

Marine Sciences Education Project

The shortage of marine scientists and technicians has hindered the full utilization of Indonesia's ample marine resources. Under the Fourth Five-Year Development Plan special attention was to be given to tertiary level programs in science and technology, particularly in the outer islands. The Marine Sciences Education Project was formulated to diversify the economy away from oil products, improve nutrition, and train professional-level human resources in marine sciences to optimize the utilization of marine resources under sustainable conditions.

Strategies to achieve these objectives were to establish a new marine sciences education program, improve academic and other support services, develop research capacity, and upgrade existing facilities and construct new facilities at six universities. Beneficiaries were to be undergraduate students, university personnel, public and private employers of marine science graduates, coastal communities, and the population as a whole. Components included consultant services, fellowships, civil works, equipment, educational media and software, and funds for operation and research.

Two loans were provided for a total of \$73.3 million on 14 July 1988—\$43.2 million from ordinary capital resources and \$30.1 million equivalent from Special Funds resources. The Project was completed on 30 November 1995 after a delay of 14 months. The project completion report (PCR), circulated in September 1997, rated the Project as successful.

The geographic spread of project universities suited the Government's thrust to develop the outer islands. Significantly more fellowships and consultant inputs were provided than specified, and research funds were provided in excess of the target. Civil works, furniture, and equipment were provided essentially as designed, but with some buildings being poorly constructed and even dangerous. Vessels and vehicles may have all been procured, but some have been lost



to the Project. Operation and maintenance obligations of the Government were not fully met, partly due to the effects of the Asian financial crisis.

The Project did not meet expectations in the development of employable human resources. On average, only about half of the graduates have been able to find jobs in marine sciences or related fields; the other half are either unemployed or work in unrelated fields. Research output has been variable, and benefit monitoring and evaluation (BME) deficient. The Operations Evaluation Mission (OEM) had no success at some universities, nor at the Directorate General of Higher Education, in obtaining basic data.

Fellows' feedback indicated overall satisfaction at having obtained an overseas qualification. While they were critical of their inability to participate in equipment ordering and facilities design, they rated highly the level of encouragement from their superiors, the appropriateness of project teaching materials, and improvements in conservation stemming from the Project. They rated poorly the maintenance of equipment and facilities, and cooperation with the private sector.

At some universities, the OEM found a high incidence of absence of students, faculty, and administrators, and serious underutilization and deterioration of civil works, equipment, books, and vessels. The worst case was the destruction of one of the six field stations due to civil unrest. Very little research was ongoing, and libraries were often devoid of users. The OEM did not see much evidence of a fertile academic atmosphere promoting significant research and excellence in teaching. Returned fellows occupied generally the same positions and did basically the same work as before their advanced studies. The few productive links with other institutions are ad hoc. There is no integrative element among project universities. Employment generated by the Project has been marginal, and the hoped-for modernization of marine industries is not occurring. The Project's effects on gender and development have been minimal. While the PCR made recommendations to ensure



project benefits, the OEM could find little evidence that they had been heeded.

A key issue stemming from the Project's design is the efficacy of advanced degree training as preparation for teaching and research management. This issue had been researched and discussed in the literature long beforehand but was not addressed in project formulation. Another issue is centralization versus localization. The universities were not consulted sufficiently during centralized procurement. And the local project implementation units had an anomalous position, reporting to the Central Project Implementation Unit in Jakarta but ostensibly being under their university administrations. The appraisal report gives almost no attention to management issues, which proved to be critical.

A positive lesson learned from the Project is the crucial role of selecting, supervising, and preparing fellows for training. This aspect was well implemented.

Failure to comply with several loan covenants, viz., those on midterm review, BME, and private sector involvement, hurt the Project. While its relevance was high and its efficacy satisfactory, in terms of efficiency and sustainability of project benefits and the extent to which its major purposes and goals have been achieved, the OEM has reservations and thus rates the Project as partly successful.

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