

**ASIAN DEVELOPMENT BANK  
Post-Evaluation Office**

**COUNTRY SYNTHESIS OF POSTEVALUATION FINDINGS**

**IN**

**MALAYSIA**

**December 1997**

## EXECUTIVE SUMMARY

This Country Synthesis of Postevaluation Findings (CSPF) reviews and integrates the lessons of the Bank's operations in Malaysia with a view to enhancing the feedback process in order to improve the design, implementation, and operation of future development projects there and the sustainability of their benefits. It is based primarily on the findings of the various reports prepared by the Bank's Post-Evaluation Office.

As of 30 June 1997, the Bank had approved 76 loans<sup>1</sup> amounting to about \$1.95 billion to finance 75 projects in Malaysia. All loans to Malaysia were drawn from the Bank's Ordinary Capital Resources (OCR) with one exception.<sup>2</sup> At the end of 30 June 1997, Malaysia ranked ninth among all developing member countries (DMCs) in terms of total amount of Bank lending. About 36.5 percent of the Bank's assistance to Malaysia was provided to the social infrastructure sector, 29.1 percent to the agriculture and agro-industry sector, 16.5 percent to the energy sector, and 13.1 percent to the transport and communications sector. The balance of about 4.9 percent was provided to the industry and non-fuel minerals, finance, and other sectors.

The report presents the major findings and lessons learned from postevaluated projects. It is organized by sectors and subsectors and covers an analysis of (i) implementation delays; (ii) deviations between appraisal and actual project costs; (iii) performance ratings of postevaluated projects; and (iv) major findings and lessons learned. A conclusions section attempts to link the lessons learned with current development issues and concerns in the country with a view to improving the quality of the Bank's assistance to Malaysia. The report covers the review of 42 postevaluated projects and two technical assistance (TA) grants.

One postevaluated project each in the agriculture and agro-industry sector and in the transports and communications sector was completed as scheduled. All the other postevaluated projects posted implementation delays at an average of 2.4 years or 74 percent behind the appraised completion period. The delays were mainly attributed to factors such as (i) poor performance or inadequacies of contractors; (ii) shortage of local funds; (iii) procurement difficulties; and (iv) right-of-way acquisition problems.

Substantial cost deviations from appraisal estimates were experienced in 41 of 42 postevaluated projects. Twenty experienced cost underruns averaging about 36 percent. However, the cost overruns experienced in 21 other projects averaged about 60 percent. Cost overruns were attributed to (i) expanded project scope, (ii) land acquisition difficulties, (iii) underestimated civil works costs, and (iv) external factors such as the impact of the 1973 oil crisis and natural calamities. Cost underruns resulted mainly from reduced project scope and costs overestimated at appraisal.

Postevaluation categorized 26 (62 percent) of the 42 postevaluated projects as generally successful, 14 (33 percent) as partly successful, and 2 (5 percent) as unsuccessful. Of all sectors, the transport and communications sector had the highest average of generally

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<sup>1</sup> One loan, Pasir Gudang Combined-Cycle Generation approved on 10 October 1991, was withdrawn by the Government. This brings the total number of loans to 75.

<sup>2</sup> An amount of \$3.3 million was provided from the Asian Development Fund (ADF) for Loan No. 36-MAL: *Besut Agricultural Development Project* approved on 22 September 1970.

successful rating, i.e., 82 percent, while the agriculture and agro-industry sector had the lowest at 42 percent.

Factors contributing to project success include: (i) adequate and well-conceived project design including beneficiary participation in project design; (ii) leadership potential and performance of executing and implementing agencies; and (iii) the association of the private sector in development projects in Malaysia, especially in urban infrastructure projects. Factors which impeded realization of project objectives include: (i) weaknesses in project design including inadequate attention to land acquisition problems; (ii) unrealistic targets and implementation schedules; (iii) institutional shortcomings including a lack of coordination between multiple agencies involved; (iv) poor performance of contractors; (v) incongruous policy environment; and (vi) incorrect pricing and inadequate cost recovery in public utilities adversely affecting project sustainability.

Two TAs to Malaysia were postevaluated. One was rated as partly successful and the other as generally successful. The experience of one underscored the complexities of science and technology oriented projects which may require prior knowledge of the stage of development of a country. The experience of the other highlighted the need to ensure availability of financial resources in order to fully implement transport plans and the importance of allocating resources for training to enable the continuity of skills development.

The macroeconomic goals embodied in the Seventh Malaysia Plan 1996-2000 (7MP) are sustaining high level of growth with price stability and enhancing the country's international competitiveness. The key strategic priorities of 7MP are human resource development, capital deepening, technology improvement, and capacity building. The Bank's strategy for Malaysia responds to these and calls for (i) human resource development; (ii) promoting growth in less developed states; (iii) environmental management; and (iv) capacity building and policy support.

In view of the sustained good performance of its economy over many years and the cautiously optimistic forecast for the future, Malaysia is likely to be selective in accessing overseas development aid. The Bank is likely to have a modest program in Malaysia. This CSPF identifies the major lessons that could prove useful for the Bank's assistance to Malaysia. They focus on the need to support Malaysia's efforts in strengthening the institutional capacities of its executing and implementing agencies in the areas of policy formulation, project preparation, and the mobilization of private sector participation in Malaysia's development and sustainable growth.

## I. INTRODUCTION

The Country Synthesis of Postevaluation Findings (CSPF) for Malaysia is a report integrating the major findings and lessons learned from the experience of completed Bank-assisted projects and programs in the country. It is based on Project Performance Audit Reports (PPARs), Technical Assistance Performance Audit Reports (TPARs), Reevaluation Studies, Impact Studies, and Special Studies prepared by the Post-Evaluation Office (PEO). The CSPF aims to identify and synthesize the key factors affecting the implementation and operation of Bank-financed projects with a view to facilitating the feedback process to improve the design, implementation and operation of future development projects in Malaysia and the sustainability of their benefits, and thus to help establish a country assistance program for Malaysia with maximum potential impact.

This CSPF updates the previous one which was issued in November 1993. It presents the major findings and lessons learned from 42 projects and two technical assistance (TA) grants, which had been postevaluated as of 30 June 1997. Organized by sectors and subsectors, the report analyzes (i) implementation delays; (ii) deviations between appraisal and actual project costs; (iii) performance ratings of postevaluated projects; and (iv) major findings and lessons learned. A conclusions section attempts to link the lessons learned with current development issues and concerns in the country with a view to improving the quality of the Bank's assistance to Malaysia.

## II. BANK OPERATIONS IN MALAYSIA

The Bank began lending to Malaysia in 1968 with a loan of \$7.2 million for the Penang Water Supply Project (No. 4-MAL). As of 30 June 1997, the Bank had made a total of 76<sup>1</sup> loans for 75 projects amounting to about \$1.95 billion (see Appendix 1). Overall, Malaysia ranked ninth among all developing member countries (DMCs) in terms of Bank lending at the end of June 1997. The Bank's assistance to the country had been drawn from the Ordinary Capital Resources, except for one loan (No. 36-MAL: Besut Agricultural Development Project for an amount of \$3.3 million) which was drawn from the Asian Development Fund.

The social infrastructure sector in Malaysia is the biggest beneficiary of Bank assistance with 36.5 percent of total Bank lending to the country. It is followed by the agriculture and agro-industry sector with 29.1 percent, the energy sector with 16.5 percent, and the transport and communications sector with 13.1 percent. The shares of the industry and non-fuel minerals sector, the finance sector, and other sectors are 2.7 percent, 0.8 percent, and 1.4 percent, respectively (see Appendix 2).

Of the 75 Bank-financed projects in Malaysia, 50 had been completed and 42 had been postevaluated as of 30 June 1997 (see Appendix 3). The 42 postevaluated projects, involving a total investment of \$2.1 billion including Bank-financing of \$591.1 million, were approved between 1969 and 1986 and completed during the period 1974-1993. The sectoral distribution of postevaluated projects is as follows: social infrastructure sector, 14 projects;

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<sup>1</sup> One loan (Pasir Gudang Combined-Cycle Generation) which was approved on 10 October 1991 was withdrawn by the Government bringing the total number of loans to 75.

transport and communications, 11 projects; agriculture and agro-industry, 12 projects; and energy, 5 projects.

### III. MAJOR FINDINGS AND LESSONS LEARNED

This section examines the issues and overall impact of the postevaluated projects by sector/subsector and presents the lessons of experience. A summary of postevaluation results is given in Appendix 4.

#### A. Agriculture and Agro-Industry

Twelve projects in the agriculture and agro-industry sector were postevaluated, comprising eight projects in the irrigation and rural development subsector, and one each in the industrial crops and agro-industry, fisheries, forestry, and the agricultural support services subsectors. These projects had an aggregate capital cost of \$426.8 million inclusive of about \$152 million in Bank financing. Of the 12 postevaluated projects, five were rated generally successful, six partly successful, and one unsuccessful.

All postevaluated projects in this sector suffered implementation delays. The overall average delay was 2.6 years or 69 percent of the estimated implementation period. The major causes of delay included (i) inadequate capability of contractors; (ii) delays in engaging consultants, in preparing engineering designs, and in delivering equipment; (iii) changes in project scope and design; (iv) site reclamation and land settlement problems; and (v) Government budgetary constraints particularly during the economic recession in the early 1980s.

Eight projects posted cost underruns averaging 35 percent, while four projects had cost overruns averaging 51 percent. The major causes of cost deviations included (i) changes in project scope and design; (ii) overestimation/underestimation of project costs at appraisal, specially of price and physical contingencies, (iii) delayed implementation of civil works; (iv) currency realignments; and (v) competitive contract bids resulting in lower prices.

Generally, the ex-post financial internal rate of return (FIRR) and the economic internal rates of return (EIRR) of agriculture projects were below appraisal estimates, with one project, Farmers Organization Support Services Project (Loan No. 554-MAL) posting negative figures for both FIRR and EIRR.

#### 1. Irrigation and Rural Development

The eight postevaluated projects in this subsector cost \$338.3 million inclusive of Bank financing of \$107.3 million. Their objectives were increasing agricultural productivity and improving the economic and social welfare of the beneficiaries particularly smallholders. Three of these projects were generally successful and five partly successful.

The experience of projects in this subsector provides several lessons for the future. There is a need to ensure that the project design (i) reflects an understanding of the macroeconomic environment such as agricultural pricing policies, national policies and priorities, and labor constraints in rural Malaysia; (ii) takes account of local agroclimatic and socioeconomic conditions and off-farm opportunities, of farmer needs, preferences, and effective farmer

incentives, and of farmer management capabilities; (iii) is preceded by careful project preparatory work such as participant selection and land acquisition; (iv) provides for the participation of beneficiaries as well as all concerned project agencies; and (v) provides effective benefit monitoring and evaluation (BME) systems. For project implementation and supervision, it is important to (i) adopt a pilot water management program and train agricultural extension staff in project areas where the practice of irrigated agriculture is newly introduced; (ii) form farmers' organizations and develop group farming to augment the effectiveness of a limited extension service; and (iii) maintain flexibility by adopting the process approach in project implementation. To ensure post-project sustainability, there is a need for inter-agency coordination to provide integrated services and financial assistance to smallholders on a continuous basis to enable them to compete with estates; and in the case of rubber and oil palm production, it is important to improve the management of mini-estates and to expand cooperative marketing activities.

## **2. Industrial Crops and Agro-Industry**

One project, the Bukit Mendi and Bukit Goh Palm Oil (Loan No. 8-MAL) was postevaluated in this subsector. It involved the construction of two palm oil mills to increase and diversify agricultural production and exports and provide settlement and income-generating opportunities to landless families. This project was completed with a slight delay at a total cost of \$5.5 million, inclusive of \$2.8 million Bank assistance, and was rated as generally successful. Project experience has highlighted (i) the need to undertake a comprehensive study of land development strategies; (ii) the effectiveness of compulsory saving as a means to cushion the impact of income fluctuations resulting from volatility of commodity prices on the settlers' living standard; and (iii) the need for intensive review during project implementation.

## **3. Fisheries**

One fisheries project, the Sabah/Sarawak Fisheries Infrastructure Project (Loan No. 563-MAL), was postevaluated and rated generally successful. It was completed at a cost of \$38.5 million including \$17.6 million in Bank financing. The Project was intended to improve the socioeconomic status of the fisheries communities in Sabah and Sarawak and to assist in the development of the fisheries subsector there. Average incomes of fishing families in the project area increased significantly due largely to the increased fish catch and longer turnaround time of fishing vessels in the sea as a result of improved availability of cold storage facilities. Two key issues were considered critical to the continued growth of the sector, viz., the involvement of the private sector in the development of fish processing plants, and improved access to formal credit markets in Sarawak where small, family-based fishing operations had been constrained by inadequate knowledge of formal lending sources. The lessons learned from this project are that (i) sociocultural parameters should be assessed rigorously at the design stage to ensure that the facilities to be provided are relevant to community needs and local conditions, and thus avoid changes in project scope during implementation; and (ii) state-controlled fisheries agencies need to be appropriately structured and staffed to successfully manage commercially oriented operations.

#### 4. Forestry

The one postevaluated forestry project, which was completed at a cost of \$17.8 million including Bank financing of \$10.2 million, was designed to support the Compensatory Plantation Program of the Government and to generate an additional output of about 11.7 million cubic meters (m<sup>3</sup>) of timber. The project was assessed as generally successful at postevaluation despite implementation delays arising from the substandard capability of the contractors and from their labor supply problems. The project was expected to generate a sustainable production of general utility timber over its economic life, thus helping to reduce the pressure on the country's natural forests. The sustainability of project benefits, however, depended on a number of factors, including development of market demand and alternative uses for *acacia mangium*,<sup>1</sup> continued availability of labor to apply required silvicultural treatment, and improvement in the selection and engagement of plantation contractors.

A reevaluation of the project carried out in September 1996 confirmed the PPAR's finding that the project played an important role in developing forest plantations as a source of timber supplies in Malaysia, and that the establishment of plantations on logged-over and degraded areas had a positive impact on the environment in terms of erosion control and increased biodiversity. The project also had a significant institutional impact on the Malaysian forestry sector by strengthening the institution to establish and manage forest plantations. However, the problems of shortage of labor to carry out silvicultural treatment and treatment for pests and diseases had worsened since postevaluation because of which tree growth and yields would be adversely affected. The study's reestimated EIRR of 8 percent was significantly lower than the appraisal and postevaluation estimates of 22 percent and 23 percent, respectively. Thus the project rating was reclassified from generally successful at postevaluation to partly successful.

Lessons of experience demonstrated that (i) single-species plantations entail a high degree of risk from pests or disease outbreaks and appropriate measures should be provided for in the project design to deal with such risks; (ii) Bank support for such projects should be provided on a pilot basis prior to large-scale investment and should be accompanied by a strong research and development program; (iii) plantation development should be preceded by an environmental impact assessment and an inventory of biodiversity; (iv) in erosion-prone areas, soil conservation measures should be included to mitigate the potential negative effects of forest clearing and site preparation; (v) contracts for forest plantation development should maximize contractor responsibility and accountability for the performance of the plantation; (vi) regular monitoring of tree growth and performance should be part of forestry management inputs; and (vii) the availability of project inputs specially labor in all Malaysian projects must be assessed rigorously at project design stage.

#### 5. Agricultural Support Services

The one postevaluated project in this subsector, Loan No. 554-MAL: Farmer's Organization Support Services Project, was completed at a cost of \$26.8 million including Bank financing of \$14.1 million. It aimed at improving agricultural support services to farmers through construction of farm mechanization centers (FMCs) and providing farm machinery for land preparation, harvesting and transport. Unable to reach acceptable levels of equipment utilization

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<sup>1</sup> The major species of wood planted.

or compete with small, efficient private operators, the project FMCs charged unreasonably low rates resulting in heavy operating losses and inability to replace aging equipment. With negative FIRR and EIRR, the project was rated as unsuccessful. The PPAR noted that the project may have contributed to the misallocation of resources by providing assistance to the heavily subsidized, high cost paddy subsector that was no longer efficient or competitive. The highly subsidized FMCs were considered unsustainable and specific steps for FMC privatization were recommended. The major lessons from the project are that (i) Government tractor hire service is likely to be financially nonviable and should be designed for a limited span of life with a provision for eventual privatization; and (ii) if several mechanization units are required, it would be prudent to carry out their phased introduction allowing a period for consolidation and performance evaluation.

## **B. Energy**

Five energy projects, all in the electric power subsector, were postevaluated. They had an aggregate cost of \$405.2 million, including \$80.2 million Bank financing. Three of these were rated generally successful, one partly successful, and one unsuccessful. There were delays in completion of all energy projects averaging two years. The delays were attributed to the overoptimistic implementation schedules, right-of-way acquisition problems, delays in contract awards, poor performance of contractors, and delays in transmission line installation.

The three generally successful projects provided much-needed expansion to the power supply system and improved its reliability and were economically viable. However, in two of these projects, the PPARs noted that actual electricity demand was lower than appraisal estimates, and that in one case this resulted in underutilization of the project units. The Third Sarawak Electricity Supply Project (Loan No. 229-MAL) was considered partly successful because of shortcomings in the transmission and distribution systems. The Mini-Hydropower Sector Project (Loan No. 605-MAL), which was intended to assist the Government in its rural electrification program, was regarded as unsuccessful because of the low operating capacities of the mini-hydropower plants constructed under the project. Faster than anticipated expansion of the national grid, which resulted in rapid rural electrification, led to a reassessment by the Government of the need for mini-hydro plants. This, combined with a shortage of local funds, resulted in the deletion of 32 of the 41 proposed mini-hydro plants. The remaining nine mini-hydroplants were connected to the grid.

Among the lessons of experience in this sector are: (i) the importance of continual load demand monitoring and the need to modify expansion programs as appropriate; (ii) the advantages of appointing consultants for detailed design and of preparing specifications and tender documents ahead of loan approval, to facilitate the formulation, costing, and implementation of projects; (iii) the futility of mini-hydro development in areas close to the grid; mini-hydro projects are viable only for areas which are expected to remain isolated from the grid for at least five to ten years; and (iv) the need to undertake social analysis during processing and administration of hydropower projects involving resettlement requirements.

## **C. Transport and Communications**

Eleven projects in this sector with a total cost of \$682.7 million, of which \$163.9 million was Bank-financed, have been postevaluated. They comprise four road projects, six port projects, and one airport project. Nine of these projects were rated as generally successful, while one each was rated partly successful and unsuccessful. Seven of the projects had cost overruns ranging from 6 percent to 211 percent. The major factors contributing to the cost overruns were land acquisition difficulties, the impact of the 1973 energy crisis, underestimated civil works costs, and changes in project design and scope.

## **1. Roads and Road Transport**

The four projects in this subsector had a total cost of \$139.9 million, including Bank financing of \$59.5 million. The PPARs of these projects noted that the projects had been generally successful in achieving their main objective of developing road networks. These road networks helped eliminate transportation constraints arising from rapidly increasing traffic, led to increased mobility, and improved vehicle operating conditions. Implementation delays were relatively small and mainly due to unrealistic schedules.

Experience with the Jerangau-Jabor Development Road Project (Loan No. 238-MAL) indicated that in assessing the viability of penetration roads, it is important to ensure that substantial agricultural potential exists in the service area of these roads. The experience with the two Kuala Lumpur-Karak highway projects (Loan Nos. 76/176-MAL and 177-MAL) emphasized the importance of detailed engineering in estimating realistic project costs. The provision for detailed engineering designs in the first project helped avoid in the second project a repetition of the cost overrun incurred in the first. The experience of the East-West Highway Project (Loan No. 588-MAL) demonstrated that the program to systematically expand and improve the adjoining feeder roads and the integrated efforts made to improve economic growth and social development in the region contributed to the achievement of project objectives. An important finding from these projects was that the viability of road projects had been adversely affected by overloading of commercial vehicles which caused premature deterioration of road surfaces. In future road projects, the practice of overloading should be taken into account. Design deficiencies and inadequate law enforcement caused a rapid deterioration of the asphaltic concrete pavement in these roads, resulting in the need for higher maintenance requirements and shortening the life of project facilities. Re-routing to close roads for periodic maintenance of roads is thus crucial for sustainability of road project benefits, i.e., to enable early detection of shortfalls in pavement strengthening and to carry out road rehabilitation programs.

## **2. Ports**

The six postevaluated projects in the subsector, which had an aggregate investment of \$506.8 million including Bank assistance of \$93.5 million, had varied objectives. The four port expansion projects in Kuching, Sibul, and Penang (Loan Nos. 18, 47, 184, 296-MAL) were designed to ease port congestion. The Bintulu Port Project (Loan No. 426-MAL) was intended to provide a deep water port in Sarawak to service the growing traffic in that state, while the port project in Kuantan (Loan No. 147-MAL) was intended to eliminate economic imbalances between the east and west coasts of Malaysia, a part of the Government's New Economic Policy (NEP). The Kuching project, the two Penang projects and the Bintulu project were generally

successful, while the Sibul project was partly successful as it had lower than expected capacity utilization which resulted in EIRR and FIRR being lower than appraisal estimates. The Kuantan Port Project was classified as unsuccessful at postevaluation in 1986. It was found to be economically unviable due to (i) low cargo throughput which was less than 65 percent of the appraisal target; (ii) high cost overruns (i.e., more than 200 percent); and (iii) long delays in implementation, i.e., seven years or 221 percent, resulting mainly from deficiencies in the design of the quaywall structure, its failure after construction, and the remedial works required. At reevaluation in 1991, it was found that cargo throughput was far greater than forecast at postevaluation and exceeded the appraisal projections, but the EIRR remained low. Because of this and of unquantified socioeconomic benefits, the project was reclassified as partly successful.

The major factors that contributed to the success of the four generally successful projects (Kuching, Penang, and Bintulu) were: (i) careful project preparation based on detailed regional planning and technical feasibility studies which facilitated timely project implementation, and (ii) performance-oriented staff training programs which helped achieve productivity improvements. The major factors that limited the success of the partly successful and unsuccessful projects (Sibu and Kuantan) were the substantial cost overruns (142 percent and 211 percent, respectively) and implementation delays (98 percent and 221 percent, respectively). The less successful port projects have provided the following lessons: (i) in formulating new port projects, traffic forecasts must be carefully prepared, taking into consideration the initial lag in capturing traffic; and (ii) promotional rather than cost-based tariffs may be required during the initial period of operations of new ports which are competing for traffic with established ports.

### **3. Airports and Civil Aviation**

The one postevaluated airport project, the Penang Airport Development Project (Loan No. 101-MAL), was completed at a cost of \$36.1 million of which the Bank financed \$10.9 million. It provided for the runway and terminal capacity at the Penang airport to meet traffic growth until the mid-1980s. Despite the cost overrun arising from changes in scope and design, the project had an EIRR of approximately 13 percent and was rated generally successful. This success was due to the efficient functioning of an inter-agency steering committee that was managed and supported by competent technical staff and consultants. Its success notwithstanding, the project demonstrated that a master plan alone, without a preliminary airport design, is not an adequate basis to appraise airport projects.

### **D. Social Infrastructure**

Fourteen projects completed at an aggregate cost of \$630.3 million including Bank lending of \$195.0 million, have been postevaluated in the subsector. The subsector-wise distribution of these projects is as follows: seven in water supply and sanitation, three in urban development and housing, two in education, and another two in health and population. Eight of the projects had cost overruns averaging 53.9 percent of appraisal estimates. These overruns were due mainly to (i) changes in project scope and design; (ii) land acquisition problems; and (iii) price inflation resulting from the 1973 oil crisis. These projects experienced implementation delays averaging 2.8 years, although three had delays of less than a year. Reasons for the delays were (i) inadequate geological studies and design at appraisal, sometimes resulting in unexpected poor

site conditions; (ii) difficulties in land acquisition; (iii) delays in consultant recruitment, procurement, and civil works; (iv) contract failures due to inadequacies in the prequalification of contractors and in recourse procedures; (v) changes in detailed designs; and (vi) disagreements between the Government and the Bank regarding the use of local materials and labor in civil works. Nine of the projects were generally successful, while seven were partly successful.

## 1. Water Supply and Sanitation

The seven postevaluated projects in this subsector incurred a total cost of \$307.8 million including Bank financing of \$91.1 million. They all aimed at expanding the capacity of water supply schemes to meet the growing demand for safe piped water. Five of these projects were generally successful. Besides meeting the immediate and long-term water requirements, these projects contributed to institutional development of the water supply organizations, including the setting up of commercial accounting systems and the establishment of adequate tariff structures. The sustainability of one of the five projects, however, was threatened by problems of non-revenue water (NRW), low collection, inefficient maintenance, and low profitability. Two of the projects were partly successful due mainly to inefficient collection and financial losses as a result of high proportion of NRW, despite providing physical facilities largely as intended. In the Johor, Perak, and Trengganu Water Supply Project (Loan No. 364-MAL), actual demand for water has been lower than expected causing substantial capacity underutilization, while the high level of NRW has resulted in low water sales. In the Sabah Water Supply Project (Loan No. 316-MAL), the major loan covenant stipulating the establishment of a Water Board with management and accounting systems based on commercial principles was not complied with. Both projects suffered large cost overruns as a result of land acquisition difficulties. The secondary objective of the projects in this subsector was to improve public health conditions by reducing the incidence of waterborne diseases. The PPARs acknowledged the difficulty in measuring the impact of these projects on health conditions, although there was considerable increase in the percentage of the population having access to potable water.

The major lessons learned in this subsector are the following: (i) the participation of the Government in project preparation enhances the prospects for success; (ii) the success of water supply projects depends substantially on the effectiveness of measures to reduce NRW; (iii) while the least-cost approach to water supply project planning is effective in achieving technical efficiency, it is important to enhance the economic efficiency of such projects by institutional strengthening including improvements in financial management, and by ensuring appropriate pricing mechanisms; (iv) the establishment of independent water supply authorities/institutions with a commercially oriented management and accounting systems would contribute to sustained project benefits; (v) private sector participation in the management of water intake and treatment plants is effective in improving the operational efficiency of water supply; (vi) the Bank's assistance in the water supply subsector should focus on establishing a sound regulatory framework and provision of technical assistance to the Government and to the private sector to improve management information systems (MIS), planning, forecasting, revenue collection, commercial accounting, and quality of service; and (vii) the importance of establishing and strengthening public relations and consumer education by water supply institutions to facilitate acceptance by consumers and community leaders of the need to review and adjust water tariffs on a regular basis in order to achieve full cost recovery.

An impact evaluation study of Bank operations in Malaysia's water supply and sanitation subsector reconfirmed the importance of making private sector participation in the sector more effective by strengthening efficiency through enhanced accountability. This offered challenging opportunities for Bank support for (i) promoting among the Bank's DMCs the development and application of methods that foster greater economic efficiency through inter-sectoral comparisons leading to efficient investment decisions, particularly recognizing the high returns of water supply projects; (ii) providing assistance to improve water resources management

in view of increasing demand due to rapid increases in population and economic growth, including developing innovative methods for reallocating water and promoting its conservation; (iii) providing training for new skills required in the process of restructuring the subsector's institutions, and in the changed environment in which they operate; (iv) determining the appropriate role of regulatory authorities in view of emerging privatization; (v) providing assistance supporting consumers' education and awareness of the full value of piped water and the need for system capacity expansion, specially where progressive privatization is taking place; and (vi) supporting institutional improvement, specially MIS on water production and consumption parameters necessary for sound and efficient investment decisions.

## **2. Urban Development and Housing**

Three regional development projects, which had a total cost of \$131.8 million including Bank financing of \$46.3 million, were postevaluated. All these projects aimed at assisting the implementation of schemes under master plans for integrated regional development in order to achieve the objectives of the NEP, namely, redressing regional imbalances and reducing economic and social disparities among various population groups. All projects involved clearing of land, road construction, and provision of housing and other social infrastructure. The Kedah Regional Development Project (Loan No. 729-MAL) was adjudged generally successful at postevaluation. Although completed with a reduced scope, it achieved its revised targets in a satisfactory and cost-effective manner, generated significant socioeconomic benefits, and appeared to have a high probability of sustainability. The project provided an impetus to the reduction of poverty in the area through improved communications, skills training, and social investments. The other two projects were partly successful. Several factors limited the successful implementation of these projects. In the First Trengganu Tengah Township Development Project (Loan No. 344-MAL), the high per capita cost of regional water supply infrastructure and the generally inferior standard of works in the town development component constrained project benefits. The lack of adequate funding for maintenance was another limiting factor. The Second Trengganu Tengah Development Project (Loan No. 583-MAL), a continuation and expansion of existing programs in the area, was also partly successful. The townships established for low-income groups under the project were at relatively high cost because of overdesign and the smaller actual settler population. Lower than appraisal EIRR estimates and negative FIRRs were posted by some other project components.<sup>1</sup>

Among the lessons learned in the subsector are the need to recognize (i) the importance of flexibility in the implementation of master plans and careful phasing of infrastructural facilities: while a master plan can provide overall guidelines, its assumptions and details need to be continually reassessed; (ii) the value of settlers' participation in development activities; (iii) that the development of towns does enable a higher level and range of services to be provided in settlement areas compared with an estate type settlement pattern, and can encourage youth to remain in rural areas; (iv) the value of mutually reinforcing component packages in regional development projects; (v) the cost-effectiveness of giving preference to development on existing sites as compared with new settlements; (vi) the importance of higher

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<sup>1</sup> The performance of the other two projects with the title "regional development" in them, the two Pahang Tenggara Regional Development projects, also suffered as a result of slow build-up of settler population in the region. All townships and infrastructure facilities, including roads, water supply schemes, houses and commercial buildings suffered from overdesign and underutilization in these two projects. However, these projects have been reclassified as rural development projects and are included under para. 12.

weight to potential economic growth in the ranking criteria for site selection for township development; (vii) the requirement of ensuring that low income group housing is more cost-effective and more specifically targeted; (viii) the importance of an environmental impact assessment during the project design stage and the need to incorporate mitigating measures to address anticipated environmental problems in project design; and (ix) the inevitability of the devolution of responsibility for development activities from a regional development authority to suitable local organizations.

### **3. Education**

The postevaluated projects in this subsector comprised two vocational education projects (Loan Nos. 476 and 673-MAL), with a total cost of \$157.7 million inclusive of Bank financing of \$41.5 million. Both projects were aimed at providing additional capacity for the training of skilled workers, particularly in engineering technologies, thereby increasing the number and quality of trade-skilled entrants to the workforce to help overcome the country's current and projected shortage of craftsmen. The two postevaluated projects were generally successful and contributed significantly to improve educational infrastructure, upgrade staff capabilities through overseas fellowships, improve staff-student ratio, redress imbalances in the regional distribution of educational opportunities, and elevate the image and status of vocational education.

The lessons of experience in the subsector have underscored the need for the following actions: (i) curricula review in line with the changing technological base; (ii) the establishment of a structured and formal system of linkages with industries; (iii) adequate project preparatory work for estimating project cost; and (iv) the provision of adequate institutional support for the implementation of a viable BME system.

### **4. Health and Population**

Two health and population projects costing \$148.1 million, including \$66.9 million of Bank financing, had been postevaluated. The Health and Population Project (Loan No. 511-MAL), intended to provide comprehensive preventive and curative health care services to low-income groups in rural areas and assist the institutional development of government agencies in hospital planning and design, was rated as partly successful. The project involved the construction and equipping of 45 health centers and three district hospitals, as well as consultant services for the planning and design of a district hospital. The health service delivery of the centers was satisfactory but some of them remained underutilized. The long implementation delays decreased cost effectiveness and the cancellation of the institutional support components reduced the project's overall impact. The prospects for long-term sustainability of the project were not so favorable in view of inadequate cost recovery through user charges, the heavy reliance on Government budgetary support to operate and maintain the facilities, and the shortage of qualified medical manpower to staff the health centers and district hospitals. The Health Services Development Sector Project (Loan No. 815-MAL) was designed to serve similar objectives and was adjudged as generally successful. It comprised two parts, namely, (i) the improvement of health facilities and equipment; and (ii) strengthening the institutional capacity of the Ministry of Health (MOH) through consultant services and fellowships. The project improved the rural health care services by providing for the construction and upgradation of 25 health centers in rural areas,

construction of three new hospitals, and upgradation of the facilities at 33 hospitals. The institutional capabilities of MOH have been strengthened. Equipment has been procured and installed and is being utilized.

Project experience in the subsector has demonstrated the need for (i) adopting a sector loan approach which enables the Government to take care of the priority health care needs of the country and to be more flexible in the implementation of the project; (ii) completing land acquisition and site selection prior to loan effectiveness to help avoid delays in project implementation; (iii) designating a coordinating unit for projects involving two or more implementing agencies; (iv) decentralizing the procurement approach for projects involving subprojects at different locations and requiring a variety of equipment; (v) incorporating a cost recovery scheme in ensuring sustainability, particularly because of escalating health costs; (vi) establishing and implementing a simple BME system with minimum data requirements for continued compliance of the collection and submission of necessary data; (vii) preparing detailed analysis of institutional constraints that inhibit the quality of health services; (viii) considering the affordability of incremental recurrent costs and staffing requirements in health projects; and (ix) designing projects that involve changes in processes rather than upgrade physical health facilities to achieve efficiency gains.

## **E. Technical Assistance**

One PPTA (TA No. 1028-MAL), financed from the Japan Special Fund for \$330,183, was postevaluated. Its objective was to prepare a project proposal for enhancing the science and technology assessment capabilities of the Ministry of Science, Technology and the Environment, and of four selected Government research and development institutions. The TPAR, which rated the TA as partly successful, noted that the quality of the proposal was inadequate in that the priorities and specific action plans identified for the preparation of the subsequent Bank-financed project were not well articulated in the final TA report. The experience with this TA has highlighted the complexity of preparing science and technology projects which involve issues related to long-term industrial policies, and indicated that such TAs need to be based on comprehensive information pertaining to the current state of science and technology in a country. It has also underscored the need for the Bank to develop broad strategies in the area of science and technology.

In December 1996, an AOTA for Urban Transport Planning (TA No. 1958-MAL) amounting to \$600,000 was postevaluated. The TA was generally successful. It resulted in six reports including detailed urban transport studies for the three project towns of Johor Bahru, Ipoh, and Sungai Petani; a report on the training needs of urban transport planners; and a manual for the preparation of urban transport plans. The TA highlighted the fact that the primary constraint faced by local authorities in fully implementing urban transport plans was the lack of financial resources. Local governments had limited revenues and were dependent on federal and state allocations. Lessons from this TA include the need to take into account budgetary implications in preparing urban transport plans and the need to allocate resources for training of trainers to ensure continuity in skills development.

## IV. CONCLUSIONS

### A. Overall Assessment

The Bank's overall postevaluation experience in Malaysia has generally been favorable, with 62 percent of the postevaluated projects being generally successful. Two projects (5 percent) were unsuccessful. All others showed indications of at least some success. Projects in Malaysia have had a positive impact on the economic, social and institutional development of the country. Performance of postevaluated projects by sector indicates that the percentage of generally successful projects was highest in the transport and communications sector (82 percent), with all road projects and four of the six port projects being generally successful. Agricultural projects had the lowest percentage of only generally successful projects at 42 percent. Social infrastructure had 64 percent generally successful projects success rate followed by energy with 60 percent. The two unsuccessful projects were in agriculture and energy.

Projects in the agriculture sector provided, among other things, (i) adequate land to landless families; (ii) income generating opportunities to settlers and fishing communities; and (iii) a sustainable supply of general utility timber that helped reduce the pressure on the country's natural forests. Energy projects helped expand generation capacities, increase transmission facilities, and improve the reliability of power supply. Road projects provided for the construction and upgradation of roads resulting in enhanced mobility, while the port projects provided infrastructural support to the development of the regional economies. Water supply projects benefited low-income communities through improved access to potable water. Education projects helped provide skilled workers to meet the emerging industrial needs of the country. The impact of the health and population projects was lower than expected, but they nevertheless were instrumental in improving the delivery of rural health care services and in strengthening the institutional capabilities of MOH. The urban development and housing projects contributed to the enhancement of the social well-being in the project areas in terms of improved communications, skills training, and social investments, notwithstanding the limited success in their implementation.

Project experience has confirmed that adequate preparatory studies at appraisal are vital to project success and that satisfactory performance has generally been conditioned by the institutional maturity of executing agencies. Successful projects in the roads, ports and water supply subsectors benefited from well-conceived project designs. The successful outcome of projects in the agro-industry, fisheries, forestry, roads, ports, water supply and education subsectors were determined by the leadership potential and performance of implementing agencies. In the less successful projects, on the other hand, unrealistic targets, weaknesses in project design, institutional shortcomings, poor performance of contractors, and incongruous policy environment impeded effective realization of project objectives.

Notwithstanding the relatively high rate of success, Bank projects in Malaysia suffered significant implementation delays and cost deviations. The average delay in postevaluated projects was 2.4 years or 74 percent. It ranged from 69 percent in the case of the agriculture and agro-industry projects to 110 percent in the energy projects (Appendix 5). A substantial delay of more than six years was experienced by one port project while the least delay,

i.e., less than one year was observed in projects in the electric power, road, water, and education subsectors.

Cost deviations from appraisal estimates were substantial. Twenty of the 42 postevaluated projects incurred cost overruns averaging about 52 percent, while 22 had cost underruns averaging about 36 percent (Appendix 6). The major reasons for the cost overruns included expanded project scope, land acquisition difficulties, underestimated civil works costs, external factors such as the impact of the 1973 oil crisis and the occurrence of natural calamities, and the effects of implementation delays. Cost underruns resulted mainly from reduced project scope and costs overestimated at appraisal. In three cases (729-MAL: Kedah Regional Development, 709-MAL: Compensatory Forestry Sector Project, and 673-MAL: Second Vocational Education Project), the 1986 recession was also a factor.

Originally, 27 of the 42 postevaluated projects or 64 percent were rated generally successful, 12 or about 29 percent were assessed partly successful, and 3 or 7 percent were rated as unsuccessful (Appendix 7). A recent reevaluation of the forestry project, however, reclassified the project as partly successful from a postevaluation rating of generally successful, reducing the number of generally successful projects to 26 and the average success rate to 62 percent. Meanwhile, a port project was reevaluated as partly successful from unsuccessful at postevaluation, which in turn brought down the number of unsuccessful projects to two and the average failure rate to 5 percent. The average success rate of 62 percent in Malaysia is lower than the 87 percent average for other Group C countries but marginally higher than the average of 59 percent for Group B countries. In terms of actual investment costs and loan amounts disbursed, the generally successful projects comprised about 63 percent and 62 percent, respectively.

## **B. Major Lessons Learned and Current Issues in Malaysia**

The CSPF aims to identify and analyze lessons from Bank-financed projects that would be useful in improving the design, implementation, and operation of future development projects. These lessons of experience could also address implementation bottlenecks of ongoing projects thus facilitating the implementation process and improving the quality of the Bank's assistance to Malaysia, particularly in terms of the responsiveness of these and related projects to prevailing concerns and issues in the country.

The Seventh Malaysia Plan: 1996-2000 (7MP) has outlined the macroeconomic goals of the country, namely, to sustain high growth (i.e. 8 percent per annum) with price stability, and to enhance the country's international competitiveness. Given the existing labor constraints and high rate of investment, the 7MP aims to promote a shift in focus from input-driven to productivity-driven growth, which calls for skills upgrading, capital deepening, and technology development. Human development is thus a major strategic thrust of the 7MP. Other strategic objectives are poverty reduction and improvement in the quality of life, privatization, and sustainable development. The Government has identified priority concerns during the plan period and has set out policy directions, in line with these objectives. Among these are: (i) the review of the National Agriculture Policy (NAP) in the light of the rapid transformation taking place both within the Malaysian economy and internationally; (ii) human resource development through upgrading science, engineering and technology throughout the system, with emphasis on training; (iii) reducing poverty in the poorest states and districts, and among the indigenous communities

and the urban poor; (iv) a strong commitment to the protection of the environment and to sustainable development; (v) subregional cooperation as a vehicle for accelerating economic development in certain areas and as a means for Malaysia to compete more effectively in the international arena; and (vi) expansion of private sector participation in growth and development particularly in non-traditional areas such as infrastructure, education and technology development.

To reflect the priorities of the 7MP, the Bank's program strategy for Malaysia will focus on (i) human development; (ii) regional balance; (iii) environmental management; (iv) capacity building; and (v) sub-regional cooperation. Malaysia is likely to graduate from its Bank borrower status in the not-too-distant future. As such, the Bank foresees a modest lending program and a more substantive technical assistance program to Malaysia. The findings and lessons of experience presented in this CSPF can provide useful inputs in firming up the Bank's packages of assistance to Malaysia for the next five years. The Bank's lending program has been effective in assisting the Government of Malaysia in its growth and development efforts. The lessons of experience suggest the need for further assistance in terms of strengthening institutional capacities of executing and implementing agencies particularly in the areas of policy formulation, project formulation and preparation, and mobilization of private sector participation in development.

The experience of Bank-assisted projects in Malaysia indicates that thorough preparation and appropriate design are pivotal to the success of projects across sectors. Where project formulation was based on comprehensive and sound feasibility studies and detailed designs involving the active participation of the Borrower, project performance had been favorable. It may therefore be useful to provide additional, and more effective, technical assistance to strengthen project preparation capabilities in Malaysia.

Also of importance to the successful achievement of project objectives is the strong implementation capability of executing agencies. Those agencies which were staffed by highly trained, motivated, and competent technical staff, particularly in leadership positions, fared well. The Sabah/Sarawak Fisheries Infrastructure Project proved that state fisheries agencies can implement commercially oriented operations successfully if appropriately structured and staffed. Supporting professional advancement through continuous in-service training can help agencies to develop staff capabilities. The importance of institution building efforts for sustained development underscored the need for the adoption of long-range, sector-oriented plans for improving the effectiveness of selected agencies.

The experience of the less successful projects reiterates the previously cited lesson that project outcomes are largely influenced by the quality of project preparation. The two area development projects demonstrated the difficulty of implementing area development schemes which were not compatible with a country's institutional capacity and emphasized the need for appropriate coordination at the national and subnational levels in the planning of regional and urban development. The unsuccessful agricultural support services project also suffered from weaknesses in project formulation, particularly the lack of a comprehensive feasibility study. The postevaluated PPTA highlighted the complexity of preparing science and technology projects and the need for such TAs to be based on comprehensive information pertaining to the current state of science and technology in a country. While design deficiencies in port, energy and road projects led to substantial revisions in scope and costly implementation delays, the land settlement and area development projects were constrained by the institutional weaknesses of the executing agencies. In many cases, delays could have been minimized had there been realistic implementation schedules and better coordination between multiple executing agencies.

A number of projects in the water supply, roads and health sectors experienced cost overruns and/or implementation delays as a result of land acquisition problems. Land acquisition problems could have been anticipated at appraisal. Likewise, the need for project design to provide more detailed information for designing and operationalizing a simple but effective BME system was underscored by a number of projects in the irrigation and rural development, education, and health and population subsectors.

Experience in several sectors, including power, water supply and ports suggests that output prices have been an important determinant of performance. Public utilities have generally kept charges at reasonable levels on equity-related grounds, but where charges have been inadequate, the performance of projects and implementing agencies had been adversely affected. It is important that the costs of providing goods and services are reflected in the tariffs to make projects financially viable.

An important objective of the settlement and area development projects is poverty alleviation. Project experience has shown that settlers benefited from the projects but did so at a high cost. Bank experience underscores the difficulty of implementing poverty-alleviation projects in the absence of competitive agricultural pricing policies. It also points to the significance of assessing farmer preferences and capabilities in the preparation of settlement and area development projects, and studying the implications of pricing policies and the availability of off-farm employment opportunities in determining their long-term viability and profitability.

Experience has demonstrated the critical role of the private sector in Malaysia's development and sustainable growth. Postevaluation experience of the only Bank-assisted agricultural support services project highlighted the fact that the highly subsidized farm mechanization centers (FMCs) established under the project were unsustainable. Postevaluation experience and the impact evaluation study of Bank operations in Malaysia's water supply and sanitation subsector have underscored the effectiveness of private sector participation in the management of water intake and treatment plants. This assessment called for the provision of more technical assistance to the Government and the private sector to further improve information systems, planning, forecasting, revenue collection, commercial accounting, and quality of service in the subsector.