at the OEM, a revival of vanilla in the Niuas had not occurred.

8. For squash and vanilla, Tonga is a price taker. The only way the country can influence the price it receives for its export produce is to ensure that exports are high quality.

9. The shipping service from the Niuas to Samoa never materialized, though produce from other parts of Tonga is being exported to American Samoa. Direct shipping to Samoa was expected to provide a market outlet for root crops and some watermelons from the Niuas. Shipping to other ports in Tonga also has been irregular and unhelpful to the development of trade. Market buildings constructed under the Project are not used as markets, and have not increased opportunities for local sales. Thus, the only markets for perishable produce from the Niuas are village-based local markets supplying mainly yachts and wage earners, and those using the infrequent Government-sponsored shipping services to Tongatapu. Local market sales are greater on Niuatoputapu than on Niuafu'ou, as they are supported by the stronger economy based on handicrafts. Agriculture extension officers report that increased areas of root crops were planted on the Niuas, though some were wasted due to the lack of markets, especially on Niuafu'ou.

10. Kava demand and prices have been higher than estimated, although the industry continues to suffer from the closure of the European market. By project completion, kava prices had more than doubled from the estimate of T\$10 per kilogram (kg) used in the project analysis to T\$20–25 per kg. Standing immature crops of kava are being traded at T\$25,000 per acre or more. Farmers on all three islands have responded by rapidly increasing the growing areas for kava—from 67 acres in 1996 to 303 acres in 2000 on 'Eua; from 37.5 acres to 108 acres on Niuafu'ou; and from 20 acres to 95 acres on Niuatoputapu. Much of the Niuatoputapu kava is grown on the island of Tafahi. Some farmers have moved from Niuatoputapu to Tafahi to take advantage of its favorable growing conditions.

11. Demand has remained strong for root crops, vegetables, and fruits for domestic consumption on Tongatapu and for export, providing opportunities for 'Eua farmers to their sell produce. Average prices for yams and taro were about 20% above appraisal estimates. However, acreages have not increased significantly. Instead, farmers have increased their

incomes by interplanting root crops with kava. The land and other resources devoted to increased production of squash also have restricted the increase in root crop production.

12. On all islands, interest in expanding handicrafts production has been strong, as reflected in planting of paper mulberry and pandanus, and its importance in MAF programs. Demand for handicrafts, which have been featured prominently in trade fairs organized by Tonga Trade, has increased. Some changes in the structure of the industry are also evident with the sale of semi-processed handicraft materials for finishing elsewhere. This might provide opportunities to earn increased returns per unit of labor. The information base for handicrafts is the poorest of the enterprises under review. For example, information is not available on exports, while the growth rates and yields of the trees used to produce the raw materials are not documented as well as for other crops. Fine mat trading is the biggest source of income to the people of Niuatoputapu. Since 2002, the island has received an average of \$100,000 per year from fine mat trading.

C. Agriculture Production and Exports

13. Table A6.1 shows estimates of acres planted for the main crops on the islands. Clearly, only the planting of squash, vanilla, and kava have increased significantly. In the Niuas, apart from a limited amount of kava that is exported, cash-based agriculture is limited. 'Eua continues to benefit from its closeness to the main Tongatapu market. Although squash planting has grown recently, farmers still suffer from fluctuations in the price they receive at the farm gate.

Table A6.1: Acres Planted With Main Crops

| Crop | 1985 | 1993 | 1996 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------------------------|-------|------|------|------|------|------|-------|-------|------|
| A. 'Eua | | | | | | | | | |
| a. Taro | 923 | 551 | | 273 | | 308 | | 188 | |
| b. Yams | 830 | 85 | | 195 | | 244 | | 237 | |
| c. Vanilla | 50 | 70 | | 24 | | 322 | | 152 | |
| d. Squash | | 188 | | | | | 1,470 | 2,674 | |
| e. Kava | 111 | | 67 | 218 | 303 | 398 | | 298 | |
| f. Watermelon | 42 | | | 2 | | 8 | | 4 | |
| B. Niuatoputapu | Niuas | | | | | | | | |
| a. Taro | 164 | 74 | | 108 | | 198 | 52 | 50 | 65 |
| b. Yams | 259 | 17 | | 106 | | 101 | 131 | 87 | 108 |
| c. Vanilla | 35 | 4 | | 0 | | 0 | 3 | 1 | 0 |
| d. Kava | 21 | | 20 | 94 | 95 | 100 | 107 | 48 | 51 |
| e. Watermelon | 1 | | | 0 | | 8 | 5 | 6 | 11 |
| C. Niufo'ou | | | | | | | | | |
| a. Taro | | 75 | | 34 | | 40 | 31 | 41 | |
| b. Yams | | 12 | | 23 | | 18 | 35 | 44 | |
| c. Vanilla | | 18 | | 0 | | 0 | 4 | 23 | 29 |
| d. Kava | | | 38 | 48 | 108 | 103 | 48 | 68 | 109 |
| e. Watermelon | | | | 4 | | 0 | 0 | 0 | 0 |

Source: Ministry of Agriculture and Food.

14. Compared with the other two islands, 'Eua's agriculture production and exports have fared considerably better. However, determining how much of this growth can be attributed to the Project is very difficult. Squash has been the main export commodity of 'Eua, with production tripling since 1996. Vanilla is the second most important export product for 'Eua, though returns to households have fluctuated due to volatile world prices. Kava, which has

grown significantly, is another important cash crop for 'Eua. As taro production has halved since the Project began, no increase in household income has been allocated for this product. Yam production, on the other hand, has increased significantly compared to the 1993 survey. With no evidence of any significant growth in mat production, the RRP estimates have been cut by 50%.

15. Taro production on Niuatoputapu has halved since the project began, although it did experience 1 good year in 2001. As such, no increase in household income has occurred for this product. Yam production has been relatively steady at around 100 acres per year. Thus, no increase in household incomes has been included for this commodity either. After the decline in vanilla prices in the late 1990s, almost all vanilla vines were left to deteriorate, and only minimal attempts have been made to resurrect this crop on this island. Watermelon production, which has been minimal, is for own consumption rather than for sale. Kava is an important cash crop for this island, earning \$40,000 in 2004. The production of fine mats is the largest source of income on the island, with revenue estimated at \$50,000 per year.

16. The RRP estimated that taro production on Niuafo'ou would increase by 15%. However, the agriculture survey data shows that planting has declined by 50% from the 1993 crop survey (on which the RRP was based). The area planted with yams, on the other hand, has tripled. Vanilla production on Niuafo'ou did not reappear until 2002 after replanting in response to record world prices in 2000. Volumes did not reach 1993 levels until 2003. However, the subsequent declines in world vanilla prices in 2004 and 2005 suggest that household incomes have not increased since the Project began. Watermelons, which the RRP anticipated would be the largest crop on Niuafo'ou, are not produced anymore on the island. Kava, which the RRP likewise expected to contribute to an increase in household incomes, has had limited success. Shipping constraints constrain the sale of this product. MAF estimated that the island received \$20,000 from kava in 2004. The "other" category has been revised to 10% of the RRP estimates to reflect the minimal attempts to grow and export other products from Niuafo'ou.

17. Table A6.2 summarizes agriculture exports for Tonga over the past 8 years. As this shows, squash is the largest export commodity. However, the industry does not supply a reliable income to Tonga farmers due to fluctuating prices.

Table A6.2: Agriculture Exports

| Item | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------|----------|---------|----------|----------|----------|----------|----------|----------|
| A. Volumes (mt) | | | | | | | | |
| a. Taro | 321.8 | 85.4 | 112.4 | | | 1,408.0 | 436.9 | |
| b. Yams | 463.7 | 330.7 | 341.6 | 523.5 | 992.5 | 644.5 | 918.5 | |
| c. Vanilla | 3.6 | 20.4 | 56.3 | 19.8 | 4.7 | 13.9 | 16.1 | |
| d. Squash | 12,284.0 | 7,258.0 | 17,617.0 | 14,700.0 | 16,701.0 | 18,024.0 | 21,106.0 | 12,955.0 |
| e. Kava | 129.0 | 147.4 | 39.3 | 56.5 | 97.5 | 118.8 | 108.9 | |
| f. Watermelon | 59.8 | 105.9 | 80.1 | 65.8 | 139.7 | 74.3 | 82.6 | |
| B. Values (\$'000) | | | | | | | | |
| a. Taro | 162.0 | 38.0 | 30.0 | | | | | |
| b. Yams | 348.0 | 77.0 | 179.0 | | | | | |
| c. Vanilla | 167.0 | 157.0 | 907.0 | | | | | |
| d. Squash | 6,313.0 | 4,354.0 | 8,946.0 | 15,700.0 | 28,200.0 | 23,100.0 | 15,400.0 | |
| e. Kava | 1,053.0 | 2,395.0 | 527.0 | | | | | |
| f. Watermelon | 44.0 | 27.0 | 27.0 | | | | | |

mt = metric ton.

Source: Ministry of Agriculture and Food.

18. The draft report from the recent Agricultural Sector Review in Tonga² stated that “the performance of the agriculture sector in Tonga over the past decade in terms of cash income and employment creation has been poor. Growth in the value added of the sector has lagged behind growth in other parts of the economy. The result is that the sector's contribution to GDP fell significantly during the past decade.” The report also found that agriculture household income has not grown in real terms.

² ADB. 2005. *Technical Assistance to the Kingdom of Tonga for Agricultural Sector Review in Tonga*. Manila (TA 4112-TON).

TA 2468-TON: INSTITUTIONAL STRENGTHENING OF TONGA TRADE

A. Rationale

1. In 1995, the Government of Tonga adopted a policy that the marketing of agricultural and other commodities should be rationalized under a new entity, Tonga Trade, within the Ministry of Labour, Commerce and Industry (MLCI). The Asian Development Bank (ADB) provided an advisory technical assistance (TA) grant to help support Tonga Trade in its early years. The TA was a component of ADB's Outer Islands Agriculture Development Project loan, which aimed to increase agriculture productivity on the outer islands, reduce income disparities between households on different island groups, and stimulate agriculture exports. The goal of Tonga Trade under the Project was to identify markets that are appropriate to Tonga's productive capacity, and to develop an environment that encourages private sector investment in export industries.

2. As envisaged, Tonga Trade would become operationally independent of the Government as private sector support gradually increased. Loan covenants stipulated that Tonga Trade would draw up an action plan indicating how at least 50% of its funding would come from the private sector by the beginning of year 3 of operations.

B. Resources

3. The TA provided 20.5 person-months of consultant input: (i) 12 person-months for an export marketing development specialist; (ii) 5 person-months for a management information systems (MIS) specialist; and (iii) 3.5 person-months for short-term specialists for training in the development of marketing plans, presentational skills, and database analysis. In addition, the TA provided \$401,000 to cover the costs of computer and other office equipment, vehicles, promotional travel, communications, publications, and training. The Government was to provide counterpart funding of \$230,000, mainly in the form of local staff and operating expenses for 3 years.

4. In June 1998, ADB undertook a midterm review of the TA in June 1998. The parties agreed in December 1998 to carry over unspent funds to continue the Project through 2000. The carryover was justified based on problems completing project activities within the original 2-year time frame due to staffing issues.

C. Implementation

5. Tonga Trade was inaugurated on 17 January 1997, with the first input of the consultants starting on 16 January 1997. Initially, the Government funded only one of the planned nine Tonga Trade positions. MLCI staff filled the other positions, including those of director and deputy director, on a part-time basis, though most were able to devote only about 20% of their time to Tonga Trade work. Thus, a large TA input was applied to a new institution with only a fraction of its designated staff.

6. The TA services were provided in two phases. In the first phase, lasting approximately 6 months, the focus was on creating a business plan for the operation of Tonga Trade. The TA also helped the permanent staff gain support for Tonga Trade's activities from industry and other sections of Government. In the second phase, covering the next 18 months, the TA continued to train permanent staff to achieve the objectives of Tonga Trade. This recognized that the capability and role of the institution needed to be developed first to enable it to play its

role effectively. Regarding the objectives of the first phase, Tonga Trade did not have an up-to-date business plan at the time of the performance evaluation, and its role in export promotion was not clearly recognized. Exporters in the agriculture sector remain confused as to which ministry or organization is responsible for export promotion. The Ministry of Agriculture and Forestry (MAF) still undertakes its own independent marketing missions overseas.

7. Interestingly, the terms of reference for the two main consultants relate more to the achievement of the goals of Tonga Trade than creating an organization that could achieve them. The qualifications and experience required of the appointees also emphasized skills in export, marketing, and management information systems, rather than institutional development. The team leader did spend considerable time on essential institutional development tasks, including the preparation of proposals for the conversion of Tonga Trade from a government department to a registered company and the pursuit of private sector funding. However, these were not carried through to finality. The project completion report (PCR) stated that the consultant spent a lot of time on this objective, which in hindsight was unrealistic. The Operations Evaluation Mission (OEM) believes that the privatization issue should have been recognized considerably earlier, and that the TA consultants should have ceased spending time and effort in this area.

8. Over the past 5 years, Tonga Trade's average staffing level has been three professionals and one support staff, implying that the original plan for nine positions was probably unrealistic—particularly recently with the freeze on public sector recruitment. Thus, Tonga Trade had very little chance of achieving its full staff complement, as anticipated in the RRP. Tonga Trade currently has three professional staff and one support staff, though one of the professional staff spent 6 months in Japan on the Tonga booth at the World Expo 2005. None of the current staff members was part of Tonga Trade during the capacity strengthening TA at the beginning of the Project.

D. Achievements

9. Much was achieved during the TA. Marketing studies for priority commodities were conducted. Industry profiles were produced, mostly involving locally hired consultants. Tonga Trade participated in and staged trade fairs, and carried out trade missions to promote Tonga's produce. Industry organizations were promoted, and the Kava Council was established. Information on trade developments and opportunities were disseminated through newsletters and other publications. Specific successes included helping make export sales, notably the sale of Tonga's stockpile of vanilla in 1999. The industry appreciated these efforts. Key outputs from the TA PCR, updated during the OEM, are summarized below:

- (i) **Established an Internet system for gathering trade information.** Staff continue to use and expand the use of the Internet for trade information.
- (ii) **Established Tonga Trade Web site.** The MIS specialist developed the Web site, which was launched in late 1997. In June 1999, the MIS specialist trained a couple of staff members to update and maintain the Web site. Previously, a local consultant handled these responsibilities. However, when his contract ran out, an attempt was made to transfer this role to staff within Tonga Trade. The training was brief, and the staff involved were unable to continue the Web site updates. By 2002, the Web site was closed as the information had become out-of-date and people had stopped using it.
- (iii) **Established the Tonga Trade library.** Although the library still exists, few newsletters or other publications are received regularly, mainly due to the lack of

funds for subscriptions. Thus, the physical library is now out-of-date. However, with the Internet playing an increasingly important role in trade information gathering process, this is not such an issue.

- (iv) **Established Tonga Trade newsletter and weekly radio broadcasts.** The newsletter, distributed to 200 individuals and organizations, was successful and informative. Unfortunately, only one staff member was capable of using the software, and the newsletter ceased for 2 years while she was on study leave. It was revived in 2004 when the staff member returned. However, she was then transferred out of Tonga Trade to another position in MLCI. In late 2005, the newsletter was renamed the Trade and Investment newsletter, and is now produced by the Industries Division of MLCI.
- (v) **Organized the Tonga and Fiji Islands bilateral trade fair.** This is continuing.
- (vi) **Organized the Pacifika Trade Fair.** This has been a considerable success for Tonga Trade.
- (vii) **Helped establish industry groups.** Tonga Trade was instrumental in setting up industry associations for fisheries, handicrafts, fresh produce, vanilla, kava, and squash. A particular success has been the Handicraft Association, which now operates almost completely independently in marketing its products. Handicraft Association members frequently travel and promote themselves overseas, with Tonga Trade normally only supplying an introductory letter.

10. More recently, Tonga Trade developed an export permits system for squash in 2001 to try to control export quality. The Squash Council is working on strategies to minimize leaks by improving productivity, bulk purchasing inputs, and rationalizing shipping and logistics. In 2004, a squash production quota system was introduced, as well as minimum price system. Management responsibilities for this were transferred to the Squash Council. In 2002, Tonga Trade was instrumental in opening the Tonga Handicraft Centre at the Tonga National Centre. It includes one building serving as a shop, one building as an exhibition house for the islands, and one building as a handicrafts working center. In 2003, Tonga Trade took over the work on biosafety from the Commerce Division of MLCI. One staff member spent 6 months in 2005 on trade promotion at the World EXPO 2005 in Japan.

E. Constraints

11. Problems with staffing, funding, and private sector involvement seriously undermined the TA. ADB review missions repeatedly brought these problems to the attention of the Government. The lack of dedicated full-time staff hampered work, and created excessive dependence on the human and other resources provided through the TA. High turnover of staff also reduced the long-term benefit of the substantial training that was provided. The division of responsibilities between staff also changed from functional to sectoral and back to functional during the TA. The tripartite review in 1998 identified the appointment of a full-time deputy director as the most urgent staffing requirement. The review was also informed of the impending funding of other full-time positions.

12. During the OEM, the staffing issue continued to be a problem. Since project completion, Tonga Trade has had two more deputy directors and staff turnover has continued. Tonga Trade's longest serving staff member joined in late 1999. Thus, the institutional memory of the

capacity building TA is minimal. Staffing levels over the past 5 years have been well below the anticipated nine full-time staff, averaging three professionals and one support staff.

13. Confusion over which ministry or organization is responsible for promoting export marketing continued throughout the Project. MAF and the Ministry of Fisheries each have a marketing division, as does the Tonga Development Bank. Tonga Trade's links with MAF and the Tonga Development Bank for the promotion of export marketing were another problem area. The midterm review accepted that MLCI is responsible for this function, and recommended that desks for agriculture and fisheries be set up in Tonga Trade and operated by staff from the respective ministries. The lack of cooperation in export marketing has led to some duplication, waste of resources, and less-than-complete use of available information in the early stages of the TA. However, by project completion, the three institutions reached an agreement on their respective roles, though the community at large still did not have a strong grasp of Tonga Trade's role.

14. The TA consultants did not recognize the requirement for 50% private sector funding of Tonga Trade, stipulated in the covenants, as a problem area. The tripartite review considered this requirement unachievable and unrealistic. The review was informed that Tonga Trade would become a limited liability company by the end of 1998. Although the TA expert drew up plans for incorporation, these were not implemented. At the time of the final consultant input, a decision was made to keep Tonga Trade as a division of MLCI, as the ministry and the export sector were not mature enough to support the organization. Moreover, costs would be lower within the Government. Nevertheless, the formation of industry councils for kava, squash, vanilla, and handicrafts have provided a mechanism for the involvement of the private sector in the formation of industry policy and the delivery of support services.

15. A shortage of public sector funds was another continuing problem during implementation. The Government provided little, and the drawdown of TA funds was delayed due to a lack of experienced administrative staff in Tonga Trade. Funding improved in the FY2002 budget, with Tonga Trade being allocated a T\$300,000 revolving fund and export diversification funding of T\$200,000.

F. Performance Assessment

16. Overall, the TA is assessed as partly successful. The lack of dedicated full-time staff hampered work, and created excessive dependence on the human and other resources provided through the Tonga Trade TA. A market information system also was to be introduced through Tonga Trade to collect, analyze, and publish information for all sectors. In hindsight, however, the lack of market information does not appear to have been as serious a constraint to exports as envisaged at appraisal. As a result, the TA is rated only partly relevant. Clearly, the Government was not ready at that time to commit the resources required to establish this organization, thereby limiting the TA's relevance.

17. High turnover of staff also reduced the effectiveness of the substantial training that was provided. The division of responsibilities between staff also changed from functional to sector and back to functional during the TA, which also contributed to a rating of less effective. Tonga Trade's effectiveness also was reduced in the early years of the Project as MAF duplicated market efforts and competed to supply services to farmers. Most troublesome, however, is that many export farmers are still confused about their point of contact for export information and promotion. Some continue to work through Tonga Trade, while others still consider MAF the lead agency.

18. The PCR noted that the terms of reference for the two main consultants focused more on the achievement of the goals of Tonga Trade, rather than creating an organization that could achieve them. The team leader did spend considerable time on essential institutional development tasks, including the preparation of proposals for the company registration of Tonga Trade and the pursuit of private sector funding. However, these were not carried through to finality. The PCR stated that the consultant spent a lot of time on this objective, which in hindsight was unrealistic. The OEM believes that the privatization issue should have been recognized considerably earlier, and that the TA consultants should have ceased spending time and effort in this area. As a result, the TA is rated less efficient.

19. The organization of trade fairs and establishment of industry organizations have been the most successful and sustainable outputs of Tonga Trade. Tonga Trade has proved to be durable, which is a significant achievement considering its lack of funds and staff since project commencement. Therefore, the TA is rated sustainable. Outputs from the TA, such as the Web site, database, library, and newsletter, have not all been sustainable. The Web site is closed and the database defunct. Although the physical library is out-of-date, the Internet information library is kept current. In addition, the newsletter, after disappearing for a couple of years, was resurrected and transferred to the Industries Department within MCLI.

G. Issues and Lessons

20. In the end, the privatization loan covenant was not complied with, and Tonga Trade has not developed in the way envisaged in the RRP. Although it was expected to concentrate on information gathering and dissemination, Tonga Trade initially was involved much more in export operations. The export sector is not as strong as the RRP implied, which is one reason the required sector funding was difficult to attract. Tonga Trade also argues that the private sector cannot deliver the services it provides.

21. Throughout the TA, MLCI and the consultants indicated that planning was underway to comply with the covenants. If the difficulties had been clearly acknowledged early in the TA, revisions could have been negotiated to move the organization in the direction intended with realistic and achievable targets. This did not occur, however, because (i) the need for institutional development in framing the TA inputs was underestimated, and (ii) Tonga Trade was a new organization with insufficient resources. The failure to make a firm decision on the legal status of Tonga Trade was a source of uncertainty. This was exemplified by Tonga Trade operating as a division of MLCI early in 2001, only to revive corporatization plans in mid-2001. At the OEM, privatization was once again off the table.

22. The PCR questioned the premise underlying the TA, i.e., that production for export would increase if producers were better informed about markets, and markets were developed through promotion. Conditions in Tonga made establishing such a direct correlation difficult. Export development in Tonga depended on facilitating a number of interrelated factors, including investment capital, industry organization, and the skills base of the population. The current activities of Tonga Trade, particularly its encouragement of investment, demonstrate recognition of these conclusions to some extent.

RETURNS TO TELECOMMUNICATIONS INVESTMENT

A. Income

1. Charges to telephone subscribers in the Niuas of Tonga have averaged T\$195,000 over the past 2 years compared to an estimated T\$70,000–T\$80,000 used in the appraisal analysis. From 2000 to 2004, subscribers on Niuatoputapu increased from 115 to 197, while subscribers on Niuafo'ou rose from 70 to 92 (Table A7.1). The number of calls originating in the Niuas has exceeded forecasts, and the system has been used for commercial and personal calls.

Table A7.1: Telecommunications Connections

| Year | Niuatoputapu | Niuafo'ou | Total |
|-------------|---------------------|------------------|--------------|
| 2000 | 115 | 70 | 185 |
| 2001 | 165 | 79 | 244 |
| 2002 | 172 | 85 | 257 |
| 2003 | 180 | 88 | 268 |
| 2004 | 197 | 92 | 299 |

Source: Tonga Communications Corporation.

2. In the appraisal document and project completion report (PCR), income from overseas calls to the Niuas was treated as additional income. This represents the portion that overseas telecom companies pay Tonga Communications Corporation (TCC) for each incoming call. The inclusion of this money as revenue in the analysis is legitimate if the reciprocal is included as an expense, i.e., the portion TCC pays to overseas companies for international calls originating from the Niuas. This was not the case, which the Operations Evaluation Mission (OEM) sees as a flaw in the original financial analysis. (TCC general manager concurred with this assessment.) Since the financial information for both incoming and outgoing calls to the Niuas was not available from TCC, the OEM has excluded these from the analysis.

B. Expenditure

3. The expenditure components have been revised, where appropriate, after the OEM's discussions with TCC. The capital cost, estimated at appraisal at T\$2.356 million, has been revised to reflect actual costs of T\$1.763 million. Income and expenditure details are in Table A7.2.

4. Unfortunately, the satellite system used in the Niuas, which was controlled by Telstra of Australia, was withdrawn from service in 2003. As a result, TCC had to replace modems, circuit multiplication, and other equipment. The new system has increased costs slightly, thereby producing lower returns in recent years. In addition, the telecommunications component was installed before the Ministry of Works undertook the road component of the Project on Niuafo'ou. The ensuing road alignment required 10 poles to be dug up and moved. Moreover, treated timber was not used for the poles, which were eaten by sulfur and had to be replaced.

Table A7.2: Telecommunications Costs and Returns (Niuas)
(T\$ Million)

| Year | Revenue | Capital Cost | Satellite Rental | Operating Costs | Net Benefit | TCC Debt Service | TCC Cash Flow |
|------|---------|--------------|------------------|-----------------|-------------|------------------|---------------|
| 1997 | 0.0 | 1,763.0 | 0.0 | 0.0 | (1,763.0) | 0.0 | (1,763.0) |
| 1998 | 133.0 | 0.0 | 24.0 | 44.4 | 64.6 | 98.0 | (33.4) |
| 1999 | 133.0 | 0.0 | 24.0 | 44.4 | 64.6 | 137.0 | (72.4) |
| 2000 | 133.0 | 0.0 | 24.0 | 44.4 | 64.6 | 322.0 | (257.4) |
| 2001 | 133.0 | 0.0 | 24.0 | 44.4 | 64.6 | 0.0 | 64.6 |
| 2002 | 133.0 | 0.0 | 24.0 | 44.4 | 64.6 | 0.0 | 64.6 |
| 2003 | 188.0 | 251.0 | 27.0 | 118.9 | (208.0) | 0.0 | (208.0) |
| 2004 | 175.0 | 0.0 | 27.0 | 139.0 | 9.0 | 0.0 | 9.0 |
| 2005 | 221.0 | 0.0 | 27.0 | 161.0 | 33.0 | 0.0 | 33.0 |
| 2006 | 225.0 | 0.0 | 27.0 | 165.0 | 33.0 | 926.0 | 893.0 |

TCC = Tonga Communications Corporation.

Source: Tonga Communications Corporation.

C. Net Returns

5. Returns before financing fell from T\$65,000 in 1998 to T\$33,000 in 2005 onward. This decline is at odds with the appraisal and PCR analysis, which anticipated significant increases in returns over time. The performance decline is due to additional investment costs and significantly higher operating costs than estimated, which were offset partially by higher income from domestic calls. Therefore, the internal rate of return is -9.8%, compared with appraisal estimates of 4–5% and the revised PCR estimate of 8.2%.

D. Financing and Cash Flow

6. The Government onlent the part of the loan used to pay the costs of the telecommunications component to Tonga Telecommunications Company (TTC). TTC was to use the cash generated from the new service to repay the loan to the Government. The report and recommendation of the President (RRP) predicted that “the telecommunications subcomponent will generate its own revenue stream and is expected to reach its break-even point at the end of five years.”¹ This has not happened, and the OEM considers this unlikely in the near future. The Government was to bear the foreign exchange risk on the TTC subsidiary loan, while TTC was to ensure that charges were high enough to maintain financial viability.

7. The PCR reported that the onlending terms in the RRP generally were followed: (i) the interest rate is 6.8%; (ii) the grace period is 3.2 years; and (iii) maturity is 14.7 years, with the final payment expected in 2011. However, TTC has never made a repayment on the loan. Cable & Wireless withdrew from Tonga on 1 July 2000, and TTC took over its operations. In 2001, the operations of Tonga Communications Commission and TTC were combined to form TCC. The original loan to TTC had to be renegotiated with TCC, a process that was not completed until 2005. Under the new loan agreement, TCC will begin principal repayments in 2006, along with repayment of unpaid interest.

¹ ADB. 1995. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grants to the Kingdom of Tonga for the Outer Islands Agriculture Development Project*. Manila.

E. Impact on Beneficiaries

8. The beneficiaries appreciate the modem communications service. However, charges represent a high percentage of their disposable cash income. Arrears, although stable, amount to almost 1 year's charges on Niuafu'ou and about 4 months on Niuatoputapu. Niuafu'ou subscribers reportedly are experiencing difficulties in keeping up payments. Residents of Niuafu'ou were affected more seriously by the demise of the copra industry. Their investments in kava—the crop on which their future economic hopes rests—have not paid off yet in cash. The stronger handicrafts economy on Niuatoputapu is believed to have enabled subscribers there to increase incomes to meet their new commitments.

F. Conclusions

9. This component was implemented quickly and efficiently, and usage is above expectations. However, TCC will have to cross-subsidize the service for many years. As envisaged in the RRP, the investment would be self-financing, and TCC would be able to adjust charges if necessary to achieve this result. Other parts of the Project that were designed to increase the incomes of the target populations have been delayed or have failed. As a result, people's opportunities to spend money expanded before they were given the means to increase their incomes. Under these circumstances, higher charges are unlikely to increase returns to TCC. Instead, phone usage probably would be curtailed to keep accounts within affordable limits.

MANAGEMENT RESPONSE TO THE PROJECT PERFORMANCE EVALUATION REPORT FOR THE OUTER ISLANDS AGRICULTURE DEVELOPMENT PROJECT IN THE KINGDOM OF TONGA (Loan 1412-TON)

On 19 October 2006, the Director General, Operations Evaluation Department, received the following response from the Managing Director General on behalf of Management:

1. Management finds OED's Project Performance Evaluation Report (PPER) well prepared with a comprehensive analysis of the Outer Islands Agriculture Development Project (the Project) and its implementation. The lessons learned provide valuable guidance for the designing of future loan and technical assistance (TA) projects in Tonga and elsewhere in the Pacific. Management response focuses on the overall assessment and the lessons learned. The Pacific Department will pursue the follow-up actions as recommended.

A. Overall Assessment

2. Tonga has been member since 1972 and the Project (SDR2.43 million in 1995) was ADB's 8th loan to Tonga. We acknowledge that the Project Completion Report (PCR) of December 2001 assessed that the Project was implemented mostly, with the exception of the community funds, as intended, and that the Project had achieved its main objective with an internal economic rate of return of 22%. The PCR recommended that (i) monitoring of the Project benefits be strengthened, (ii) a covenant be added concerning the Tonga Trade marketing agency to receive 50% financing from the private sector, (iii) the Project be adequately resourced by the Government, and (iv) external resources be sought to assess opportunities for enhancing the benefits to improve transport services to the Niuas, Tonga's far-flung Northern islands.

3. We also note that the agriculture sector has received a total of four ADB-funded TA projects, including the Project Preparatory Technical Assistance (PPTA) for the evaluated Project (Agricultural Development), its two piggy-backed TAs (Capacity Strengthening of Ministry of Agriculture and Forestry and Institutional Strengthening of Tonga Trade) and a TA for Agriculture Sector Review.¹ The latter aimed to assist the Government with the proposed reorganization of the Ministry of Agriculture, Forestry and Food and a preparation of a road map for the development of the sector over a 10-year period. In spite of efforts under this TA and by other development partners (Australian Agency for International Development), the processes to improve sector performance have seen resistance by the sector management, particularly constraining development of opportunities to expand private sector involvement in the sector.

¹ ADB. 1993. *Technical Assistance to Tonga for Agricultural Development*. Manila.

———. 1995. *Technical Assistance to Tonga for Capacity Strengthening of Ministry of Agriculture and Forestry*. Manila.

———. 1995. *Technical Assistance to Tonga for Institutional Strengthening of Tonga Trade*. Manila.

———. 2003. *Technical Assistance to Tonga for the Agriculture Sector Review*. Manila.

4. We acknowledge the rather severe downgrading in the rating from the PCR. This is congruent with the experienced difficulties in implementing and finalizing the report under the TA for Agriculture Sector Review in 2004.

5. We also acknowledge the PPER's evaluation with respect to (i) relevance, with the Project design involving seven components evaluated less than relevant to the needs that only partially achieved their intended objectives; (ii) effectiveness, with Project implementation arrangements involving five agencies and the Project suffering from shortages in counterpart funds and staffing; (iii) efficiency, with the Project affected by limited recognition of the logistics issues and less than acceptable degree of ownership of the Government manifested in limited counterpart and operational funding of the components; (iv) sustainability, affected by the policy incoherencies with respect to the Tonga Trade component and the lacking maintenance and operational funding for the established facilities, and (v) the poor performance of the Government as well as ADB. The recommendations of the PPER will be incorporated in ADB's work in Tonga and more broadly in the Pacific in the relevant sectors.

B. Lessons Learned

6. We agree with the lessons learned and will incorporate these in ADB's forward program.

- (i) **Organizational Restructuring:** While some progress was achieved in improving the efficiency of the Ministry of Agriculture and Forestry (now Ministry of Agriculture), we note that institutional restructuring in the Pacific requires long-term commitment of both the Government and the development partner as well as appropriately scaled and delivered interventions through TA consultants. A diligent and realistic assessment of the prevailing and developing institutional capacities to own and implement restructuring efforts is needed that are supported by targeted capacity building assistance.
- (ii) **Public Private Partnerships:** Development of market access institutions call for a critical assessment of the private sector ownership and capacity of the private sector to contribute to the initiatives such as the Tongan Trade.
- (iii) **Sustainability:** Capital investment funding of infrastructure requires greater efforts to ensure the lifecycle funding of the operation and maintenance of the built facilities in order for these to deliver their projected benefits to the economy.

C. Suggested Follow-up Actions

7. We agree with the three recommended follow-on actions and suggest that the Pacific Department take up the related policy dialogue. While ADB's next Country Partnership Strategy and Program may not include agriculture sector interventions, policy dialogue can be conducted through the Country

Partnership Strategy and Program Update preparation process in addition to the urban development sector work, where relevant.

8. In addition, ADB and Tongan development partners are preparing to support the Government with TA for the implementation of the newly adopted 8th Strategic Development Plan (SDP-8), under which opportunities are foreseen to address three proposed follow-up actions: (i) adoption of a sound sector policy framework; (ii) removal of impediments to investment in the sector; and (iii) establishment of private sector driven infrastructure to facilitate sector operations.

D. Conclusions

9. Management agrees with the report's conclusion that while support in the agriculture sector was and will continue to be needed, the sector policy framework should provide the enabling environment for appropriately designed interventions to successfully deliver sustainable benefits. The Government's SDP-8 provides an opportunity for dialogue that can be reinforced through development partner cooperation in the sector.