

Ex-ante Evaluation

1. Name of the Project

Country: The Republic of Indonesia

Project: Hasanuddin University Engineering Faculty Development Project

(Loan Agreement: 03/29/2007, Loan Amount: 7,801 million yen, Borrower: The Republic of Indonesia)

2. Necessity and Relevance of JBIC's Assistance

Against a backdrop of intensifying competition, with goods imported from overseas accompanying rapid development in surrounding countries, and increasing economic deregulation coupled with the increasing importance of Indonesia as an export base amid advancing globalization, the lack of human resources (including engineers) in Indonesia is becoming an issue in an environment where industries are being challenged to improve their competitiveness. Furthermore, the disparity in development between the western region, centered on Java, and the eastern region is significant. While the eastern region does have agriculture, fisheries, and marine resources, there are many areas where development is lagging due to lack of technical capacity and information, infrastructure networks, and human resources. In the future, to promote industrial development by improving local manufacturing capability to enhance value-added aspects, the development of human resources is an urgent issue. At the same time, Indonesia's enrollment ratio in higher education at 15% (2004) is low in comparison with neighboring countries (32% in Thailand, 28% in Malaysia, and 29% in the Philippines). In spite of an acute need for human resources in engineering, the ratio of students in the field of engineering is only about 11% of total student numbers (18% in Japan, 2004). Lacking in facilities and equipment, and with a low number of academic papers by teaching faculty, universities are lacking in both quality and quantity in their educational and research activities. About 70% of the national universities are located in the western region and about 50% of these, including five universities of particular renown, are concentrated in Java. The disparity in higher education between the eastern and western regions is significant.

In its National Medium Term Development Plan (Rencana Pembangunan Jangka Menengah Nasional: RPJM), the Government of Indonesia states its commitment to the promotion of medium- to long-term human resources development in industries with a competitive advantage and the improvement in industrial technology to enhance industrial competitiveness. This is a commitment aimed at strengthening higher education institutions as places to produce human resources to fulfill the needs of the labor market and improve competitiveness through the development of the fields of science and technology. In the Higher Education Long Term Strategy (HELTS: 2003-2010) and the National Education Strategy Plan (RENSTRA: 2005-2009), the Government of Indonesia states its commitment to promote improvement of educational facilities and equipment, training of teachers, utilization of IT, an increase of scholarship programs, and improvement in the curriculum in a policy centered on the three mainstays of improving access to education, raising education standards, and strengthening efficient management and autonomy in universities.

Hasanuddin University, which is located in Makassar, South Sulawesi Province, was established in 1956. With 12 faculties and about 30,000 students, it is now the largest comprehensive university in eastern Indonesia. There are about 4,000 students in six departments in the Engineering Faculty,

which was established in 1960.

However, the university's educational and research facilities and lab equipment are inadequate, and its cooperation with industry is insufficient. To respond to the needs of human resources development in eastern Indonesia, as mentioned above, development and expansion of the Engineering Faculty of Hasanuddin University as the base for human resources development and research and development to contribute to the establishment of a foundation for industrial promotion is vital.

Japan's Country Assistance Program for Indonesia" (November 2004) cites providing assistance that will contribute to the development of industrial human resources, such as in higher education, in creating a democratic and fair society, as a priority area and important subject. Furthermore, in JBIC's Medium-term Strategy for Overseas Economic Cooperation Operations (April 2005), development of infrastructure for sustainable growth and support for human resources development are cited as priority areas. The strategy also places emphasis not only on the development of economic infrastructure but also on contributing to its development in the field of human resources in Indonesia.

Therefore, JBIC's assistance is highly necessary and relevant.

3. Project Objectives

The objectives of this project are to upgrade and expand higher education and to strengthen research activities in the field of engineering by promoting development and expansion of the Engineering Faculty of Hasanuddin University in South Sulawesi Province and, in so doing, to contribute to the development of industries in Indonesia, especially in the eastern region, by strengthening human resources development and improving research capability in the field of engineering.

4. Project Description

(1) Target Area: Makassar city and Gowa District in South Sulawesi Province

(2) Project Outline:

The following will be carried out to move the Engineering Faculty of Hasanuddin University from the current campus at Makassar city and develop and expand it at a new campus in Gowa District.

- (a) Construction of facilities and development of infrastructure (total floor area: about 64,000m², including the Center of Technology)
- (b) Procurement of materials
- (c) Fellowship and research programs (overseas and domestic doctoral degree program and overseas research program, planned for a total of 82 teachers)
- (d) Consulting services (overall project management, detailed designing, assistance in bidding, construction supervision, fellowship assistance, etc.)

(3) Total Project Cost/Loan Amount

11,491 million yen (Yen Loan Amount: 7,801 million yen)

(4) Schedule

April 2007 - September 2013 (78 months)

(5) Implementation Structure

- (a) Borrower: The Republic of Indonesia
- (b) Executing Agency: Directorate General of Higher Education, Ministry of National Education
- (c) Operation and Maintenance: Hasanuddin University

(6) Environmental and Social Considerations

(a) Environmental Effects/Land Acquisition and Resident Relocation

- (i) Category: B
- (ii) Reason for Categorization

This project is classified as Category B because it does not include projects in sensitive sectors or with sensitive characteristics, and does not take place in sensitive areas stated in the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (April 2002), so adverse effects on the environment are deemed not to be significant.

(iii) Environmental Permit

The environmental impact assessment (EIA) report for this project is to be drawn up at the time of the detailed designing and is expected to be approved by the governor of South Sulawesi Province.

(iv) Anti-Pollution Measures

Effects due to waste material, etc., from experimental facilities are to be confirmed by the EIA report (including the management and monitoring plans), which is to be drawn up at the time of detailed design.

(v) Natural Environment

This project is to be implemented in the existing former paper mill site and is likely to have minimal adverse effects on the natural environment.

(vi) Social Environment

The project requires land acquisition of about 38ha, which will be implemented in accordance with the country’s domestic procedures. The project will not involve any involuntary resettlement.

(vii) Other/Monitoring

In this project, Hasanuddin University will conduct monitoring in accordance with the monitoring plans during the construction and in-service period. Furthermore, because slate sheets containing asbestos (classified as non-friable asbestos) were used in the walls and roofing materials in the building of the former paper mill, which is located on the planned site for the implementation of this project, demolition in moist conditions and the disposal of waste materials will be conducted in accordance with the domestic laws of Indonesia. It is planned that this former paper mill will be demolished prior to the commencement of the project and Hasanuddin University will supervise and monitor the demolition and waste disposal works.

(b) Promotion of Poverty Reduction

Access to higher education by the poorest segment of the population in the eastern region is anticipated through a tuition exemption program targeting the poorest segment of the population by the Government of Indonesia.

(c) Promotion of Social Development (e.g. Gender Perspective)

In building the facility, consideration will be given to the design and construction from the viewpoint of universal design for ease of use by persons with disabilities. HIV/AIDS prevention measures will also be undertaken for the construction workers.

(7) Other Important Issues

None.

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator (unit)	Baseline (2005)	Target (2018, 5 years after completion)*
No. of students of the Engineering Faculty (undergraduate, master's, and doctoral course) (people)	Undergraduate 3,871 Master 298 Doctor 20	Undergraduate 4,560 Master 1,060 Doctor 204**
Lecturer-student ratio (lecturer/undergraduate students)	1:13	1:10**
Area of laboratory per student (m ²) (laboratory area/total student number)	1.9m ²	6.6m ² **
Ratio of lecturers with master's and doctorate degrees (%)	69%	85%**
Grade Point Average (GPA) of undergraduate students (points)	3.04	3.3
No. of years for undergraduates students to graduate (years)	5.2	4.5
Rate of graduates obtaining employment within 6 months after graduation (%)	70%	100%
Average number of research papers for publication (per person annually) (number)	0.7	More than 1

* The year when all students enroll as first-year students in the new campus

** Planned target to be reached two years after project completion

(2) Internal Rate of Return (Financial and Economic Internal Rate of Return)

In view of the nature of this project, calculation of profitability is not appropriate and therefore not undertaken.

6. External Risk Factors

None.

7. Lessons Learned from Findings of Similar Projects Undertaken in the Past

Ex-post evaluations of similar past projects imparted useful knowledge with respect to promoting effective utilization of facilities by formulating a comprehensive plan for the utilization, operation and maintenance of equipment. Taking into account the lessons learned, to efficiently implement operation and maintenance of the facilities and equipment, this project plans to reorganize and strengthen the operation and maintenance system of the Engineering Faculty of Hasanuddin University and to assist in strengthening the organization through consulting services.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

- (a) No. of students of the Engineering Faculty (people)
- (b) Lecturer-student ratio
- (c) Area of laboratory per student (m²)
- (d) Ratio of lecturers with master's and doctorate degrees (%)
- (e) Grade Point Average (points)
- (f) No. of years for undergraduate students to graduate (years)
- (g) Rate of graduates obtaining employment within 6 months after graduation
- (h) Average number of research papers for publication (number)

(2) Timing of Next Evaluation

After project completion