TECHNICAL ASSISTANCE

TO THE

FEDERATED STATES OF MICRONESIA

FOR THE

TRANSPORT INFRASTRUCTURE DEVELOPMENT PROJECT

December 1995
CURRENCY

The United States dollar ($) is the unit of currency in the Federated States of Micronesia.

ABBREVIATIONS

DOT - Department of Transportation
EIA - Environmental Impact Assessment
FSM - Federated States of Micronesia
TA - Technical Assistance
US - United States

NOTES

(i) The fiscal year of the Government ends on 30 September. "FY" before a calendar year denotes the year in which the fiscal year end, e.g., FY1996 ends on 30 September 1996.

(ii) In this Report, "$" refers to the US dollar.
I. INTRODUCTION

1. In November 1995, the Government (Government) of the Federated States of Micronesia (FSM) requested Bank technical assistance (TA) for the preparation of a transport infrastructure project. A Bank Fact-finding Mission visited the four states from 14 to 30 August, 1995, and reached understandings with the Government on the objectives and terms of reference for consultants. This TA paper was prepared on the basis of the understandings reached with the Government and the governments of the four states, observations during the field trip, and a review of existing statistics and recent studies.¹

II. BACKGROUND AND RATIONALE

2. The FSM consist of four states—Pohnpei, Chuuk, Yap, and Kosrae. About 82 percent of the population lives on the main island in each state. All the states except Kosrae have several outer islands. The population of the FSM is around 100,000, of which about 49 percent live in the state of Chuuk, 33 percent in Pohnpei, 11 percent in Yap, and 7 percent in Kosrae. The FSM’s population growth has been averaging 3 percent per annum, but outmigration of 2 percent brings the effective growth rate down to 1 percent per annum.

3. The main source of national income at present is assistance from the United States (US) government through a Compact of Free Association, under which the US Government retains responsibility for defense and security while the FSM receives financial assistance over a 15-year period, which started in 1986. These funds are programmed to decline during the Compact period, terminating in 2001. It was hoped that the FSM would become more self-reliant during the Compact period, but progress has been slow. Exports are very limited, although they are increasing, particularly those of fish.

4. The road network in the FSM is not extensive. All the main islands in each state have plans for a circumferential road. But only Pohnpei already has one; it was completed in 1986 with a total length of about 90 kilometers (km). In Chuuk’s main island (Moen), the planned circumferential road of 40 km still has a gap of about 8 km, partly because private individuals are unwilling to allow roads to cross their land. Kosrae has about 43 km of primary road, but still lacks about 13 m of the circumferential road. Yap has about 60 km of primary roads, with about 16 km of the circumferential road missing. Only limited sections of the circumferential roads are paved. In generally, the main paved areas do not extend very far beyond the urban center. In Pohnpei and Kosrae, about 60 percent remains unpaved; in Moen, about half is unpaved; and in Yap, about 55 percent of the primary road network is unpaved. The unpaved roads are often coral-capped. Some are in very poor condition. There are also a few secondary roads on the main islands, but virtually none on the outer islands, where populations are very small, averaging about 700 on the ten largest outer islands.

5. There are about 5,500 vehicles in the FSM, equivalent to about one per 18 inhabitants. The majority consists of cars and pickups. There are very few trucks on the islands. Almost all road transport services (i.e., taxi and mini bus services) are run by the private sector. The few exceptions include Yap, where buses have been run by either Government departments or Government-owned corporations, and school buses provided by education authorities.

6. Road construction and maintenance is the responsibility of state agencies. Originally all these agencies were departments of public works (DPWs). In Pohnpei, the responsibility has been transferred to a state-owned independent corporation. But in Chuuk,
Responsibility for construction and maintenance is still in the DPW; in Kosrae, it is under the Department of Transportation and Utilities, which undertakes the work previously done by the DPW; and in Yap it is under the Department of Public Works and Transportation. These bodies either build and maintain the roads, or supervise contracts carried out by private companies. In practice, construction is often contracted out to foreign companies, particularly from Japan and the US. Secondary road construction is undertaken by private companies in some states. Road construction costs are high in the FSM.

7. Maintenance of roads is a major problem. The heavy rainfall causes rapid deterioration and washes away the coral caps. Improvements in drainage facilities would help to reduce costs, especially on Chuuk, where the urban roads are in very poor condition. In Chuuk, maintenance and repair of the existing road should have greater priority than building new sections. The funds allocated to maintenance are inadequate in all states, partly because the Compact grants do not allocate funds for maintenance. Capital investment has priority. The states do not recover costs of road construction and maintenance from the users, but some of the states' road authorities have been trying to introduce such a system.

8. Each state has an international port on its main island. These ports generally have surplus capacity. The quay lengths available are 270 meters (m) at Pohnpei, 300 m at Chuuk, about 250 m at Yap, and just over 100 m at Kosrae (with additional capacity in the quay length currently allocated to shipping). These berth lengths are sufficient to handle much larger volumes of cargo than they are currently handling. The main ships calling at the ports are typically about 120-130 m long, with maximum drafts of 7-8 m. The ports also have deep enough water (about 9 m in most cases) to accommodate larger ships. Occupancy by cargo and passenger vessels is low, but parts of the quays are often crowded with large numbers of inactive fishing vessels, double and triple banked.

9. Cargo volumes are small. Pohnpei handles about 50,000 tons of cargo, about 80 percent of which is containerized. The port handled about 3600 containers in 1993. Total FSM cargo volumes are estimated at about 100,000 tons, and total inward container traffic at all the FSM ports is estimated at about 4,000 containers per annum. The international ships make separate calls at all the main islands. They charge higher freight rates than on international trunk routes, but the rates appear reasonable by the standards of nontrunk routes. The crucial factors causing high freight rates are the small volumes on the routes, which preclude economies of scale, and the fact that the ships call at many islands where handling rates are necessarily much slower than at trunk route ports.

10. The states' ports are currently being extended with assistance from Japan. In the last two years, the Japanese government has been assisting the port at Yap at a cost of $10 million and that of Chuuk at a cost of $20 million. Kosrae port will be improved in 1996. There are no ports on the outer islands. The intrastate ships unload at anchorages to small craft. In some cases, anchorages are difficult to reach in unfavorable weather.

11. The outer islands of the FSM, which contain about 18 percent of the national population, rely mainly on shipping for external contact. There are only very limited air services to the outer islands, operated by two companies — Pacific Missionary Aviation (on Pohnpei and Yap) and Caroline Pacific Air (on Chuuk). They use nine seater planes. Both are private/church organizations. The ships serving the outer islands are conventional small passenger-cargo ships with capacities of 700 tons and 150 passengers. They are owned by the Central Government, which inherited them from the US Trust Territory government, but the ships are operated by the state governments, and the Central Government does not charge the states for using the ships. Pohnpei and Yap operate one ship each, while Chuuk operates two. The FSM also has a landing
craft which performs various tasks in the islands. The outer island services make large losses: estimates suggest that their revenues cover less than 20 percent of their costs in Pohnpei. The tariffs have not been raised much in recent years. Proposals for increases generate strong opposition from local politicians. In contrast, the costs of operation appear high.

12. There is little administration of transport at a national level. In fact there is no central FSM Government organization responsible for either roads or ports. The FSM Department of Transportation (DOT) deals only with shipping and air transport, and its responsibilities are mainly for safety. Roads and ports are administered entirely by state agencies. The states do not submit much information on their transport sectors to the Central Government. Sources of information on the transport sector in the FSM are limited and are not consolidated by the Central Government. The state agencies are not obliged to submit information to the central Government, and do not do so (this applies to all sectors, not only transport). Even within the states, the published information on transport is very limited.

13. There is no centralized planning or prioritizing of transport projects. Road and port projects are initiated, and implemented by the states. Their main sources of funds are the Compact funds, which are allocated to the states via a formula. The shares of the state funds to be allocated to transport, and the specific projects, are then determined within the state. The funds for transport are set out in the state governors’ budgets, which are subsequently discussed and amended by their state legislatures. This sometimes leads to investment being led by the supply of funds, rather than transport needs, especially in the port sector. There are no procedures for economic appraisal of transport investment at either state or national level. In practice, economic appraisal is carried out only by consultants on specific projects.

14. The states tend to channel transport infrastructure proposals via the FSM Government only where necessary to support requests for funds. Where the funds are already available the states do not go though the Central Government. Against this background, the need for transport infrastructure has not been systematically analyzed, and projects have not been evaluated and prioritized on the basis of internationally accepted economic, financial, environmental, and social criteria. Nor has the case for institutional reforms in the agencies managing the transport sector been subjected to a comprehensive examination.

III. TECHNICAL ASSISTANCE

A. Objectives

15. The aim of the TA is to help the Government improve the efficiency and effectiveness of transport services in an affordable and sustainable manner.

B. Scope

16. The TA will focus on sector policy and institutional reforms, but will also help the Government to prepare a program for investment in infrastructure. The TA will (i) formulate a time-bound action plan for introducing appropriate transport policies, institutional reforms, and human resource development (including regulatory reforms and measures to encourage private sector participation where appropriate); (ii) prioritize the investments, taking into account their affordability and sustainability; and (iii) prepare feasibility studies of the highest priority elements of the transport investment program, including environmental and social impact assessments. The scope of the TA is confined to the road, aviation, and sea transport subsectors. The terms of reference for consulting services are detailed in Appendix 1.
C. Cost Estimates and Financing Plan

17. The total cost of the TA is estimated at $500,000, including a foreign exchange component of $436,000 and a local currency component of $64,000. The Bank will provide a grant of $490,000 to cover the entire foreign exchange cost and a portion of the local currency cost ($54,000). The TA will be provided as a grant and charged to the Bank-funded TA program. The remaining local currency cost ($10,000) will be met by the Government. Details of the cost estimate are shown in Appendix 2. The Government has been advised that approval of the TA by the Bank does not commit the Bank to finance any ensuing project.

D. Implementation Arrangements

18. The TA will require 14 person-months of international consulting services in the fields of (i) civil engineering for roads and port structures, (ii) transport policy analysis, (iii) transport economics and financial analysis, and (iv) environmental science and socioeconomics. The person-months will be spread over 3-5 experts, as appropriate. The consultants will be engaged by the Bank in accordance with Bank’s Guidelines on the Use of Consultants.

19. The DOT will be the Executing Agency for the TA. DOT needs to assume a stronger role in overall transport coordination and policy formulation. Involvement in the TA will provide an excellent opportunity towards this end. Other activities expected from the DOT will be to coordinate the consultants’ activities with the four states, identify suitable liaison offices in these states, and establish a steering committee for the midterm review of the TA.

20. The TA will be carried out over a 5-month period, in two phases. Phase one will last 2.5 months and phase two, 1.5 months, with a gap of about 1 month between the phases. The consultants are expected to be fielded by April 1996 and to complete their work in September 1996. A tripartite review meeting among the Government, the Bank, and the consultants will be held in June 1996 after the first study phase. The meeting will discuss and reach agreements on all aspects of the projects’ feasibility and recommendations of the study concerning institutional and policy reforms in the transport sector.

IV. THE PRESIDENT’S DECISION

21. It is considered that the technical assistance to the Government of the Federated States of Micronesia is necessary for the purpose of the Transport Infrastructure Development Project. The President, acting under the authority delegated to him by the Board, has approved the provision of technical assistance, on a grant basis, in the amount of $490,000. The technical assistance, in the amount of $490,000, will be subject to the reimbursement arrangements set forth in the Board papers on Technical Assistance Operations (Doc. R51-77, dated 20 May 1977) and Streamlining of Technical Assistance Operations (Doc. R44-88, dated 21 March 1988), including the provision that in the event of the technical assistance resulting in a loan from the Bank, the Bank may charge against, and recover from, such loan that portion of the initial grant that exceeds $250,000. The President hereby reports his action to the Board.
A. Objectives and Scope

1. The main objective of the Technical Assistance (TA) is to improve the efficiency and effectiveness of land and sea transport in the Federated States of Micronesia (FSM) in an affordable and sustainable manner (civil aviation is being examined separately by the Bank on a regional basis).

2. The TA will assist the Government to (i) prepare a program for investment in infrastructure, based on internationally accepted criteria for assessing the economic, financial, environmental, social, and technical aspects of the projects; (ii) prioritize the investments, taking into account their affordability and sustainability; (iii) formulate a time-bound, implementable action plan for introducing appropriate transport policies, institutional reforms, and human resource development (including regulatory reforms and measures to encourage private sector participation where appropriate); and (iv) prepare a feasibility study of the highest priority elements of the transport investment program, including environmental and social impact assessments. The consultants should discuss findings throughout the TA with local experts in the Government and Nongovernment Organizations (NGOs), via working papers if required.

3. The TA will require about 14 person-months of international consulting services engaged from a firm in accordance with the Bank’s Guidelines on the Use of Consultants. The expertise required will be (i) road transport economics, planning, and policy (3 person-months); (ii) aviation and maritime transport economics, planning, and policy (3 person-months); (iii) civil engineering mainly for roads, ports, and airports (4 person-months); (iv) naval architecture and mechanical engineering (2 person-months); and (v) environmental and social assessment of transport infrastructure projects (2 person-months). The TA will be carried out over a four-month period, in two phases, lasting 2.5 and 1.5 months, with a gap of about one month at the end of the first phase. The planned starting date is April 1996.

B. Terms of Reference

4. The consultants’ responsibilities will include the following:

(i) Phase I (Preparation of Investment and Institutional Reform Programs for Land and Sea Transport and Civil Aviation)

(a) Review existing studies covering land, sea transport, and civil aviation in the FSM, its states, and the region as a whole.

(b) Examine the national economic framework within which the transport system operates, and review the Government’s development objectives, as outlined in the Second National Development Plan. This review should take into account the work on structural adjustment being undertaken by the Bank’s Economic Management Policy Advisory Team and the planned phasing out of the funds available under the Compact of Free Association.

(Reference in text: page 3, para. 16)
Appendix 1, page 2

(c) Prepare a full description of land and sea transport facilities and services in the FSM. This should include an inventory for each state covering:

- the road network, showing, inter alia, total length, paved sections, and condition;
- ports, showing, inter alia, quay lengths, drafts and channel depths, storage areas, and handling equipment, and their condition;
- interisland shipping; and
- airports facilities, showing their present conditions in terms of infrastructure and equipment.

It should also include full descriptions of the transport services to and on each island.

(d) Ascertain or estimate traffic levels on all modes of transport over recent years, and their trends.

(e) Forecast traffic over the a ten-year horizon. For sea transport and ports and airports, forecasts should cover cargo, passengers, and the fleet assumptions. They should include assessments of the probable changes in the types of shipping and airline services to the FSM on international and domestic routes. On domestic routes, the suitability of the existing (micro class) ships should be examined. For roads, the traffic forecasts should be broken down by vehicle type. The port traffic forecasts should include fishing vessels.

(f) Identify, before drawing up a list of investments (see g), operational improvements that could increase the efficiency and/or capacity of the existing facilities without major investment. For example, the scope for rationalizing the use of deep water port facilities, especially the division of port space between cargo, passenger, and fishing vessels, should be examined.

(g) Examine possible measures, if any, that could lead to a reduction in international sea freight rates.

(h) Draw up a list of possible improvements in, or additions to, transport infrastructure facilities.

(i) Prepare preliminary designs for the possible projects. In designing the roads, take account of problems encountered with recent construction, including drainage, road widths, and the effect of heavy rains on surface life. The associated future maintenance costs should be taken into account in designing road improvements.

(j) Determine prefeasibility cost estimates for the possible improvements in transport infrastructure facilities.

(k) Prepare for discussion with the Government a phased program for investment in transport facilities that appears to be (subject to evaluation under task (t) both affordable and sustainable. It should be divided into short-term (5-year) and medium-term (10-year) programs.
(l) Review arrangements for maintenance of roads and ports. The capabilities of the responsible organizations should be evaluated, and recommendations for strengthening their capabilities should be drawn up (taking into account the conclusions of tasks (o) and (p)).

(m) Review the existing system for transport data collection and recording, and assist in establishing a simple, concise data base for future use. This will involve making recommendations on establishing routine reporting procedures from state agencies to the Central Government.

(n) Review user charges for ports and airports, roads, and intrastate shipping, and compute the charges necessary to cover the costs of the infrastructure, equipment, and services provided. Examine the arguments for and against adopting "user pays" principles in the FSM in each case.

(o) Review the performances of the agencies currently undertaking:

- road construction (primary and secondary) and maintenance,
- provision of road services,
- airports and port facilities and services, and
- intra-state shipping.

The review of the intrastate shipping should consider options for improving the service and/or reducing the costs of, and subsidy to, the service. The options should include changes in ship types, sizes, routings, technical changes (fuel efficiency, etc), as well as institutional changes. The review should build on work documented in the Sea Transportation Study carried out by Pak Poy and Kneebone in 1985.

(p) Prepare for discussion with the Government a phased program of organizational, institutional, and policy reforms, covering the main transport sector institutions. The study should evaluate the relative merits of assigning the responsibilities to government departments, public corporations, or private sector firms, or of contracting out. When drawing up this program the study team should liaise with the Bank's Economic Management Policy Advisory Team (EMPAT) group.

(q) Identify any problems associated with the current division of responsibility for transport between the national and state governments. The states are relatively independent of the Central Government in the area of transport. There is no FSM central government agency dealing with roads and ports. The states are not obliged to submit the most basic information on their transport operations to the Central Government, and often do not do so, and there is no FSM department responsible for economic evaluation of transport projects. The individual states have very limited experience in economic evaluation and prioritizing of projects. Solutions to the problems caused by these arrangements should be formulated, and recommendations for introducing a more rational approach to selection of transport projects and establishment of appropriate investment appraisal methods (see ii, e) should be drawn up.
(r) Prepare an initial environmental examination and initial social assessment for the recommended investment program using the Bank's Environmental Guidelines for Selected Infrastructure Projects.

(s) Undertake detailed discussions with the Government regarding the recommendations made, before preparing the interim report for Phase I of the TA, for formal review and discussions with the Government and the Bank.

(ii) Phase II (Feasibility Studies for Priority Projects)

(a) Carry out detailed feasibility studies for the projects agreed for implementation during the first five years of the investment program. The feasibility studies should include economic appraisal and financial analysis. They should be based on costs estimates derived from preliminary designs based on broad construction and equipment procurement specifications, and on suitable procurement modes, implementation arrangements, and schedules. The port analysis should focus on cargo and passenger operations, but the impact of any proposals on the fishing industry should be described in detail.

(b) Prepare an environmental impact assessment (EIA), including a detailed social analysis, and a summary SEIA, if required, in accordance with the Environmental Assessment Requirements and Environmental Review Procedures of the Asian Development Bank and Guidelines for Incorporation of Social Dimensions in Bank Operations, as well as the documents referred to in (r), and in full consultation with the Government’s environment authorities and local communities. Environmental management, mitigation and monitoring plans should be included in the EIA and summary EIA if they are required; and a resettlement and compensation plan with time-bound actions and budgets should be formulated in consultation with the Government in cases where land acquisition and relocation of people are involved or there are land tenure problems.

(c) Assess the in-house capacity and capability of the Government to administer and monitor implementation of transport infrastructure projects. Recommend measures to enhance the capacity and capability, including organizational and human resources changes, and training.

(d) Identify performance parameters for monitoring the project, and recommend a system and staff requirements to sustain the activities.

(e) Draw up broad guidelines for appraisal methods for future projects in land and sea transport, for use by the Government of the FSM.

C. Reports and Meetings

5. The following reports, all in the English language, will be submitted by the consultants to the Government (eight copies) and the Bank (five copies).
(i) **Inception Report**: this brief report should be submitted within one month of the start of the services. It should outline any changes in the approach, methodology or work plan, as well as cost implications for the consultants' services (contained in the consultants' proposal) that are required to fulfill the terms of reference.

(ii) **Working Papers**, if needed as part of the consultation process with the Government. They might, for example, deal with aspects of the TA that have major implications for Government policy.

(iii) **Interim Report**, to be submitted at the end of Phase I. This report should contain the findings and recommendations on the investment program and proposals for policy reform, together with Initial Environmental Examination and ISAs. This report will be reviewed by the Government and the Bank, and a meeting with the consultants will be held in Pohnpei before Phase II starts, to discuss the findings and finalize the scope of Phase II.

(iv) **Draft Final Report**, to be submitted at the end of Phase II, containing all findings and recommendations, with time-bound programs for investment and policy reform, plus EIAs and Summary EIAs. If considered necessary, a second tripartite meeting will be called to discuss the draft final report.

(v) **Final Report**, to be submitted within one month of receipt of comments and suggestions of the Government and the Bank.
## COST ESTIMATES AND FINANCING PLAN
($)

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<th>Item</th>
<th>Foreign Exchange</th>
<th>Local Currency</th>
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<tr>
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<td>c. Travel</td>
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<tr>
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Note: Local transport is between the islands which in FSM involves international airline services.

(Reference in text: page 4, para. 17)