

Rehabilitation Project of Radio and Television Networks

Report Date: October 2002

Field Survey: July 2001

1. Project Profile and Japan's ODA Loan



Project Site



Maintenance Center



Studio Camera (TVRI)



Computer Room (MC)



Transmitter (RRI)

1.1 Background

Indonesian radio and television broadcasting services were provided throughout the country by the Indonesian National Radio Station (RRI)*¹ and the Indonesian National Television Station (TVRI)*², respectively, which were both under the control of the Directorate General of Radio, Television and Film, part of the Ministry of Information.

At the time of appraisal, RRI had 49 stations nationwide, and transmitted in both the medium wave and short wave spectrums. The population coverage (the portion of population that receives the broadcast signals) was 68%*³. TVRI had 10 television stations, 7 mobile TV stations, and 244 relay stations. Population coverage of TVRI was 68%. Approximately 5.8 million television sets were registered at the end of 1988.

The Indonesian broadcast system had problems with its old facilities, resulting from improper maintenance management and with the lack of program-making functions. If this state of disrepair had persisted, the situation would have worsened, and some equipment could have become obsolete. Given this situation, a plan was drawn up to fully restore the broadcasting system during the period of the Fifth Year Development Program.

1.2 Objectives

To improve and rehabilitate radio and television broadcasting facilities, which is considered the first priority of the Fifth Five Years Plan of Broadcasting, in order to upgrade the quality and reliability of broadcasting services throughout Indonesia. The Plan sets out the following goals:

- 1) Dissemination of information, education and culture to all the people of Indonesia
- 2) Enhancement and upgrading of National Ideals among all the people of Indonesia
- 3) Support and contribution to the National Development Plan

It is hoped that this project will help achieve these goals.

1.3 Project Scope

The project consists of replacement and rehabilitation of radio and television broadcasting facilities, and construction of a new maintenance center. Details are as follows:

¹ RRI stands for "Radio Republik Indonesia" (Official Indonesian appellation)

² TVRI stands for "Televisi Republik Indonesia" in Indonesian. (Official Indonesian appellation)

³ This figure is for MF and HF only. It would be around 80% if it includes other frequencies such as FM.

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|--|-------------|
| 1) Radio Transmitting Facility of MF Radio Station | 10 stations |
| i. Replacement | 5 stations |
| ii. Rehabilitation | 5 stations |
| 2) Renewal of Old Radio Studio | 10 studios |
| 3) Renewal of Old Television Studio | 3 studios |
| 4) Construction of New Maintenance Centers | 3 centers |

The Japan's ODA loan covers the entire foreign currency portion and part of the local currency portion.

1.4 Borrower/Executing Agency

The Government of the Republic of Indonesia / Directorate General of Radio, Television and Film, Ministry of Information (DGRTF)

1.5 Outline of Loan Agreement

Loan Amount	7,478 million yen
Loan Disbursed Amount	7,324 million yen
Date of Exchange of Notes	December 1990
Date of Loan Agreement	December 1990
Terms and Conditions	
Interest Rate	2.5 %
Repayment Period (Grace Period)	30 years (10 years)
Procurement	Partially Untied
Final Disbursement Date	December 1996

2. Results and Evaluation

2.1 Relevance

Broadcasting is a very important and effective information tool for the overall development of Indonesia; it aims to 1) disseminate information, education and culture to all people of Indonesia, 2) enhance and upgrade National Ideals among all Indonesians, and 3) support and contribute to the National Development Plan. However, the deteriorating conditions of broadcasting facilities had become critical; the facilities were old, maintenance was poor, and broadcasting programs was increasingly problematic. Left in disrepair, some facilities could have become inoperable. Thus, full restoration of the broadcasting system was the top priority in the Fifth Five Year Plan of Broadcasting. The project was appropriate for the achievement of that goal.

Also, in the 2nd 25-year Indonesia National Long Term Development Plan, drawn up in April 1994, equal social and economic opportunity for all Indonesian people was given priority as a very important issue. In that context, broadcasting media were considered an indispensable tool to upgrade the National Ideals among all the people of Indonesia, and to enhance the participation of the people in the national development. Even at present the project still meets with those objectives.

2.2 Efficiency

2.2.1 Project Scope

The MF Radio Station in Fak Fak was excluded from the project scope, since acquisition of land for construction was not possible. As an alternative, the construction of a MW Transmitter of 5kW --

necessary to cover all of Irian Jaya – was added for Serui Radio Station. At the time of appraisal, there was only a 600W SW Transmitter in Serui Radio Station, and its short wave broadcasting was disturbed due to fading. Also, FM receiver was not available at Irian Jaya. For those reasons, it was decided to add the construction of a MW Transmitter, which can transmit to all of Irian Jaya. The project objective has been efficiently achieved by this change in the project scope.

At Medan television station, which was established in 1970, only black and white programs were produced at the time of appraisal. However, as the facilities were very old, and spare parts were no longer available, the installation of equipment for producing color programs was also added to the project.

None of the changes mentioned above negatively influenced the efficiency or effectiveness of the project.

2.2.2 Implementation Schedule

The completion of construction was delayed by about 1 year because of the changes in the project scope already mentioned, and because it took time to acquire a telephone line for exchange of data between each maintenance center.

2.2.3 Project Cost

The total project cost did not run over budget, as the planned project cost was 8,797 million yen, and the actual project cost was 8,281 million yen. As for the ODA Loan Portion, the actual cost was 7,324 million yen, almost equal to the planned cost of 7,478 million yen.

2.3 Effectiveness

2.3.1 Rehabilitation and Replacement of Radio Transmitting Facility

The total output power of RRI radio transmitters and the number of radio transmitters is shown in Table 1, and receivable population and population covered is shown in Table 2. These figures indicate the extent to which the coverage area of the station has expanded. Both the total output power of radio transmitters and the number of radio transmitters have increased.

Whereas the ultimate goal of rehabilitating radio transmitting facilities that had deteriorated was to recover the full range of radio coverage, it was hoped that replacing old facilities would expand the coverage area. Radio receivable population was expected to increase as a result of this project.

As Table 1 and 2 indicate, the total output power of radio transmitters in Indonesia increased from 1995, the year the project was completed, to 1996. Therefore, the project successfully and clearly raised radio transmitter output power. Also the project expanded radio coverage area, and moreover, it became a basis for the further expansion of radio coverage in the following years.

Table 1: Radio Transmitter Total Output Power and Number of Radio Transmitter

		Year 1993	Year 1994	Year 1995 Completion	Year 1996	Year 1997	Year 1998	Year 1999	Year 2000
Radio Transmitter Total Output (KW)	SW	2,235.5	1,808.7	1,808.4	4,058.4	3,896.4	3,946.4	4,695.9	4,667.8
	AM	1,212.0	1,219.3	1,237.3	1,238.3	1,240.3	1,256.8	1,260.3	1,455.4
	FM	71.4	78.6	79.8	81.8	125.0	354.6	515.1	509.9
Number of Radio Transmitter (Sets)	SW	135	126	126	135	131	132	134	133
	AM	114	129	141	143	144	151	154	168
	FM	150	159	170	172	207	325	390	242

Source: Directorate General of Radio-Television-Film, RRI

Table 2: RRI - Number of Receivable Population (Listener) and Population Coverage

	Year 1995 (Completion)	Year 1996	Year 1997	Year 1998	Year 1999	Year 2000
Number of Listener (1,000 Listeners)	179,750	182,260	190,000	192,466	194,950	197,485
Population Coverage (%)	92	93.47	93.49	93.50	94.17	96

Source: Directorate General of Radio-Television-Film, RRI

2.3.2 Renewal of Radio and Television Broadcasting Studios

The renewal of old broadcasting facilities has contributed indirectly to the development of program content. In particular, replacing equipment for broadcasting in black and white with those for color has greatly improved the quality of television programs.

2.3.3 Construction of New Maintenance Centers

New Maintenance Centers were constructed in this project to maintain the broadcasting facilities and equipment of TVRI and RRI. TVRI and RRI have reported that the guidance provided by consultants and the supply of operation and maintenance equipment and spare parts have helped to prolong the life span of their broadcasting equipment. The maintenance centers are helping to promote the efficient use of radio and television broadcasting facilities, thus upgrading the quality of broadcasting activities.

2.4 Impact

2.4.1 Impact on the Overall Goals

Both RRI and TVRI broadcast mostly news programs, public information from the government, and educational programs. Therefore, it can be said that the project is contributing to the government's overall goals, namely "1) disseminating information, education and culture to all the people of Indonesia, 2) enhancing and upgrading the National Ideals among all the people of Indonesia, and 3) supporting and contributing to the National Development Plan". Examples of RRI radio programs related to the overall goals mentioned above that were broadcast in 2000 are shown in Table 3.

Table 3. Radio Broadcasting Programs

Dissemination of Education	National Ideals	National Development Plan
Education Radio Program	Indonesia Dynamic	Business Information
Science & Technology	Parliament Info	Business Portrait
Open University	Hallo Indonesia	
Encyclopedia	Talk Show	
Religious Education	Interactive Dialogue	
Time for Broadcast Program in year 2000		
1037 hours	423 hours	117 hours

Source: Program Planning RRI Jakarta

2.4.2 Impact on the Natural Environment and on Local Residents

According to RRI, there were no negative impacts on the natural environment or on local residents caused by the implementation of the project. On the contrary, the programs broadcasted have benefited to the economy, education, and the natural environment.

2.5 Sustainability

2.5.1 Operation and Maintenance

The operation and maintenance of the project has been performed by RRI and TVRI. Both agencies were supervised by the Directorate General of Radio, Television and Film, of the Ministry of Information (DGRTF), until 1999. However, with the restructuring of government ministries, the Ministry of Information, which had supervised the operation of RRI and TVRI, was dissolved in 1999 and DGRTF became subject to the Ministry of Communication temporarily. In July 2000, however, it was determined by the Indonesian government that the Directorate General of Supervision of State Owned Companies, of the Ministry of Finance would supervise the operations of RRI and TVRI. Discussions to convert RRI and TVRI into public companies are underway.

Nevertheless, the administration of the three Maintenance Centers that were formerly under the supervision of DGRTF is still unclear; staffs are provided by both RRI and TVRI. Also, in the Medan Maintenance Center and the Makassar Maintenance Center, both of which were visited during this post-evaluation survey, the number of staff was cut from 22 to 6 and from 27 to 8, respectively, after the dissolution of Ministry of Information. (As for the Jakarta Maintenance Center, there are 24 staff members as of August 2000). Moreover, the budget for the maintenance centers does not come directly from the government, but is allocated from TVRI; it is to be used only for operational purposes, not for the procurement of spare parts or other maintenance-related costs. At present, Medan Maintenance Center receives only Rp.30 million annually, and Makassar Maintenance Center Rp.20 million. (The budget for Jakarta Maintenance Center was not provided.) Considering this situation, it is necessary to clarify the administrating authority of each maintenance center, and whether the centers should be supervised by RRI or by TVRI, although it may be difficult to keep the same operation and maintenance system after doing so.

2.5.2 Technical Capacity

RRI has a Radio Training Center (RTC), and TVRI has a Television Training Center (TVTC), and together they operate a Multimedia Training Center (MMTC). The training and education of staff for both radio and television is executed in those institutions. In this respect, no particular problems have been found in the technical capacity of operation and maintenance of radio and television stations. However, in terms of restoration of the broadcasting facilities, the present technical level is not high enough to cope with serious breakdowns. Shortage of staff with high technical skills is the main crucial issue at the moment.

2.5.3 Condition of Equipment

For this evaluation, the facilities of RRI and TVRI in Medan, Manado, and Makassar, and the maintenance centers in Medan and Makassar were inspected. The MW transmission facilities in those sites were in good condition.

Television Studio Equipment was generally found to be in good condition. However, some broken spare parts were being replaced with components from machines that were out of order, since they could be obtained in Indonesia. Many of those spare parts are expensive, and are not available in the local market; ordering from the manufacturer is time-consuming and expensive. Another serious problem is that maintenance funds have been insufficient. Only 30% to 70% of the requested budget is approved every year. Under such circumstances, stable procurement of spare parts is very difficult.

The transmission tools and measurement equipment in the maintenance centers were in good condition. However, there are not enough spare parts owing to budget limitations, as described before. Also, the inventory checking system connecting the 3 centers is used only occasionally since the communication cost is high. Also, specifications of computers are becoming out dated.

Even under such circumstances, the role of the maintenance centers is very important. They supply spare parts and offer engineering services. To enhance their function, there is an urgent need to clarify the administration authority and to allocate appropriate funds to the centers.

2.5.4 Facility Maintenance Methods

Repair technicians, repair rooms, measuring equipment and a manual/instruction book are available for performing maintenance on the broadcasting equipment. The measuring equipment includes an oscilloscope, a distortion meter, a frequency meter, and a multimeter. The equipment is cleaned and checked every three months, and tuned every six months. No particular problem has been found in the present facility maintenance methods.

2.5.5 Financial Status

The historical record of actual expenses and annual budget figures for TVRI are shown in Tables 4 and 5, respectively. (Those for RRI were not available.) The approved budget is only 40% of the requested budget every year, yet funding is stable. However, it is not sufficient to cover maintenance costs; a reinforced budget plan is necessary.

Table 4. Actual Expenditure for TVRI (Unit: Thousand Rupiah)

Fiscal Year	Maintenance	Operation	Total
1990	7,975,606	86,735,634	94,711,240
1991	7,410,215	88,345,064	95,755,279
1992	2,555,135	140,247,978	142,803,113
1993	10,548,411	151,753,119	162,301,530
1994	10,683,046	215,957,969	226,641,015
1995	25,804,560	219,544,141	245,348,701
1996	26,856,046	240,580,062	267,436,108
1997	23,782,678	237,968,244	261,750,922
1998	20,152,499	278,751,140	298,903,639
1999	31,415,114	245,795,196	277,210,310
2000	37,024,698	268,035,083	305,059,781

Source: TVRI

Table 5. Annual Budget for TVRI (Unit: Thousand Rupiah)

Fiscal Year	Maintenance		Operation		Total	
	Request	Distribution	Request	Distribution	Request	Distribution
1990	11,963,409	5,981,705	130,103,451	52,041,380	142,066,860	58,023,085
1991	11,115,323	5,557,661	132,517,596	53,007,038	143,632,919	58,564,699
1992	3,832,703	1,916,351	210,371,967	84,148,787	214,204,670	86,065,138
1993	15,822,617	7,911,308	227,629,679	91,051,871	243,452,296	98,963,179
1994	16,024,569	8,012,285	323,936,954	129,574,781	339,961,523	137,587,066
1995	38,706,840	19,353,420	329,316,212	131,726,485	368,023,052	151,079,905
1996	40,284,069	20,142,035	360,870,093	144,348,037	401,154,162	164,490,072
1997	35,674,017	17,837,009	356,952,366	142,780,946	392,626,383	160,617,955
1998	30,228,749	15,114,374	418,126,710	167,250,684	448,355,459	182,365,058
1999	47,122,671	23,561,336	368,692,794	147,477,118	415,815,465	171,038,454
2000	55,537,047	27,768,524	402,052,625	160,821,050	457,589,672	188,589,574

Source: TVRI

Comparison of Original and Actual Scope

Item	Plan	Actual
(1) Project Scope 1.MF Radio Station 1) Replacement - Old medium wave and short wave radio transmitting stations to 10 kW medium wave transmitting stations 2) Rehabilitation - Restoration of the function (replacement of the unit, parts, repair, cleaning and adjustment) of present medium wave radio transmitting station 2. Radio Studio Renewal of old radio studio (main adjustment equipment, studio equipment) 3. Television studio Renewal of a black and white television studio, and change them into color television studio (color television studio camera, audiovisual monitor etc.) 4.Construction of new maintenance centers 1) The headquarters 2) Districts 5.Consultancy Services - Foreign - Local	1. Manado (MW Transmitter) 2. Palu (MW Transmitter) 3. Fak-Fak 4. Ternate (MW Transmitter) 5. Sorong (MW Transmitter) 1. Jakarta (MW Transmitter) 2. Semarang (MW Transmitter) 3. Surabaya (MW Transmitter) 4. Banjarmasin (MW Transmitter) 5. Makassar (Ujung Pandang) (MW Transmitter) 1. Fak-Fak (Studio & FM Link) 2. Ternate (Studio, FM Link & MW Transmitter) 3. Sorong (Studio & FM Link) 4. Manokwari (Studio, FM Link) 5. Nabire (Studio, FM Link & Transmitter) 6. Wamena (Studio & FM Link) 7. Serui (Studio & FM Link) 8. Merauke (Studio & FM Link) 9. Biak (Studio & FM Link) 10. Gorontalo (Studio, FM Link & MW Transmitter) 1. Makassar (Ujung Pandang) 2. Manado 3. Palembang 1. Jakarta 2. Medan 3. Makassar (Ujung Pandang)	As planned As planned No scope of work in Fak-Fak As planned As planned As planned As planned As planned As planned As planned As planned As planned Adding 5kW MW Transmitter in Serui As planned As planned As planned As planned As planned As planned As planned Adding Color Studio Equipment in Medan As planned As planned As planned As planned As planned
(2) Implementation Schedule - Loan Agreement - Appoint of Consultants - Tender Procedure - Equipment Contract - Equipment Manufacturing Installation, etc.	September 1990 July 1990 to June 1991 July 1991 to March 1992 September 1992 January 1992 to February 1993	December 1990 November 1991 to December 1995 July 1992 to September 1992 January 1993 January 1993 to August 1995

- Construction (Center & Section)	January 1992 to February 1993	September 1993 to March 1994
- Training	June 1993 to March 1994	June 1993 to July 1993
(3) Project Cost		
Foreign currency	6,499 million yen	7,137 million yen
Local currency	28,723 million Rp.	22,927 million Rp.
(in yen)	2,298 million yen	1,144 million yen
Total	8,797 million yen	8,281 million yen
ODA loan portion	7,478 million yen	7,324 million yen
Exchange Rate	1Rp.=0.08 yen (March 1990)	1Rp.=0.05 yen (March 1993)

Independent Evaluator's Opinion on Rehabilitation Project of Radio and Television Network

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The project is relevant to the Indonesia's long-term development program as stated in The 2nd 25-year Indonesia National Long Term Development Plan, demanded an equal social and economic opportunity for all Indonesian people. The project complied with the more specific 5th Five Year Plan of Broadcasting to be performed during Repelita V (1989-1994). The project also met the priority of the Indonesia's government development policy set for the Repelita V, to promote especially the eastern part of Indonesia (KTI)'s development program.

The project was the first of 2 phases of an Indonesia's broadcasting network rehabilitation program proposed by JICA study in 1990. The project included 3 subsystem's improvement program, all were guaranteed a high priority by the JICA recommendation.

The target areas of the project were 26 locations throughout Indonesia, mainly the KTI, where the development facilities were scarce and suffering lag from their compatriot in the western part of Indonesia. The project was expected to expedite the development pace in the KTI and fill the gap between the two. The project tend to be more political-oriented than business-intended, therefore economic feasibility was likely not the main concern.

The scope of the project was expanded with some additional works, resulted in a few months delay. However, the project could still maintain its relevancies to its intended goals and manage its efficiency by keeping the cost within budget.

As expected, the project provided positive impacts on improving broadcasting network in Indonesia. The project had delivered broader radio coverage, especially for covering the KTI, better quality and more reliable equipment for radio and television broadcasting, and more advanced production facilities/studios for developing and enriching the program contents. The project had also provided the maintenance centers to prolong the life span of the equipment, promote the efficient use of radio and television broadcasting facilities, and upgrade the quality of broadcasting activities.

The project provided indirect impact on supporting the development program for broader areas of Indonesia, particularly the eastern part, by educating and promoting better standard of living and welfare as well as allowing the people to have better information access on economics, entertainments and social service. The project didn't have any significant impact on natural environment.

Owing to the financially dependent status of TVRI and RRI from government, the routine budget was not sufficient for bearing the project's operation and maintenance expense. This could threaten the long sustainability of the project. However, any steps necessary for making TVRI/RRI more financially capable were underway. Overall, Evaluator agrees that the project has accomplished its intended goals. The project provides positive impacts to contribute significantly more to the objectives and is believed to sustain longer than its negative impacts.