Asahan Project: A Shining Example of Economic Cooperation

By Keijiro Seo

The Asahan Project is a mammoth undertaking between Japan and Indonesia that will eventually result in annual production of 225,000 tons of aluminum ingots. But it involves far more than simply building a smelter. Engineers have labored to construct hydroelectric power stations (peak capacity 513 MW) on the upper reaches of the Asahan River flowing from Lake Toba on the island of Sumatra to supply electricity produced to Kuala Tanjung, 120km down-stream on the Malacca Strait. Total construction costs, including two power stations, a transmission line, a three-line smelter, port, roads, water supplies, communications, houses and schools, runs to ¥411 billion (about US$1.79 billion at the rate of US$1 = ¥230).

Construction commenced in 1976, and some facilities went into operation in early 1982. All the rest, including the largest aluminum smelter in Asia, were completed by the end of 1984. A ceremony marking the project's completion was held in November in the presence of President Soeharto.

Such a gigantic project was only possible because of favorable geographical and climatic condition in North Sumatra, including heavy rainfalls reaching 2,000mm a year. Lake Toba, 905 meters above sea level, has a surface area of 1,100 square km. The Asahan River, the lake's only outlet, provides an abundant and stable water flow of about 100 tons per second. Another advantage is that there are two great waterfalls upstream, Siguragura and Tangga, between which there is a high head of water in a short distance.

Thanks to such natural advantages, the Asahan River region has long been known as one of the most suitable sites in the world for hydroelectric power generation. The first water flow survey was conducted in 1908, and a proposal to start hydroelectric generation for aluminum smelting was already being studied as early as 1919. A Dutch company was about to begin building the power plant in 1940, but the project was discontinued due to the outbreak of World War II.

Large-scale preparatory work was commenced with Soviet aid in the post-independence days under President Soekarno, but this too had to be dropped because of political changes in Indonesia. This checkered history led many in Indonesia to term Asahan development a "dream project."

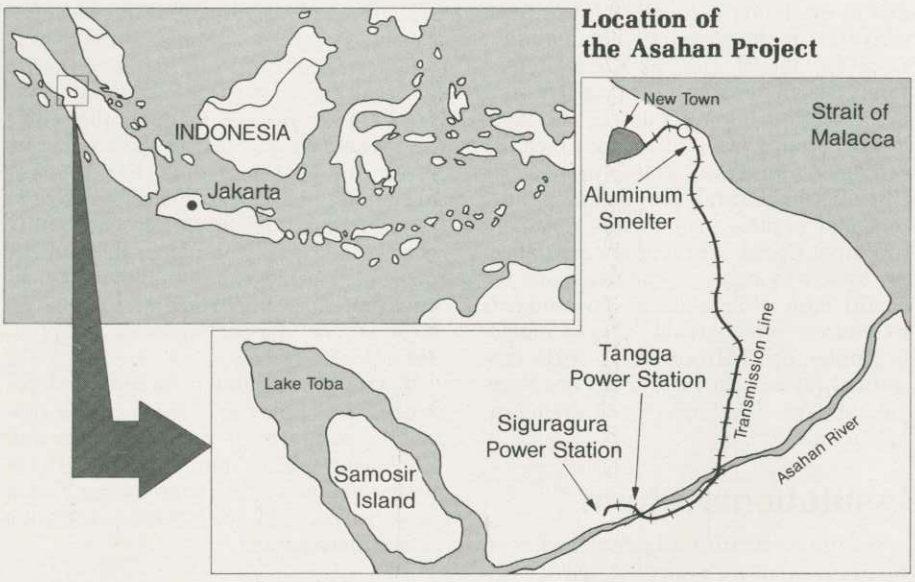
The consummation of the Asahan Project with the full cooperation of the Japanese government, therefore, is the realization of a long-cherished dream of this Southeast Asian nation. It has also profound implications for the relationship between Japan and Indonesia. As Soeharto puts it: "The completion of the Asahan Project means that the dream has become a reality through cooperation between Japan and Indonesia. This successful cooperation not only has great economic significance, but is also a sign of a monumental friendship, which will always be remembered from generation to generation."

The Asahan Project, a monument to economic cooperation between the two countries, has thus been completed on schedule and within the budget. It is now ready to enter full-scale operation. As the head of P.T. Inalum, which has propelled this project from the beginning and will manage it in the years ahead, I feel deeply moved by this success story. I would like to take this opportunity to look back over how the project was started and executed, and to look ahead to what it all means.

Encounter with the Asahan Project

Nippon Koei, a Japanese consulting company with a strong interest in Asahan River hydroelectric power development, first presented Soeharto with a comprehensive Asahan River development plan featuring a combination of hydroelectric generation and aluminum smelting in 1967. The company conducted an on-the-spot survey, followed by a feasibility study of power development, in 1969. The Japanese government extended a loan to Indonesia to help finance the study.

Convinced that the construction of an aluminum smelter, a major consumer of electricity, was essential for the realization of its plan, in 1969 Nippon Koei invited Sumitomo Chemical (now Sumitomo Aluminium Smelting, and formerly the



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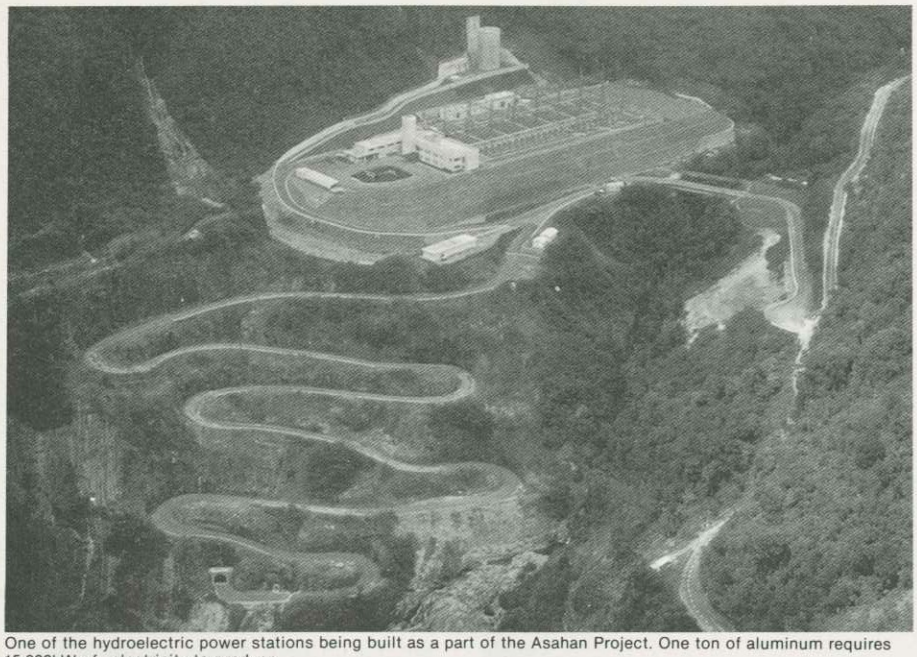

One of the hydroelectric power stations being built as a part of the Asahan Project. One ton of aluminum requires 15,000kW of electricity to produce.

Light Metals Division of Sumitomo Chemical) to participate. A leading Japanese aluminum smelter, Sumitomo Chemical took a keen interest in the hydropower resources of the Asahan River and called upon two other aluminum smelters—Nippon Light Metal and Showa Denko (now Showa Aluminum Industries)—to join in. This resulted in the dispatch in 1970 of a joint three-company feasibility study mission to the Asahan River. It was the beginning of the close ties between the Japanese aluminum smelting industry and the Asahan Project.

Let us recall how the Japanese aluminum smelting industry was faring at the time. In the 1960s the industry continued to expand its production facilities, buttressed by annual increases in demand topping 20%. But already some harsh realities were intruding on the industry.

Producing one ton of aluminum requires 15,000kWh of electricity. With reliance on thermal generation rising to about 70%, the Japanese aluminum industry's energy costs have become higher than in other countries. Indications were that it would lose further international competitiveness.

Japanese smelters needed more thermal power stations to expand production. But power plant construction was severely restricted because of the environmental pollution issue, and it was difficult to find acceptable sites.

Given the mounting tide of resource-nationalism, there were growing calls in bauxite-producing countries for local production of alumina or aluminum.

Against this backdrop, the aluminum smelting industry in Japan had keen interest in developing aluminum smelting abroad as a means of securing internationally competitive supplies. Interest focused especially on imports from regions with excellent hydroelectric resources which could provide a stable supply of inexpensive electricity. Sumitomo Chemical and Showa Denko, for instance, were already participating with Comalco of Australia in the NZAS Project in New Zealand.

Indonesian expectations

Meanwhile, the Soeharto administration was going all out to develop agriculture, and at the same time, to extricate itself from an industrial structure that was excessively dependent on primary products. Priority went to the development of industries which could help increase the amount of raw material processing done prior to export. In those days, moreover, most Indonesian industries were concentrated on Java. To change the economic map, the government ordered that industries be spread throughout the country.

The Asahan Project was completely in line with this policy and it soon ranked as the country's top-priority development scheme.

Besides the three Japanese smelters, such big European and American capital interests as Kaiser and Alcoa were attracted to the Asahan Project and conducted their own feasibility studies. Observing such positive approaches from foreign companies, the Indonesian government decided to entrust foreign interests with a package project incorporating power development, aluminum smelting, and basic infrastructure. In January 1972, it invited international tenders.

In Japan, the three pace-setting aluminum smelters joined with Mitsubishi Chemical Industries (now Ryoka Light Metal Industries), Mitsui Aluminium and with Alcoa and Kaiser of the U.S. to organize a seven-company international consortium to go over the specifications. They concluded that the package project was far too expensive to implement with commercially raised funds, and requested that the Indonesian government carry out the power development side of the project on its own. But the Indonesian government persisted with its original package, and, much to its disappointment, international bidding closed in July 1972 with none of the invited firms participating.

To break the impasse, the Indonesian

Investment and Financing of the Asahan Project (in ¥ billion)

Investment	
Power stations	123
Aluminum smelter	240
Infrastructure	48
Total	411
Financing	
Equity (22.2%)	
Indonesian government	22.775 (25%)
Nippon Asahan Aluminium	68.325 (75%)
Total	91.0
Loan (77.8%)	
G.O.I loan	31.99
OECF yen credit	61.55
EXIM joint loan	226.36
Total	319.9

Notes: G.O.I loan: Loan from Indonesian government
OECF: The Overseas Economic Cooperation Fund
EXIM joint loan: Joint loan of EXIM Bank of Japan and Japanese commercial banks

The Asahan complex is expected to produce 225,000 tons of aluminum ingots every year.

government sent an emissary to Tokyo in August 1972 and asked the Japanese government to provide enough financial support to enable private enterprises to tackle the power-aluminum package project. The five Japanese smelters agreed to study the project on the condition that they obtain long-term low-interest soft loans. They were obviously attracted by a deal which would give them a stable supply of cheap electricity amid rising oil prices.

Master agreement

While preparing to raise the necessary funds, the five Japanese companies, led by Sumitomo Chemical, got down to negotiating detailed investment conditions with the Indonesian government. It took a year to decide the ratio of investment, taxation, preferential measures and period of operations to be allowed, and in January 1974, a basic agreement was signed. The U.S. companies, which were still undecided, finally bowed out in August that year. They based their decision on the enormous cost and difficulty of acquiring the soft loans essential for power development.

In the wake of the basic agreement came another round of negotiations on the master agreement, stipulating the details of the project. The master agreement was negotiated with both sides sitting down at the table with unusual enthusiasm. Sumitomo Chemical, representing the Japanese side, organized a project team of some 20 dedicated specialists from various fields. During the talks, this team repeatedly shuttled between Tokyo and Jakarta.

The Indonesian side was no less forthcoming. The government appointed the Asahan Technical Committee, composed of experts from various ministries, as the sole channel for negotiations with the Japanese. Mr. A. R. Soehoed, later Minister of Industry and now chairman of the Asahan Development Authority, led the committee with impressive efficiency. The negotiations often lasted until midnight. Both sides stated their sometimes conflicting cases with all seriousness and sincerity. They worked together to ensure a fair distribution of benefits from the project and make it a symbol of friendship between the two countries that would go down in history. In drafting the agreement, the negotiators tried to make the arrangements as detailed as possible in order to prevent any doubts or disputes from arising later. The master agreement was initialed in December 1974, and it was thanks to the circumspect attitude of both sides at the negotiating table that unnecessary disputes would later be avoided and the project concluded successfully, right on schedule.

National project

After initialing the master agreement, the five Japanese smelting companies went into top gear to raise the necessary funds. Construction costs were already shooting up because of the 1973 oil crisis. Most basic industries in Japan were in the grip of a structural recession, and the five partners in the project were no exception. But the project, based on hydropower, continued to gain in importance. It won high marks for its potential contribution to Japan-Indonesia friendship. And on the strength of these expectations, the companies asked the Japanese government for financial support.

Meanwhile, the Indonesian government, keen on the early implementation of the project, had also asked for Japan's financial assistance, and was prepared to shoulder an appropriate portion of the costs involved.

The five Japanese core companies expanded the consortium into a 12-firm undertaking by successfully persuading seven trading companies to join. The aim was to strengthen their fund-bearing capacity.

In July 1975, the Japanese government decided to extend financial support for the Asahan Project in consideration of the following four factors:

(1) Financial assistance had been strongly requested by the Indonesian government;

(2) The stage had been set for the Japanese side to promote the project, with the participation of aluminum smelters and trading companies;

(3) The project conformed to Japan's industrial policy of promoting development of aluminum ingot sources abroad;

(4) The project would contribute greatly to the economic development of Indonesia and promote friendship between Indonesia and Japan.

The decision paved the way for colossal loans to be pledged by government-affiliated banks and organizations, such as the Export-Import Bank of Japan, the Overseas Economic Cooperation Fund and the Japan International Cooperation Agency (JICA). All the conditions were thus set for the project to evolve into a

national electricity-aluminum project for both countries.

The Japanese group finally signed the master agreement with the government of Indonesia in Tokyo in July 1975. November of the same year saw the founding of Nippon Asahan Aluminium, an investment company. In January 1976, P.T. Indonesia Asahan Aluminium (P.T. Inalum), a joint venture between Nippon Asahan Aluminium and the Indonesian government, was established to execute the project.

To back up its smooth implementation, the Indonesian government also created a new administrative body, the "Asahan Development Authority." It was a streamlined version of the administrative agencies involved in the project.

Construction work began in mid-1976. Later, in 1978, the construction budget was increased from ¥250 billion (US$1.09 billion) to ¥411 billion (US$1.79 billion) to absorb both specification changes based on geological and other surveys and possible price increases during the construction period. This increase was covered with funds provided by the above three Japanese governmental institutions, while the Indonesian government raised its stake in P.T. Inalum from 10% to 25%.

Impact of the Asahan Project

Today the Asahan Project facilities are working smoothly. As of the end of 1984, a total of 271,000 tons of high-quality aluminum ingots bearing the Inalum brand had been shipped within Indonesia and to Japan. Yet the social and economic effects of the project may ultimately prove even more important. Some of these are:

(1) Resources utilization and regional development:

The rich water resources of the Asahan River have finally been developed together with aluminum smelting. This will facilitate the future development of the hydropower of the Asahan River, whose potential tops one million kW, and will contribute to industrial development and improved living conditions in North Sumatra.

(2) Employment:

During the construction period, an average of 5,000 Indonesians were employed on the project, increasing to approximately 15,000 at its peak. Since the project went operational, about 2,500 Indonesians have been hired, substantially increasing job openings in North Sumatra.

(3) Technological transfer:

As many Indonesian contractors as possible were used for the construction work. The most modern construction technology was transferred to Indonesia, especially through the construction of an underground power station, arch-type dams and aluminum smelters—the first facilities of their kind in the country. A training center was set up to teach operating and maintenance skills, and about 100 young Indonesians were brought to Japan for training as key personnel. Employees of Inalum are also undergoing on-the-job technical training. All this serves to foster the fresh talent that will shoulder the Indonesian industry of tomorrow.

(4) Aluminum downstream industry and foreign currency earnings:

The Indonesian aluminum processing industry, which previously had to import aluminum ingots, will prosper thanks to domestic procurement of raw materials. Meanwhile, an increasing share of the ingots will be exported, mainly to Japan, earning about $300 million a year in foreign currency. This will help improve the country's balance of payments position.

(5) Other industries and contribution to local community:

Ports and roads are being improved, and electricity is being supplied from power stations for public use. Such improvements can be the basis for the development of other industries in the Asahan region. The hospital, school, water system and sports and cultural facilities built as part of the project are being utilized not only by Inalum employees but also by neighboring residents. Welfare in the regional community has taken a dramatic step forward.

In addition to the above effects of the project in Indonesia, the Asahan success story has big implications for the Japanese aluminum industry. Hard hit by the two oil crises, Japanese smelters have lost much of their international competitiveness. Production capacity, once 1,640,000 tons annually, has been slashed to only 350,000 tons and idle plant and equipment scrapped. As a driving force in the overseas development of aluminum sources, the Asahan Project is expected to give more muscle to the feeble Japanese aluminum industry.

Last but not least, the Asahan Project will serve to further deepen the friendship between Japan and Indonesia, which have so much to contribute to each other in economic, cultural and political fields. This vast undertaking has truly been a case study in successful economic cooperation. ●

The Asahan Project

The Asahan Hydroelectrical and Aluminium Smelting Project—the Asahan Project—is one of Japan's major investments in Indonesia. Against all odds and some apprehension in certain circles on both sides an agreement was reached in mid-1975 and the project commenced production in early 1982; later in the year the first lot of primary aluminum was shipped to Japan, and at the close of 1984 the project was fully completed, right on schedule and well within budget.

Japan's financial support to the project is very substantial, in particular through its official finance institutions; but Indonesia too has a major stake in the project.

The President of the Republic of Indonesia has called the project a Monument—a tangible expression—of the close relationship between Japan and Indonesia, a symbol to be recognized by future generations.

The project will provide Japan with a stable supply of vital industrial raw material, which Japan will not be able to produce domestically any more and the potential is there for an even larger supply at prices reasonably free from the vagaries of an erratic market.

For Indonesia, however, the ultimate objective goes far beyond mere economic issues.

The Asahan Project is intended to be a new avenue for the establishment of a modern industrial base, for its people to master sophisticated technology and to enhance new developments, economic and social.

For the Japanese companies assigned to operate the venture, the objective should therefore not be guided only by profit maximization, albeit a legitimate objective, but to make the venture really beneficial and meaningful for both sides.

For a highly industrial society, compelled by necessity to hard work and face fierce competition, this added moral obligation may not be readily apparent.

I hope that the Asahan Project will prove itself not only in physical terms but also as a model for a meaningful cooperation between advanced and developing countries, possibly a model for an effective North-South relationship.

A. R. Soehoed
Member of the Supreme Advisory Council, concurrently Chairman of the Asahan Development Authority