

TECHNICAL ASSISTANCE COMPLETION REPORT

Division: SASS

TA No. and Name TA 3405-MLD: Prepare the Science and Technology Masterplan			Amount Approved: \$600,000	
			Revised Amount: n/a	
Executing Agency: Ministry of Finance and Treasury		Source of Funding: TASF	TA Amount Undisbursed \$54,957.48	TA Amount Utilized \$545,042.52
Date			Completion Date	
Approval 02 Mar 2000	Signing 24 May 2000	Fielding of Consultants 14 August 2000	Original: 28 February 2001	Actual: 15 February 2003
			Closing Date	
			Original: 28 February 2001	Actual: January 2004
Description				
<p>The Maldives has a population of about 275,000 scattered over 200 inhabited atoll islands. The population growth rate remains at 2.7%, but is beginning to slow. Access to primary education is universal. The economy has been growing at an average of 7% per annum over the past 10 years due mostly to fishing, tourism, manufacturing, transport, and telecommunication industries. However, the Maldives faces major challenges to maintain strong economic growth and rising education demand while working to lower fertility rates and the unemployment rate of youth, which stands at about 20%. With limited land, skilled labor, and capital, the country is seeking ways to take advantage of science and technology (S&T) to promote economic development while reducing dependency on tourism and fisheries. Better quality education, training, and research are viewed as prerequisites to the human resource advancement necessary to utilize new technologies.</p> <p>The Ministry of Communication, Science and Technology (MCST) was established in December 1998 with the mandate to strengthen S&T capacity of the nation by improving education, research, training, and efficiencies in the use of computer systems and telecommunications to broaden the knowledge base. Given the strong growth prospects for the Maldives, the rationale for investing in S&T is two-fold. First, S&T can accelerate economic and technological progress by improving human resource development. Second, a well-defined S&T strategy can help maximize efficiency in areas of comparative advantage to foster trade and commerce. Access to new technology can create opportunities to emerge from dependence on low cost labor because technology can be bought off-the-shelf and made locally productive. S&T provides opportunities to pool technology and human resources to create a critical mass of scientific workers and provide access to computers, which are prerequisites to science information infrastructures.</p>				
Objectives and Scope				
<p>The TA aimed to help MCST (i) develop an S&T master plan that assess existing and future human resource requirements for efficient S&T development; (ii) identify a general S&T strategy, framework, policies, programs, and activities necessary for technological development, including a detailed plan, budget, and timetable for implementing those S&T programs; and (iii) strengthen the capacity of MCST to implement these new S&T policies and programs.</p>				
<p>The TA scope included the following major components:</p>				
<ul style="list-style-type: none"> (i) Assess S&T resources required to strengthen education, and training; labor market employment; information infrastructure network to improve communications across key sectors; science research; and marketing activities to popularize science application to everyday living. From this analysis, develop an S&T strategy to highlight key priorities for the next five years; (ii) Prepare an S&T master plan based on the assessment and strategy. The report will cover five years and include a national S&T strategy and action plan across key sectors, public and private participation, research and development, IT marketing strategy, and policy framework. The draft master plan will be placed on the MCST web site ; and (iii) Strengthen MCST capacity for S&T planning and analysis. A network server and terminals will be provided to the MCST office, equipment purchased and installed, and staff trained in short courses to operate the equipment and programs. Two staff will be provided IT and information system management training. International study visits of public and private sector S&T organizations will be provided to increase the S&T awareness of key Government ministries especially in the areas of innovations and IT. An electronic library and web site will be developed and workshops held to promote awareness both in Male and the atolls. 				
Evaluation of Inputs				
Consultants				
<p>The terms of reference for consulting services were clear and concise. Under TA financing, an international consultant team comprised of an S&T development specialist/team leader (4 pm), IT specialist (2 pm), education specialist (1 pm), labor economist (1 pm), and marine biologist (1 pm) for a total of 9 person-months were engaged. The domestic consultants comprise an S&T development specialist (4 pm), education and labor market specialist (1 pm), marine biologist (1 pm), and information technology specialist (2 pm). The Consultants were fielded on August 2000 and were able to produce outputs in a satisfactory and timely manner. Their continuous involvement in the process of preparing plans and materials have been beneficial. The consultants responded well to the terms of reference and worked diligently to satisfactorily achieve the TA's objectives and scope of work. MCST was generally satisfied with the performance of the consultants. The TA also supported the development of a proposal for a National Research Foundation (1 pm) and a management audit of MCST (1.75 pm).</p>				

Study Visits/Fellowships

The study visits, fellowships, and short courses arranged by the Consultants were approved and adopted by the Government. The TA supported graduate education fellowships for two MCST staff, advanced computer study programs for another two MCST staff, and a management program for one MCST staff. A study visit focusing on e-government was undertaken by two senior MCST and government officials actively involved in ICT and its applications in government. A Project Management Study Tour in ADB for one MCST staff was carried out and one MIFCO staff attended a Fisheries Study Tour in Thailand. The identification of proper programs for study visits and fellowships were delayed, subsequently delaying their completion and extending the completion of the TA.

Equipment and Materials/Software training

During the project, two sets of equipment purchases were made. Initially, a computer workstation, laser printer, inkjet printer, laptop computer, digital camera, and a digital printer were purchased to support the work on the master plan. After the arrival of the international information specialist, a second purchase was made including networking and software, hardware, and additional workstations. The latter equipment became part of MCST's National Computer Centre and the beginnings of the Government intranet system.

Beneficiary Participation

The work plan began with a baseline survey involving interviews, data collection and assimilation, and document review that was conducted of public and private organizations to determine the status of S&T development in Maldives, and the perceived need for upgrading equipment, facilities and personnel. The survey covered most major agencies in the capital and a sample survey of respondents from the atolls. Every feasible effort was made to have the Master Plan representative of nationwide views and needs. Three consultative workshops and two review workshops were held. There were separate consultative workshops for the Central, Southern and Northern Regions. Atoll participation among the three workshops were also carried out. The participatory approach was used as a means of assuring broad participation in the process and more generalized acceptance of the Master Plan's recommendation.

Evaluation of Outputs

MCST is generally satisfied with the Master Plan. The Master Plan was presented to and approved by the Cabinet. The Master Plan was translated into Dhivehi by MCST and the English version is posted on the MCST website. All staff who received training through the TA have returned to the Maldives and are actively contributing to MCST's and other government agencies' operations in their respective focus area. One of the supported staff received a special national award from the President in connection with her exemplary academic work during her fellowship and is now leading the development of the national ICT policy.

Overall Assessment and Rating

The TA was implemented as planned and successfully accomplished the objectives, activities, and other outputs envisaged under the TA design. The methodology of the S&T Master Plan reflects the joint emphasis on human resource development and on long-term strategic planning. MCST actively implemented and supported the TA; ADB provided helpful and timely assistance and advice. MCST was generally satisfied with the outcomes of the TA. The overall assessment is **successful**.

Major Lessons Learned

Commitment of MCST leadership to maximizing the impact of the TA, as reflected in their active participation in planning and leading TA activities, significantly contributed to achieving the TA outcomes. MCST leadership ensured that assistance was extended to consultants, and actively pursued the implementation of some of the recommendation of the Master Plan with TA support. To ensure that staff development activities are undertaken on time, identification and negotiation with the appropriate programs should be done earlier in the implementation. A briefing on ADB reimbursement procedures for departing staff development recipients would facilitate the subsequent processing of financial settlements.

Recommendations and Follow-Up Actions

As of May 2004, some of the Master Plan's recommended actions have been implemented by MCST. A national computer center and a national government communication network are being established in the ongoing Information Technology Development Project. The review of expatriate labor involvement, development of training bodies linked to the labor market, and development of a computerized labor market information system have been incorporated in the ongoing ADB Skills for Employment Project. A management audit of the MCST has been completed. A proposal to create a National Research Foundation has been developed. The Government needs to follow-up on strengthening S&T education, promoting the effective use of instructional technology at all levels of the education system, and modernizing the health information system.