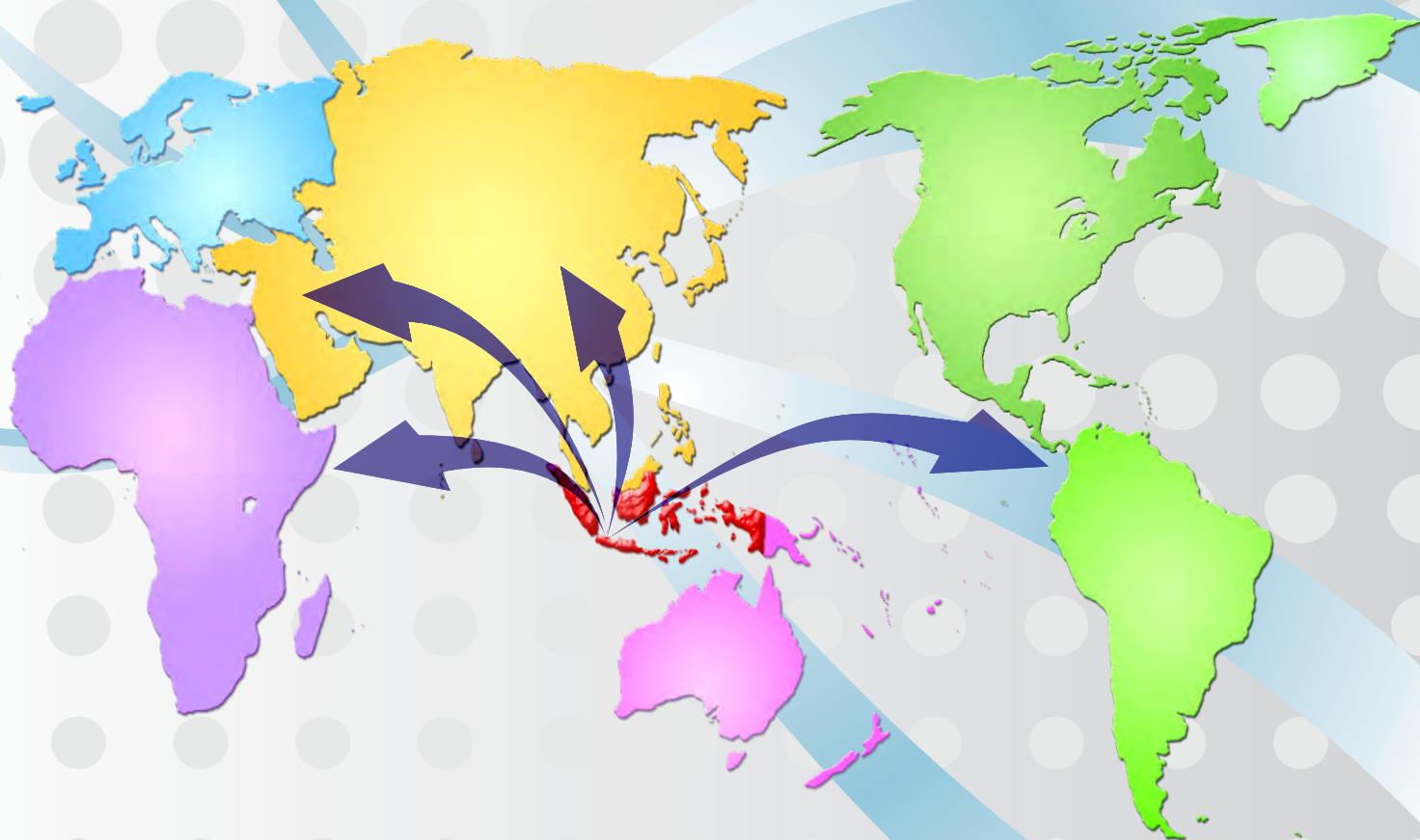




Japan International Cooperation Agency
Indonesia Office

Indonesia's Development Knowledge through Japan's Cooperation For South-South and Triangular Cooperation





Contents

i

Foreword

1 **Section 1**
Economic Policy and Macroeconomic Management

3 **Section 2**
Governance

5 **Section 3**
Regional Development

7 **Section 4**
Electricity and Energy

9 **Section 5**
Transport and Traffic

11 **Section 6**
Telecommunication

13 **Section 7**
Agriculture and Fisheries

15 **Section 8**
Private Sector Development

17 **Section 9**
Health and Medical Care

19 **Section 10**
Education

21 **Section 11**
River Basin Development and Management

23 **Section 12**
Disaster Management

25 **Section 13**
Urban Environment, Water and Sewerage Systems

27 **Section 14**
Preservation of Forests

Foreword

Amid recent steady growth of developing countries, Indonesia's expected global role is increasing significantly as a Middle Income Country. South-South and Triangular Cooperation (SSTC) is an important strategic tool for the Government of Indonesia (GOI) to play the expected role to contribute to international development cooperation. GOI's progress of SSTC promotion in the past five years has been equally remarkable: National Coordination Team (NTC) was established as a redefined coordination body of SSTC in Indonesia, Bali High Level Meeting on Country-Led Knowledge Hubs was held with the attendance of Indonesia's Vice President, Mr. Boediono, among others.

The Government of Japan quickly responded to Indonesia's initiative by strategically incorporating SSTC into one of its Country Cooperation Programs: "Assistance for capacity building to respond to issues of Asian region and international society." Under the Program, JICA Indonesia Office ventured on mapping available knowledge for SSTC which had been accumulated through the bilateral cooperation of Indonesia and Japan in the past 60 years. Under this long period of cooperation, Japan International Cooperation Agency (JICA) has contributed towards Indonesia's socio-economic development and co-created numerous sector development knowledge assets through a wide range of cooperation engagements of Yen Loan, Grant Aid, Technical Cooperation Project, etc. Part of those assets has also been extending cooperation to other developing countries through either Indonesia's own initiatives (called South-South Cooperation) or joint initiatives with Development Partners including JICA (called Triangular Cooperation).

The mapping exercise is a laborious and challenging task. Nevertheless, I believe this is a deserved endeavor. The first attempt, the joint publication with GOI's "Indonesia's Capacities on Technical Cooperation" mainly captured basic data of institutions which could provide SSTC. The second attempt extracted Indonesia's tacit knowledge in the fields of democracy, macroeconomic management and poverty reduction as result of "The Project on Knowledge Management for South-South Cooperation." This book is the third attempt, covering a wider range of knowledge in various development sectors accompanied by a list of institutions which could be prospective for SSTC in the future. The knowledge was extracted from a JICA study titled "Indonesia's Development and JICA's Cooperation" (JICA 2010) as a fifty-year commemoration of Japan's ODA to Indonesia.

Knowledge development can be attained using a spiral approach: gradually improving quality with repeated cycles of knowledge management. I hope this third attempt will provide more opportunities of SSTC for not only JICA but also wider stakeholders of SSTC such as GOI, Development Partners, academia, private sector, etc., which process is expected to enrich engagements of SSTC and institutions involved. On behalf of JICA Indonesia Office, I would like to extend my deepest appreciation to the stakeholders who kindly spared their precious time for this publication.

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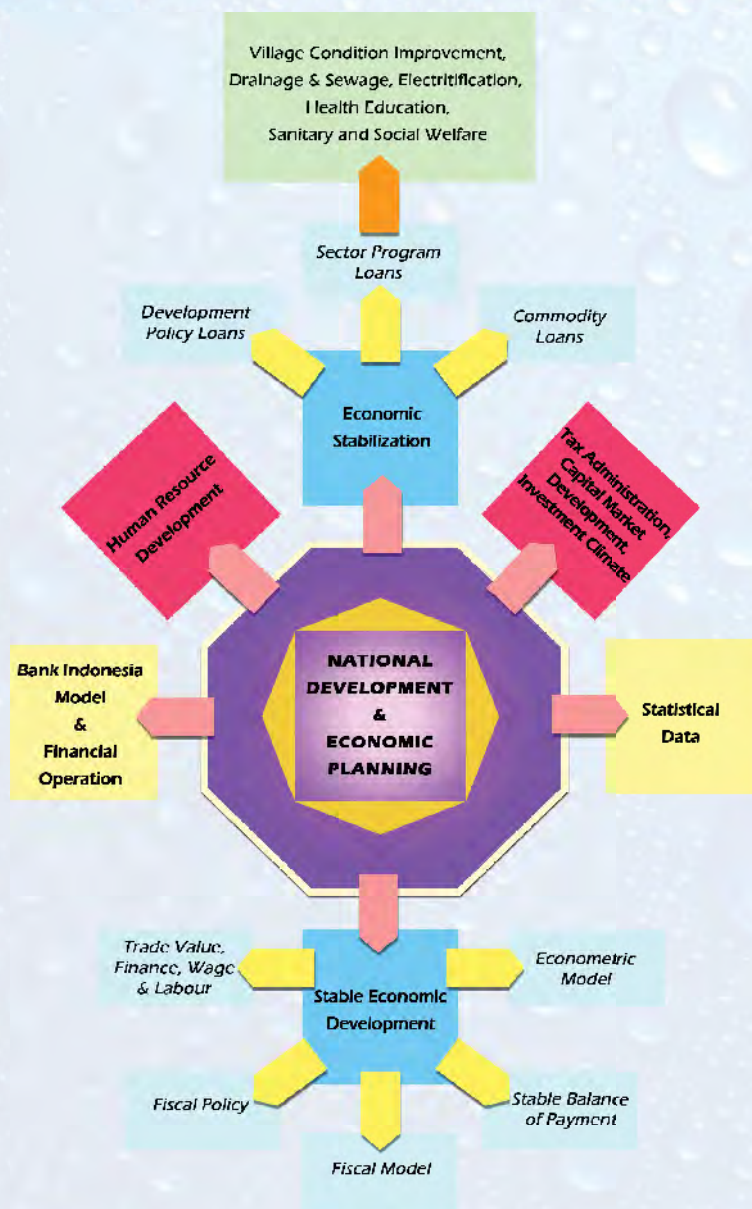
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1. Economic Policy and Macro-economic Management



Towards the end of the 1990s, Indonesia faced a significant impact of the Asian monetary crisis. To overcome economic recession, the Government of Indonesia prepared a proposal for emergency action, and asked for international support for funding. The proposal aimed at securing payment balancing while simultaneously providing a support program for poor people affected by the crisis.

Significant support was received from the Government of Japan that increased an OECF/JBIC loan through a Sector Program Loan (SPL) scheme. The loan was disbursed to sectors directly related to the livelihoods of the majority of the population. The main objective was poverty reduction and reducing disparities among regions. Under the

scheme, eight sectors and 32 projects were selected. These projects included improvement of village infrastructure, drainage, sewerage and electrification in rural areas, and also improvements in education, health, sanitation and social welfare.

Apart from the SPL, JICA conducted several non-loan project types of cooperation dealing with economic stabilization, development of human resources at the National Development Planning Agency (BAPPENAS), and development studies.

Until the end of 1990s the main aim of the Japan-Indonesia cooperation was economic stabilization by maintaining a stable balance of payment position in order to support economic development. The cooperation was also to transform economic and industrial structures which would be less dependent on oil and gas.

Later, the form of cooperation was changed into a Development Policy Loan (DPL) scheme which commenced in 2004. The commodity loans for importing necessities from Japan became less important in the 2000s due to the changes in the Indonesian economy and industry structure, and improvement of the balance of payment position. The new loan scheme was based on support for (fiscal) policy and institutional improvement. The new scheme was categorized as a commodity loan that differed considerably from those for financing the balance of payment.

Cooperation in respect to human resources development at BAPPENAS had been going on from the 1970s to the 1990s prior to the 1998 Asian Monetary Crisis. The main subject of cooperation was the formulation of a National Development Plan. During the 1970s and 1980s, the main purpose of the cooperation was to help develop prototype economic models for long- and short-term economic planning. These models included: the fiscal model (annual macro model for BAPPENAS), the finance sector model (Bank Indonesia model), the balance of payment model, the industrial input-output model, and the econometric model. Priority was also given to improvement of statistical data on national income, trade values, finance, wage and labor. After the mid 1990s, efforts were made to improve the existing models rather than develop new models.

Project cooperation was developed after the Asian monetary crisis. This consisted of policy dialogue, development of policy loans, program loans for mitigating climate change, as well as technical assistance

(TA) in the areas of improvement of tax administration, development of the capital market, financial operations of Bank Indonesia and improvement of the investment climate. The cooperation in respect to economic policy formulation through policy dialogue and cooperation for public finance ran under the same package as institutional reform.

After 2000 along with the development of human resources at BAPPENAS, the need for transfer of technology in macro-economic analysis became less. Instead, BAPPENAS shifted its need of cooperation with Japan from policy development to planning improvement.



Non-Aligned Movement, Centre for South-South and Technical Cooperation (NAM-CSSTC)

NAM-CSSTC was founded in 1995 at the initiative of the Government of Indonesia and Brunei Darussalam during the 11th Summit of the Non-Aligned Countries in Cartagena, Colombia. It aims to improve and accelerate development in developing countries. In carrying out its mission, it pools and collects all resources and abilities available in developing countries for mutual support to accelerating national development in each country.

NAM-CSSTC is managed by the Government of Indonesia under the supervision of the Ministry of Foreign Affairs. Its activities include exchange of experts, sharing of technical information, provision of facilities, workshops and seminars, training, business networking, and entrepreneurship in developing countries. In the implementation of these activities, NAM-CSSTC has worked with various local and international agencies and organizations.

Since 2004, NAM-CSSTC in cooperation with JICA has implemented training programs in microfinance in Africa. In 2004-2006, the programs focused on the operational aspects of microfinance, while in 2007-2011, they targeted the establishment and management of microfinance institutions (MFI). The programs covered ten African countries.

The Islamic financing scheme called sharia (syariah) was identified as having a great potential in many developing countries. It is not limited to African countries but many other countries that actually have expressed an interest in NAM-CSSTC.

For example, NAM-CSSTC received appreciation from the Ministry of Finance of Uganda for implementation of the sharia microfinance scheme for various government agencies and MFIs. The Bank of Uganda was also interested in the Government of Uganda's plan to develop a "dual window system" (conventional finance and sharia) in the Uganda banking system. Ex-trainees created an association of training alumni to better share their experiences.

The objective of the training program on microfinance for African countries had been achieved. Some technical experience in Indonesia was transferred through MFIs to several African countries who participated in the training.

NAM-CSSTC's partnership experience with JICA has enriched the training methodology and development, particularly in the field of microfinance. NAM-CSSTC also applies this experience to other training programs such as training on micro-hydro, in collaboration with the Ministry of Energy and Mineral Resources (ESDM) and AHB (Bandung Hydro Association). After the training and field work/visits to various locations of micro-hydro development that were considered successful, NAM-CSSTC facilitated field assistance to the beneficiaries for replication or direct assistance.

Table of Institutions of Indonesia - Japan Cooperation in Sector of Economic Policy and Macroeconomic Management

Ministry/ Institution Name	Focus	Projects
National Development Planning Agency (BAPPENAS); Ministry of Finance (MOF)	Economic stabilization	Commodity Loans (1968-90)
BAPPENAS	Economic policy	Support to BAPPENAS (1970- 2002)
BAPPENAS; MOF; Ministry of Home Affairs; Ministry of Public Works (MPW)	Sector development	Sector Program Loan (1988- 1999)
MOF; Investment Coordinating Board (BKPM)	Investment	Investment Climate Improvement
BAPPENAS; MOF; Ministry of Home Affairs	Institutional reform	Institutional Reform, Capital Market Dev, Financial Management Improvement and Tax Administration Improvement
BAPPENAS; MOF	Economic policy	Development Policy Loan (start 2004)
Non-Aligned Movement, Centre for South-South and Technical Cooperation (NAM-CSSTC)	Micro-finance	Micro Finance for African Region: Operational Aspects of Microfinance (2004-2006)
NAM-CSSTC	Micro-finance	Micro Finance for African Region: Establishing and Managing Micro Finance Institution (2007-2011)
Agency for Finance Education and Training, MOF	Institutional reform	Training for Land and Building (Property) Taxation in Indonesia

2. Governance



Since 1998, Indonesia has experienced fast political reform. Democratization and decentralization were accelerated after the resignation of President Soeharto.

Before the 2000s, there were a few JICA projects in this sector, such as the installation of a computer system at the Central Statistics Agency (BPS). BPS has been reformed and currently is a trusted national source of statistical data, although the accuracy of many data needs continuous improvement.

In the democratization process, Japan supported the Indonesian General Elections (IGE) of 1999 (1st IGE), then also in 2002 and 2003 (before the 2nd IGE). JICA implemented projects that included practical support for, among others, training programs for regional electoral commissions, installation of electoral information systems, procurement and distribution of materials.

Although the two General Elections were held successfully, one of the challenges was surveillance and elimination of fraudulences. In consequence of these experiences, Indonesia has improved its institutions and management of general elections. This includes the election commission (KPU), the election supervisory body (Bawaslu), and other independent institutions in charge of general election management and monitoring.

JICA also has supported judicial reforms. Several Indonesian juridical experts were invited to participate in seminars in Japan, and efforts to improve the judicial mediation system were undertaken from 2007 to 2009, while training mechanisms

for mediators were established, and the new mechanism was publicized.

A human resources development program for local governance was also provided by JICA in two phases from 2002 until 2007. After decentralization, local governments had to take autonomous actions, and this required capacity improvement of local officials. JICA programs supported local governments to work practically when new frameworks without implementing details were established.



As part of democratization process, in 1999, the Indonesian National Police (POLRI) was separated from the National Army. At that time, the Indonesian government requested Britain, USA, Australia and Japan to support the introduction of "Civilian Police" activities in Indonesia. JICA dispatched an advisor to the Indonesian national police commissioner, and implemented pilot projects in two areas in Indonesia: Bekasi and Bali. Under this cooperation, pilot project sites received police officers from other regions of Indonesia for trainings and inspections to replicate the model in their own areas.

Since 2001, JICA provided cooperative support to create a model for the new Indonesian police force such as the Center for Police and Community Partnership (BKPM) and the Community Police (Polmas). BKPM is a medium that facilitates communication between the police and the community, while the community police is a policing approach model to enhance community participation and support of police activities in maintaining secure neighborhoods.

POLRI has recognized the effectiveness and adaptability of the BKPM system and instructed regional police all over Indonesia to establish at least one BKPM in each region. The Polmas initiative was highly evaluated by POLRI, and POLRI issued a "Polmas Notice" in 2005 where Polmas is included as a police training program.

Japanese police officers also participated in crime site investigations and provided on-the-job training to their Indonesian counterparts as well as laboratory trainings. As a result, the Bekasi identification unit in Bekasi city is recognized as the best identification team

in Indonesia, and the Indonesian National Police has asked the Bekasi team to train officers of other regions in Bekasi.



In Bali, the pilot project was called "Building a Society with a Sense of Safety in Bali." In this project, tourist police officers patrol hotels, restaurants, money changers, and souvenir shops to provide tourists with a feeling of security.

In addition to the pilot projects, from 2002 onwards, Indonesian police officers of junior and middle command levels went to Japan for annual training programs. It is expected that these trainees bring a sense of responsibility for people's security throughout the police organization, especially when they are promoted to command positions.

Community Police (Polmas) - Center for Police & Community Partnership (BKPM)

Since it was separated from the Indonesian Military (TNI), reformation has been of special concern of POLRI. This reform was effected through the restoration and improvement of services provided to the public. One of the efforts is cooperation undertaken by the Police through a JICA program to promote community police (Polmas) in a pilot project at the Police Station of Bekasi City. Since 2001, JICA sponsored cooperation with POLRI for safe communities in selected local areas that involve local communities. In Japan, this is known as "Koban" and "Chuzai-syo."

The community police program in BKPM includes the following activities:

- Improvement of identification: All members of the criminal investigation police have been provided with skills in identification of scene fingerprints including crime site retrieval.

- Improvement of Telematics
- Improvement of basic management
- Improvement of trainings to accelerate the implementation of community police

The expected impact of community police is to enhance community sense of police presence through increasing the number of police visits to the communities. However, the available number of police officers at BKPM and the attitude of police personnel affects the performance of community police programs.

In practice, the implementation of the JICA supported community police program differs in certain aspects from the program as implemented by POLRI. The community police program supported by JICA is implemented through specific approaches to the communities such as the intensity of direct visits to the population at their homes and work places within a small area and with clear focal point.

Table of Institutions of Indonesia - Japan Cooperation in Governance Sector

Ministry/ Institution Name	Focus	Projects
Central Statistics Agency (BPS)	Statistic/ Administration	Statistics-keeping (e.g., introduction of computers into BPS-Statistics Indonesia, etc.) on just a few occasions, which includes improvement of population censuses. It is an important foundation for the nation and has been a basis for democratization since the mid-1990s.
General Election Commission (KPU)	Governance	Assistance to General Election (1999-2004)
Parliament, Ministry of Law and Human Rights	Governance	Legal System and Legislation Seminar (2002-2008)
Ministry of Home Affairs	Governance	Mediation System Reinforcement (2007-2009)
Ministry of Home Affairs	Governance Administration	Administration Improvement for Public Officer (1999-2000)
Ministry of Home Affairs	Governance HRD	Project for Human Resource Development for Local Governance
Indonesia National Police (POLRI)	Public Security	Reform of National Police (2002-2010), include: On the Job Training Program (in Japan) 600 police officers
Ministry of Home Affairs; Ministry of Public Works	Regional dev., Water resources management, Water supply, Education, and Health	Supporting Activities to Decentralization in Each Sector (2000-2011); Institutional Development and Human Resource Development, Sulawesi Capacity Development Project (2007 to 2010); Establishing Participatory Regional Development Mechanisms and Capacity Development of People in 6 Provinces; Project on Capacity Development for RBOs in Practical Water Resources Management and Technology (2008-2011); REDIP: The Study on the Regional Educational Development and Improvement Project (1999 to 2001); Improvement of District Health Management Capacity in South Sulawesi Province Project (2007 to 2010); Human Resource Development for Local Governance (Phase-1, 2002 to 2005; Phase-2, 2005 to 2007)

3. Regional Development



Issues of regional development in Indonesia have changed over time. There have been three major issues: 1) from the 1960s to mid 1980s, a major problem was the concentration of population in Java and Bali; 2) from the mid 1980s to 1990s regional disparity became a major problem; and 3) in the 2000s, a major issue was how to make decentralization operational. Japan's cooperation in the regional development sector has been conducted in two ways. The first one was to support the preparation of integrated regional development master plans in the 1970s and the 1980s while the second one, after the 1990s, was a support for strengthening capacity for regional development.

Japan's cooperation supported the development of integrated regional development master plans for East Java in 1975 and Central Java in 1976. The master plan for East Java as the first Japanese support to regional development master plan in Indonesia aimed at development from a regional perspective and the distribution of development benefits. The Master Plan proposed two strategies: top-down strategy in Surabaya and vicinity through industrial development, and bottom-up strategy in rural areas in water resources and rural development. The Master Plan proposed 8 priority programs: 1) Industrial development; 2) Water resources development (Solo and Brantas rivers); 3) Agricultural development in Madura; 4) Southern coastal

area development; 5) Rural development; 6) Community facilities development; 7) Vocational training program; and 8) Strengthening BAPPEDA (Regional Development Planning Agency). A series of projects have been implemented under these programs. The Wonogiri Irrigation and Upper Solo River Project is one of these projects. The Southern Coast Development Plan, East Java conducted in 1978 was also selected to be implemented.

From the mid 1980s onwards the major issue shifted from Java Island to development of the outer islands. Japan's cooperation responded through support of the preparation of integrated regional development master plans for the northern part of Sumatra in 1988 and the southern part in 1991. The Integrated Regional Development Plan for the northern part of Sumatra prepared a long-term development plan for the period 1989 to 2008 and proposed priority projects. The master plan was distributed to state ministries and provincial governments. It was utilized as a prototype for the preparation of a national spatial plan.

Japan's cooperation was also addressing the policy for 'East Indonesia Development' that was formulated and published in the 1990s, and covered 13 provinces in Kalimantan, Sulawesi, Nusa Tenggara, Maluku and Papua islands. Support was given to the Comprehensive Development Plan of the Western Part of Kalimantan in 1997. Program support for regional development was also provided through a field level approach targeting the areas left behind. One of these projects was the Participatory Rural Community Development Project in Sulawesi in 1997-2002. At the policy level, such support included Policy Support



for East Indonesia Development in 1995-1998.

Since 2000 along with the progress of decentralization, JICA's cooperation in regional development was expanded to include support for the Capacity Development and Rural Infrastructure Development Program which was coordinated under the National Program for Community Empowerment (PNPM) as the flagship umbrella program.



strengthening the function of local governments, the project has provided support to promote collaboration between communities and local governments, and encouraged regional development that would meet the needs of the population. Under the Rural Infrastructure Development Project, local communities gained benefits of infrastructure and capacity improvement that enabled them to manage their own

JICA's capacity development was conducted with the purpose of strengthening the capacity of local governments in conducting the planning, implementation, monitoring and improving of development projects to meet the needs of communities through collaboration among relevant stakeholders. Through

development.

JICA's project also assisted in the preparation of the Medium Term Development Plan (RPJM) for Sulawesi, and strengthened it with a joint regional office in Sulawesi.

Participatory Local Social Development (PLSD) Indonesia Institute

PLSD Indonesia Institute is an independent organization established by alumni of the PLSD Training program in Nagoya, Japan, coming from different provinces in Indonesia.

The trainings of PLSD increased the capacity of government officials to respond to a bottom-up planning approach in three districts of North Sulawesi. Later, it became a multi-district collaboration for regional development based on policy issues. A collaboration mechanism was established in the districts of Takalar (South Sulawesi), Wakatobi (Southeast Sulawesi), and Pohuwato (Gorontalo).

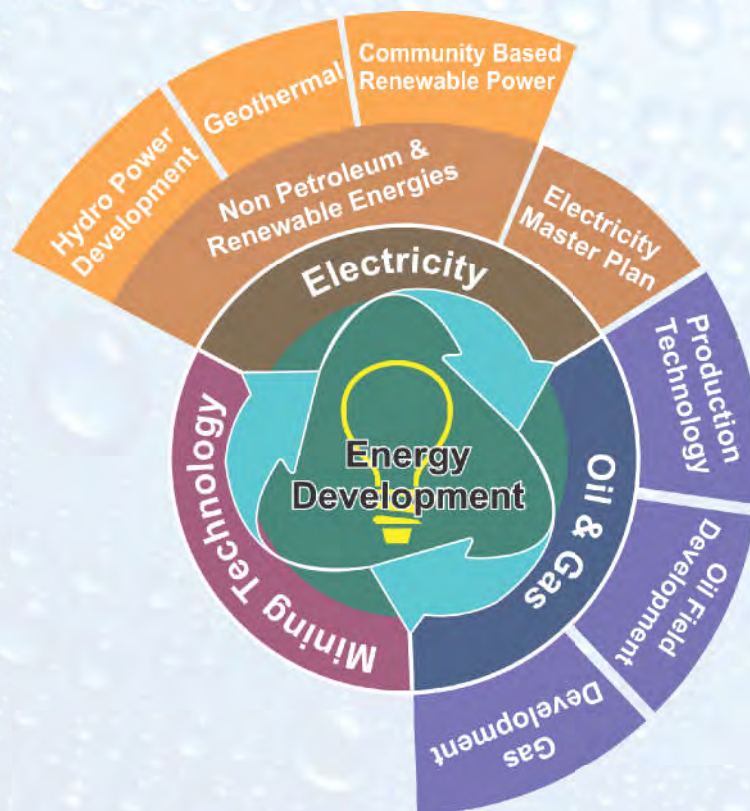
PLSD carries out the following activities:

- Provide consultation and training to local government officers, NGOs and other stakeholders in an effort to build a collaborative mechanism in the region;
- Carry out studies and research related to the development of the PLSD concept in planning, implementation, and monitoring and evaluation of community development programs;
- Develop networks of national and international organizations that have a similar vision in terms of community-based regional development planning to improve the quality of life of the population.
- Collaborated with the Center for Economic and Social Studies (CESS) to implement the Third Country Training Program on poverty reduction with participants from Palestine.

Table of Institutions of Indonesia - Japan Cooperation in Regional Development Sector

Ministry/ Institution Name	Focus	Projects
National Development Planning Agency (BAPPENAS); Ministry of Home Affairs	Regional dev.	Integrated regional development master plan (Java); covers: Java Regional Study (1975), East Java; Java Regional Study (1976), Central Java
National Development Planning Agency (BAPPENAS); Ministry of Home Affairs	Regional dev.	Integrated regional development master plan (Sumatera); covers: Northern part of Sumatera (1988); Southern part of Sumatera (1991)
BAPPENAS; Ministry of Home Affairs	Regional dev.	East Indonesia development; covers: Comprehensive Development Plan for the Western Part of Kalimantan (1997); Integrated Regional Development Project (1995-2001); Policy Support for East Indonesia development (1995-98)
BAPPENAS; Ministry of Public Works	Regional infrastructure dev.	Rural Areas Infrastructure Development Project; Participatory Rural Community Development Project in Sulawesi (1997-2002) to Support Poverty Alleviation Programmes
BAPPENAS; Ministry of Public Works	Regional dev.	Regional Development; covers: Regional Development Policies for Local Government (2001-2005); Project for Human Resources Development for Local Governance (2002-2007); Sulawesi Capacity Development Project (2007-2012)
Center for Economic and Social Studies (CESS)	Community development	The Participatory Community Development Training for Afghanistan (2011-2013); Capacity Building for Poverty Reduction (2006-2010)
PLSD Indonesia Institute	Regional dev.	Local Development Planning in Indonesia Trainings
Community Initiative for Transformation (COMMIT)	Community development, Community facilitator	Institutional Visit by Bhutanese Officials (2013)

4. Electricity and Energy



When Indonesia turned its attention to industrialization in the 1980s, it began actively promoting power development. Indonesia requested Japan's support to which JICA responded by providing comprehensive support such as the formulation of power development plans, human resources development and construction of power plants. Then, in recent years, JICA contributed to promoting the use of non-petroleum and renewable energies in line with Indonesia's policies. JICA is an active participant in the development of global power sources such as geothermal.

The cooperation in respect to this sector amounts to 196 projects. Of these, 46 projects are in oil and gas and 150 projects are in electricity. Starting in the 1960s, Japan greatly expanded its economic cooperation in the electricity sector by replacing the hydropower plant. The total power generation capacity of these power plants was as large as 160 MW through the Brantas River Hydros (The Kali Konto 4.5 MW and Karangates 105 MW) and the Tanjung Priok Thermal Power Plant (50 MW). Because the existing total capacity in Indonesia at that time was only 670 MW, these project developments were massively done by increasing the capacity by a quarter at one time.

From the 1970s to the early 1980s, in respect to the oil and gas sector, Japan took the so-called national project scheme that looked for oil field ownership abroad led

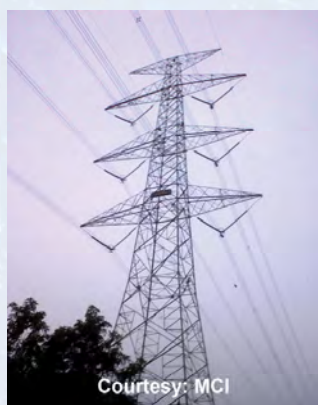
by the Japan Oil Corporation. In Indonesia, several oil project companies such as the Japan-Indonesia Oil Cooperation Co., Ltd. were established and accordingly the oil production in the country steadily increased.

In and around the Arun Field, Aceh, North Sumatra and the Badak Field, Bontang, East Kalimantan, LNG (Liquefied Natural Gas) plants were developed through Japanese ODA loans. These plants were the only LNG plants in Indonesia for more than three decades. Meanwhile, Japan's lender group helped PT. Pertamina ease its debt servicing through the Trustee's Borrowing Scheme.

As a consequence of Indonesia's initiative and Japan's cooperation in the development of the oil and gas sector Indonesia earned considerable profits which contributed to the country's growth. For decades, Japan was successful in acquiring a great quantity of oil and gas. The exported oil and gas to Japan became the abutment of Japan's rapid economic growth. In fact, a third of the oil produced in Indonesia was exported to Japan.

In the 2000s, Indonesia faced expanding domestic demand, and in consequence thereof became an oil importer in 2005. The Indonesian electricity sector faced critical shortage of electricity. Since the Government of Indonesia introduced the Independent Power Producers (IPP) power development system and promulgated the new electricity law, US\$ 16.5 billion of investment were involved for an assumed 11,260 MW of power generation. Among these IPPs were some giant Japanese projects such as the Paiton 1 Coal-fired Plant and the Tanjung Jati B Thermal Plant.

The IPP began functioning, but was limited to the large cities mostly in Java. Therefore, Japanese economic cooperation often needed to address hydropower or other power projects in the less developed regions where high risks were expected. Examples are the Sipansihaporas hydro plant (designed in 1992, and constructed in 1995), the Diesel Power Plants in Rural Areas in 1984, and the



Courtesy: MCI



MiniHydro Control
Courtesy: MCI

Rural Electrification Projects in 1988, 1993, and 1996. Also, Japan offered an ODA loan for the 500 kV power transmission trunk lines connecting east and west Java. The trunk line project enabled effective power transmission from the eastern part of Java, where electricity was relatively sufficient, to the capital city of Jakarta as the largest electricity consuming center. Cooperation then continued with many sector projects, including the Lahendong Geothermal Power Plant, North Sulawesi (20 MW in North Sulawesi) and the Ulubelu Geothermal Plant (110 MW in Lampung).

Currently, Indonesia has sufficient experiences in the development of electricity and gas. Indonesian skilled personnel in this sector are not only working in plant and transmission construction but also in master plan and sector development studies.



Through intensive cooperation with the ministry including institutions such as PLN (electricity), 'Cepu Oil and Gas Training Center.' etc. as well as the Ombilin Mine Training College (PT. Bukit Asam) (coal), and private organization such as IBEKA (Micro hydro), JICA cooperation does not just cover the construction of plants. JICA also provides improvement of management, strategic planning, institutional capacity, etc. in electricity, oil and gas, education and training in coal mining, and green technology of non-petroleum energies and renewable energies, such as micro hydro development, etc.

IBEKA (Institute for Business and People's Economy)

IBEKA is an Indonesian NGO with a strong engineering background dealing with various development issues.

Various renewable energy programs are used as entry points to organize and prepare local communities for empowerment programs such as farming, household enterprises/home industries, small manufacturer and local workshops, etc.

IBEKA is committed to make a significant contribution to improvement of the social and economic conditions of rural and remote communities by reconnecting local resources using appropriate technology. Ownership of local resources by local communities will be the base of a more equitable "future" economic model.

IBEKA carries out activities as follows:

- Development of relationships/ schemes in renewable energy programs.

- Development, promotion and support of the wider adoption of renewable energy utilization, especially of small scale hydro-power for local equity building.
- Promotion, development, improvement and support of rural social entrepreneurs to benefit local communities and local economic diversity.

IBEKA is a leading player in the field of micro hydro power including social development, training program, biogas, and clean water supply. IBEKA has implemented at least 56 projects in micro hydro, 5 projects in hydro power and 1 project in wind turbine power electricity, and at least 3 projects in clean water supply, community based water saving, and cows fattening and biogas plant for rural economic development.

Through its activities, IBEKA has obtained recognition as Winner of the Magsaysay Award in 2011 as well as the ASHDEN Award in 2012.

The Executive Director, Ms. Tri Mumpuni was awarded by Islamic Development Bank as the 8th Edition (1434H - 2013G) Promoting Women, Environment and Sustainable Development.

Table of Institutions of Indonesia - Japan Cooperation in Electricity and Energy Sector

Ministry/ Institution Name	Focus	Projects
Ministry of Energy & Mineral Resource (MEMR)	Electricity development	Tanjung Priok Thermal Plant
(MEMR)	Gas development	Arun LNG and Badak LNG
(MEMR)	Electricity development	East Java - Kalimantan Hydro Power
(MEMR)	Electricity development	East Java Transmission Line
(MEMR)	Gas development	Tanjung Priok Thermal Extension; Gresik Thermal Gasification
(MEMR)	Electricity development	Java-Bali Trunk Transmission Line Construction
(MEMR)	Gas development	Muara Karang Gas Power Plant; Muara Tawar Gas Fired Extension; Tanjung Priok Gas Extension
(MEMR)	Electricity development	Lahendong Geothermal Power Plant
(MEMR)	Electricity development	Bakaru Hydroelectric Power Plant Construction
(MEMR)	Gas development	South Sumatra - West Java Gas Pipeline
(MEMR)	Electricity development	Study on the Optimal Electric Power Development and Operation
(MEMR)	Electricity development	Master Plan Study for Geothermal Power Development
Institute for Business and People's Economy (IBEKA)	Micro-hydro development	The Strengthening The Capacity of Tumba College of Technology in the Republic of Rwanda (Micro Hydro); Micro-hydro Development
Cepu Oil and Gas Training Center	Oil and Gas production technology	Oil and Gas Production Technology (1986); Image Processing Technology for Oil and Gas Study (1988-1994)
PT. Bukit Asam (Ombilin Mine Training College)	Minning development	Coal Mining Technology Enhancement Project at the Ombilin Mine Training College (2001-2006)
PT. Bukit Asam	Minning development	Coal Mining Technology Enhancement Project (follow up) (2007-2009)

5. Transport and Traffic

In line with economic and industrial development, Indonesia needs transport infrastructures which are sufficient to sustain a nation-wide development. JICA has provided assistances in road, rail, sea and air transport.

In the road sector, cooperation with Indonesia has been conducted since the 1960s. JICA supported road repair and maintenance, and bridge improvement on main regional roads on the large islands of the country namely Sumatra, Kalimantan, and Sulawesi rather than on the most densely populated island of Java. About 60% of the cooperation took place in Sumatra, with a central focus of southern part of total extension of main arterial roads of 2,500 kilometers.

In the 1970s, the cooperation was expanded to expressway development in the Jakarta metropolitan area, which was continued with the development of general roads and bridges as well as formulation of an Urban Area Master Plan in the 1980s. During the 1970s and 1980s, the main focus of Japan's cooperation in the field of road development was the Jakarta metropolitan area, e.g. the Jakarta inner-city expressway development from 1978 to 1987. The famous flyovers in Jakarta city such as Slipi, Tomang, Cawang, Semanggi, Taman Ria, etc. and the addition of about 20% of expressways in the Jakarta metropolitan area were constructed with Japanese support in this period.

During the 1990s before the Asian monetary crisis, the cooperation extended to development and rehabilitation of urban/rural roads, and the development of eastern Indonesia. At the same time, JICA began to support the introduction of public-private partnership (PPP) schemes in road construction, and provided cooperation in rehabilitation and asset management. After the crisis, apart from cooperation in improvement, maintenance and repair of arterial roads not only in urban but also in rural areas throughout the country, cooperation was also in implementation of PPP schemes for infrastructure and expressway development.

Road development in Indonesia improved from the 1960s through the 2000s: the road length expanded from 83.85 thousand km to 437.76 thousand km, the damage rate of national and provincial roads dropped from 88% to almost 0%.

The thousands of skilled workers trained in cooperation with JICA have sufficient capability to support other developing countries. In cooperation with the Ministry of Public Works, JICA promoted a triangular cooperation with Indonesia and Timor-Leste. Indonesian experts supported the Ministry of Public Works of Timor Leste in operations and maintenance of roads and bridges.

In the railway sector, cooperation started in the 1960s through rehabilitation of the Java container railway. In the 1970s, cooperation focused on railway development in the Jakarta metropolitan area. This continued until the 1980s, with a focus on efficiency. In the 1990s before the Asian monetary crisis, JICA supported construction of double tracks of the Java container railway and railway development in the Jakarta metropolitan area, including the railway modernization in Jabodetabek (Greater Jakarta area) as a package program consisting of elevation, electrification, double tracking, station upgrading, etc. This was based on the Study on Railway Transport Master Plan in the Jakarta Metropolitan Area. The cooperation continued for twenty years. It continued after the crisis, and is connected to the Jakarta



Urban High-Speed Railway Plan (Mass Rapid Transit/ MRT).

Construction of double tracks of the Java container railway has affected on the time-distance between Jakarta and Surabaya that was reduced by 4 hours from 16 hours to 12 hours with successive projects of railway track repair. Travel time was further reduced to 9 hours due to the emergence of express trains. Not only the time-distance (faster), also the safety aspect was improved; many railway network sections still utilized materials that are more than 40 years old. The similar situation can be seen in regard to railway bridges which were constructed by the Dutch colonial government.

The railway modernization project in the Jabodetabek area that provided double tracking of electric trains, also significantly improved the time-distance factor and train traffic intensity. It enables the Jabodetabek electric railway to transport 400,000 passengers per day at present; the target is 1 million passengers per day.

JICA also supported special Railway Training Centers in the cities of Bekasi and Bandung. The two centers are equipped with railway simulations and traffic facilities in railway development, technical management, safety system, maintenance, etc. Under the cooperation, railway transport has expanded to serve more than 203 million passengers in 2008 compared to about 70 million in 1968.

In regard to sea transport, since the 1960s, JICA has supported the production of dredges/ ferry boats, expansion of shipbuilding/ dockyard plants, and rehabilitation of sea transport infrastructures. In the 1970s, cooperation was in shipbuilding and navigation system as well as the development of international and local seaports including ferry transport. In the 1980s, JICA supported port master plans and implemented many physical



projects such as the Palembang Oil Port Renovation, Barito River Basin Dredging, Lampung Roads and the Bakauheni-Merak Ferry Terminal. There were also many ODA projects including not only general port development as basic infrastructure for economic growth such as the Semarang international port development, but also specific port development projects such as the Aceh port (fertilizer shipment), Dumai Port (oil products shipment), Asahan Port (aluminium shipment), etc.

In 1990s before the Asian monetary crisis, JICA supported strengthening sea transport in eastern Indonesia. After the crisis it continued strengthening the security system of ports and sea transport as well as development of domestic shipping, and the formulation of master plans. The comprehensive master plan for modernization of sea transport in eastern Indonesia (1993) was one of these, and the feasibility study proposed in the master plan included development plans for 17 trans-shipment ports and 85 small-medium ports. Specifically, Ujung Pandang (Makassar) port, Kupang port and Bitung port development as primary projects were lined up in the master plan aiming at the development of the rural economy in eastern Indonesia. In addition, the developments of ferry terminals consisting of 8 maritime routes (including 6 routes in eastern Indonesia) were developed



through ODA loan based on the examination of the National Ferry Network Development Master Plan conducted in 1992. JICA's support continued in the 2000s with a focus on domestic shipping enhancement (25 domestic ports) and development of Public Private Partnership (PPP) schemes. Furthermore, many development studies through ODA grants and technical assistance focused on navigation safety, port security, port maintenance techniques, etc.

In the air transport sector JICA's cooperation began in the 1970s with the launching of airport infrastructure development assistance: the Bali International Airport Development Project, and the Padang Airport Construction Project in Sumatra. In the 1980s, JICA funded Airport Infrastructure Development of Balikpapan, and in the 1990s continued its support with Airport Infrastructure Development projects in Surabaya, Padang and Palembang. After the Asian monetary crisis, JICA focused on cooperation in respect to the aviation security system including long-term policy of the aviation sector and port development plans in metropolitan areas.

The Master Plan Study for Strategic Policy of the Air Transport Sector has successfully contributed to the significant development of airports in Indonesia.

Institute of Road Engineering (IRE)-MPW

IRE is one of the research and development centers under the Agency of Research and Development of the Ministry of Public Works. IRE has 6 divisions and experimental stations: Program and Cooperation, Standards and Dissemination, Professional and Infrastructure Resources, Experimental Station for Bridges and Furniture (complementary buildings), Experimental Station for Traffic Engineering and Road Environment, Experimental Station for Road Geo-technology.

IRE implements activities to provide:

- Control and standardization of quality of constructed roads and bridges in planning and implementation
- Experimental stations and laboratories
- Partnerships on R&D, and trainings.

As the R&D center of roads, IRE has cooperated and conducted

Bilateral Workshops with National Institute for Land & Infrastructure Management (NILIM) and Public Work Research Institute (PWRI) Japan from 2009-2013 in 6 research areas: pavement, bridges, tunnels and underground structures, environmentally friendly roads, black spot counter measures and image processing technology. IRE also cooperated with other development partners, such as Korea on Warm Mix Asphalt and with Norway on Rock Tunnels.

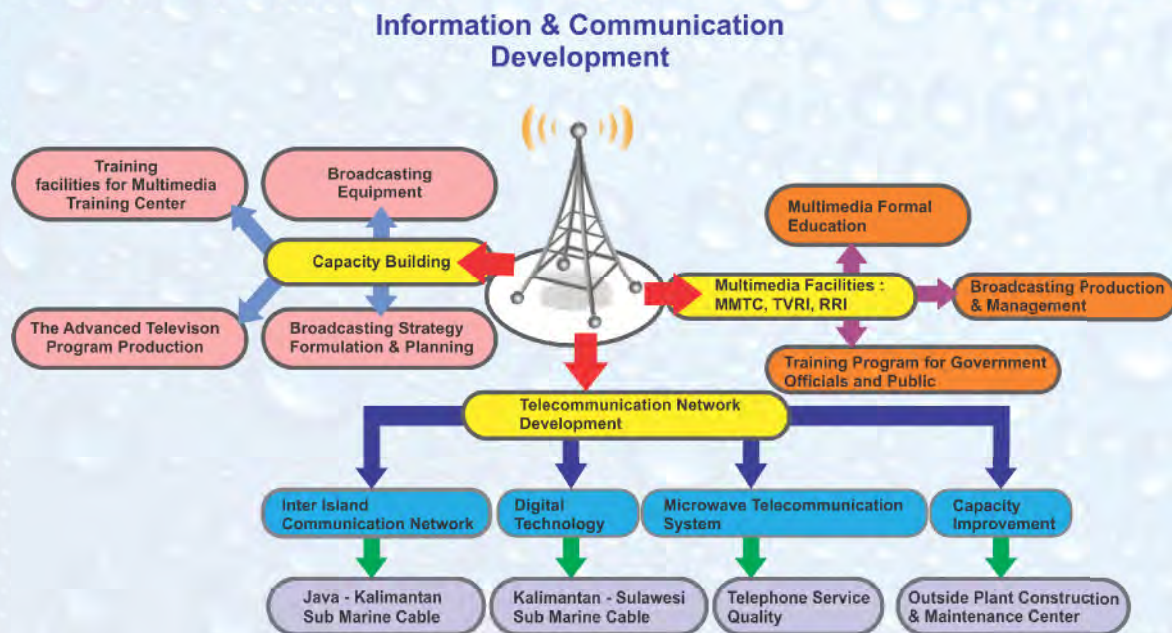
In cooperation with JICA, IRE implemented capacity building in 9 Provinces from 2005-2006, joint research for black spot counter measures, and triangular cooperation with Timor-Leste in 2011-2012.

IRE achieved various international standards: ISO 9001 in 2008 on management systems; ISO 14001 in 2004 on K3; BS OHSAS 1800 in 2001 on K3L; and SNI ISO/IEC 17025 in 2008 on Laboratory Testing for 4 research centers: material and pavement, road geo-technology, bridge and road furniture

Table of Institutions of Indonesia - Japan Cooperation in Transportation Sector

Ministry/ Institution	Focus	Projects
Ministry of Public Works (MPW)	Road sector	Rehabilitation and Extension road in Sumatera Island (Bakauheni – Banda Aceh, 2,500 km length); Jakarta Inner-City Expressway Development project (1978-1987): including Slipi, Tomang, and Cawang The flyover projects (1984) and Semangi, and Taman Ria (1987), and so on; Many Projects of Rehabilitation of major arterial roads; Improvement of Roads and Bridges and construction; urban and rural areas in Java, Sumatra, Kalimantan, and Sulawesi Islands; Development of Toll Roads in Jakarta Metropolitan Areas; Projects of ass. on Integrated Transport Planning & Master Plans; PPP scheme for Road Dev.
Ministry of Communication -PT. KAI	Railway sector	Many Projects of JABODETABEK Area Railway Improvement; Train Improvement; Projects of Java Trunk Line Double Tracking; Jakarta Mass Rapid Transit (MRT)
Ministry of Communication	Air transport sector	Bali and Balikpapan airport development (1996); Safety System development; New Padang, New Palembang and Surabaya Airport development (1996); Master Plan Study for Strategic Policy of the Air Transport sector (2004)
Ministry of Communication	Sea transport sector	Palembang Oil Port Renovation Project (1973); Barito River Basin Dredging Project (1974); Lampung Roads and Bakauheni Merak Ferry Terminal Project (1972-1974); Reinforcement of Sea Transport in Eastern Region; Port Development in Metropolitan Regions; Enhancement of Sea Transport Security System; Development of International Port, Regional Port and Ferry Port Terminal: Bakauheni-Merak. Dumai, Kupang, Bitung; Comprehensive master plan on modernization of sea transport in eastern Indonesia (1993); National Ferry network Development Master Plan (1992)
Education and Training Center, MPW	Road sector	Infrastructure in Road Sectors, South-South and Triangular Cooperation between the Government of Indonesia, the Government of the Democratic Republic of Timor-Leste, and JICA

6. Telecommunication



The telecommunication sector is represented by telephone services and broadcasting. In the course of the development of telecommunications in Indonesia, Japan has funded about 89 projects on this sector until 2010: 63 in telecommunications and 26 in broadcasting.

In regard to telecommunications, JICA began cooperation in the 1960s in inter-island telecommunication networks, and continued in the 1970s with cooperation in microwave and regional telephone networks. In the 1980s, JICA funded the construction of a submarine cable between Java and Kalimantan and improvement of the telephone network in the capital city of Jakarta. There were also other cooperation projects such as the Outside Plant Construction Center and the Outside Plant Maintenance Center in the 1990s.

The telephone network of Indonesia covered about 0.47% in 1988, and as such Indonesia lagged far behind other Southeast Asian countries. At that time, there were no telephones in rural areas, only in the larger cities. More than 40% of telephone customers resided in Jakarta and its surroundings. To increase the number of customers, Japan decided to support PT. Telkom through its ODA loans for the Java-Kalimantan Submarine Cable Project in 1985 covering the complete project realization of feasibility, engineering and construction until 1992. The submarine cable project is the first in the realization of Indonesian long distance sub-sea cable projects connecting the eastern part of Java with the southern part of Kalimantan with a cable length of 410 km and 280 Mbps of data transfer speed.

In the on-shore site, a microwave telecommunication system was installed. Telecommunications did not only advance in terms of quantity, but also in terms of quality through the digital data transfer technology. The project has become one of the

telecommunication backbones of the country.

The project continued with the Kalimantan-Sulawesi cable as a follow-up of the Master Plan Study on the Telecommunications Network Development in the Eastern Region. The project development was later transferred to the World Bank Group. Until 1998, the 2,900 km long additional submarine cables were completed as the 2nd Surabaya-Banjarmasin (SB2), the Surabaya-Ujung Pandang-Banjarmasin (SUB), and the Pangkal Pinang-Pontianak (PP) cable projects.

In the 1990s, JICA supported the Extension and Improvement of Telecommunications Networks in the Greater Jakarta Areas. The call completion rate was also dramatically improved because of the project: from 32% to 80% for city calls and from 28% to 71% for long distance calls.

During the project, transfer of technology was emphasized. Many Indonesian engineers or government officials participated in training courses in Indonesia or Japan. The joint work increased professional capability of the Indonesian engineers.

Apart from the telephone line extension project,

Japan provided similar support from 1992 to 2001. This resulted in increased telephone subscription rates from just 0.47% in 1988 to 10.7% in 2001.

In the broadcasting field, JICA began supporting the installation of a number of television and radio stations in the 1970s with a 5-year Plan for the Integrated Development of Radio and Television Broadcasting. In the early 1980s, JICA provided funding for the formulation of master plans in the broadcasting field. During



this time, JICA also began targeting the training of broadcast technicians with the construction of a Training Center of Radio and Television (MMTC) and strengthening broadcasting technology.

After the Asian monetary crisis of 1998, Japan altered the course of its cooperation with Indonesia toward policies, institutions, and advanced technology. Example projects are the Project for Improvement of Broadcasting Equipment for TVRI Jakarta News Division in 2001, the Project for Improvement of Training Facilities for the Multimedia Training Center in 2002, the

Capacity Development project of the Ministry of Communications and Information Technology Concerning Broadcasting Strategy Formulation and Planning in 2005, and the Advanced Television Program Production in 2007; there were others.

The Multimedia Training Center (MMTC) Project stands out prominently among the other Japanese projects (see below). JICA also supported other programs including safety, technology (such as optic cable technology), operations and maintenance as well as development, etc.



Multi Media Training Center (MMTC)

MMTC is the education and training institution under the Human Resources Research and Development Agency, Ministry of Communications and Information established in 1985. In its early years since 1985, it provided Diploma-IV level programs (equivalent to bachelor degree) for TVRI and RRI staffs. In 2004, it was promoted and became the College of Multimedia "MMTC" Yogyakarta (STMM MMTC).

MMTC was established through a JICA technical cooperation program in 1982, which consisted of construction of buildings, multimedia equipment, and human resource development. JICA continued with strengthening the broadcasting technology of MMTC in 1990 with, for example, joint lecture room, language laboratory, and Studio II of Radio and Television. In the 2000s JICA supported facilities consisting of digital Radio-TV equipment completed with OB Van Radio and Television. With the facility and equipment, MMTC was called as the Real Broadcasting Campus.

STMM MMTC organizes two types of education i.e.: formal education at the bachelor level and informal courses both for government officials and the public in the fields of:

- Audio-visual production
- Multi-media learning production
- Camera and editing techniques
- Graphic 3D animation
- Multi-media for extension production
- TX R-TV maintenance, etc.

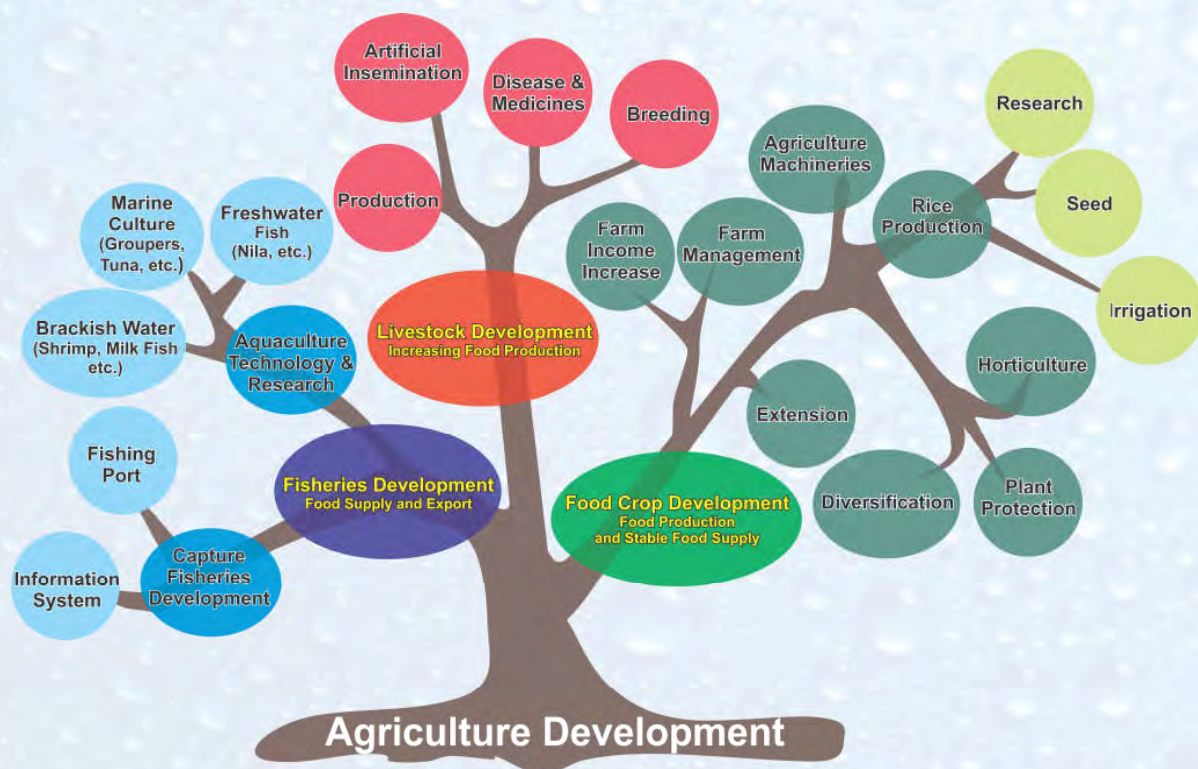
STMM MMTC also shared its knowledge with other countries. Promoted by JICA, it has organized trainings in documentary TV program production since 1997 for the broadcasters of the Asia and Africa regions: Thailand, Malaysia, Myanmar, Laos, Cambodia, Timor-Leste, Zambia and Bhutan.

STMM MMTC cooperated with other development partners, among others are Asia-Pacific Institute Broadcasting Development (AIBD), Canal France International (CFI), and the Ministry of Foreign Affairs in Indonesia.

Table of Institutions of Indonesia - Japan Cooperation in Telecommunication Sector

Ministry/ Institution	Focus	Projects
Ministry of Communication & Information (MTI) - PT. Telkom	Telecommunication	Inter-island telecommunication networks (1960s); Microwave Networks and Regional telephone networks (1970s)
MTI - Multi Media Training Center (MMTC)	TV programs / broadcasting	The Multimedia Training Center (MMTC) Project Development (1982); Advance Television Program Production (1990); Project for Improvement of Training Facilities for Multimedia Training Center (Grant Aid in 2002)
MTI - PT. Telkom	Telecommunication	Junction Network in Greater Jakarta; Telephone Network in Jakarta 1st Phase (1981), Telephone Network in Jakarta 2nd Phase (1985)
MTI	Telecommunication	The telecommunications network for the eastern regions (1982), The Long Term Development Programs of the International Telecommunications (1983)
MTI	TV & Radio programs / broadcasting	The Five-Year Plan for the Integrated Development of Radio and Television Broadcasting (1984)
PT. Telkom	Telecommunication	Surabaya-Banjarmasin Submarine Cable (1980s); feasibility study (1986), engineering and construction (1987 to 1992)
MTI - PT. Telkom	Telecommunication	Telephone Outside Plant Construction and Maintenance Center (1990s); The Extension and Improvement of Telecommunications Networks in Expanded Jakarta Areas (1993-1994)
MTI - TVRI	TV programs / broadcasting	Project for Improvement of Broadcasting Equipment for TVRI Jakarta News Division (Grant Aid in 2001)
MTI - PT. Telkom	Telecommunication	Surabaya Telephone Line Extension; master plan (1992) and 3 phases development (until 2001)
MTI	TV programs / broadcasting	Capacity Development of the Ministry of Communication and Information Technology Concerning Broadcasting Strategy Formulation and Planning (Technical Cooperation in 2005); The Advanced Television Program Production (Technical Cooperation in 2007)
MMTC	TV programs / broadcasting	The International Training Program on Documentary TV Program Production for Asian and African Countries; TV Programme Production and Management; TV Programme/ Broadcasting Production and Management
PT. Telkom	Telecommunication	Telecommunications Outside Plant Construction Supervisory through International Training Committee, Training Division (DIVLAT)

7. Agriculture and Fisheries



Agriculture sector plays an important role in the Indonesian socio-economic development. It supplies food for the population; it is one of the major industries; and it is a main source of income for many people. Indonesia achieved self-sufficiency of rice in the mid 1980s, and became a main exporter of fishery products in 1990s. Japan supported and contributed to these achievements through many cooperation projects.

In the field of agriculture, JICA began cooperation in the 1960s. Before the Asian monetary crisis (1998), the cooperation basically followed Indonesia's policy of Five-Year National Development Plans. From the 1960s to the 1970s, support focused on the increase of food crop production (mainly rice), and irrigation development in Java (especially in the eastern part), Sumatra, Kalimantan and Sulawesi. In the field of seed multiplication and distribution, a Development Study prepared the production and distribution networking plan, which was followed by a grant and loan for providing facilities and equipment. Seed production rapidly increased in the early 1970s and 1980s.

In the 1980s, the focus of cooperation was package support for rice production. The program covered various fields: 1) seed multiplication and distribution, 2) plant protection, 3) demonstration and dissemination of agricultural techniques, 4) irrigation development, and 5) reduction of post-harvest losses. The target areas of the program were eight provinces. Then, Indonesia

achieved self-sufficiency of rice in 1984. Since the success, from of the mid 1980s onwards, JICA support has continued with package cooperation for staple food crop production. In the field of plant protection, technical cooperation for plant protection supported the establishment of a disease and pest forecasting and guidance network.

JICA also strengthened extension programs through Agency for Agricultural Extension and Human Resources Development (AAEHRD), Ministry of Agriculture, which provided cooperation in technology and agriculture machineries to improve production volume and quality. In this field, JICA participated in establishing the Center for Development of Agriculture Engineering Technology in Serpong in 1986, which was successful in introducing many agriculture machineries.

Then, in the 1990s, JICA's support was focused on increase of farmer incomes and diversification through an umbrella program, while irrigation development was centered in the western part of

Java. It was in line with the Five-Year National Development Plan (1995-1999) that stressed a balanced development of rural and urban areas for stable economic growth. The increase of farmer incomes was prioritized. However, in the late 1990s, the Asian monetary crisis caused a shortage of agricultural inputs while El Niño, heavy rain and climate problems caused a sharp decrease in food production including rice. Indonesia imported substantial amount of rice in 1998 and changed the government policy into



Aquaculture Development
in Freshwater Culture Center-Jambi
Courtesy: MCI

Irrigation Development
for Paddy Field
Courtesy: MCI

prioritizing food production again.

In fisheries, support was generally provided in two fields: fishing ports and aquaculture. Fishing port projects were implemented from the 1970s to the 2000s, and aquaculture from the late 1970s onwards. Aquaculture cooperation in Serang was the first, followed by cooperation with aquaculture centers in Lampung, Bali



and Jambi. Many Indonesian fisheries experts received scholarships for their Master or PhD degrees through JICA programs.

In livestock, JICA provided support to livestock development. The support not only covered livestock (such as artificial insemination) and productivity improvement of livestock, but also livestock diseases and medicine development.

Agency for Agricultural Extension and Human Resources Development (AAEHRD)

AAEHRD (BPPSDMP) is one of the high level agencies under the Ministry of Agriculture that coordinates and implements human resource development programs in agriculture sector. It consists of four centers: education, extension, training, and secretariat. The Education Center includes vocational education schools in agriculture for students at the secondary school level. Extension Center provide education for government officials who are in charge of extension activities. The Training Center consists of agricultural training centers for human resource development for all relevant parties including farmers.

The Training Center covers eight large agriculture training centers and two smaller agriculture training centers specializing in food crops, horticulture, medicinal plants, agricultural machinery, livestock, animal health, and plantation and farm management.

JICA cooperation supported the Training Center with capacity development of agricultural extension officers of farm management in 1999-2000, followed by Participatory Training in Agricultural Extension Methodology (MP3) during 2003-2006. Both addressed the needs of agriculture in order to enhance the role of agricultural

extension which collapsed because of decentralization and regional autonomy policies. MP3 introduces a "bottom-up" approach to meet the real needs of farmers adopted for training development by AAEHRD.

In general, the Training Center carries out three service activities, namely: (a) Training based on the content of each agriculture center, equipped with technical and service system; (b) SSTC, and (c) MP3 trainings.

With its three service activities, AAEHRD is a leader in training in agriculture and horticulture strongly supported by knowledge on MP3. Its training is often carried out not only in the SSTC framework but also through bilateral cooperation.

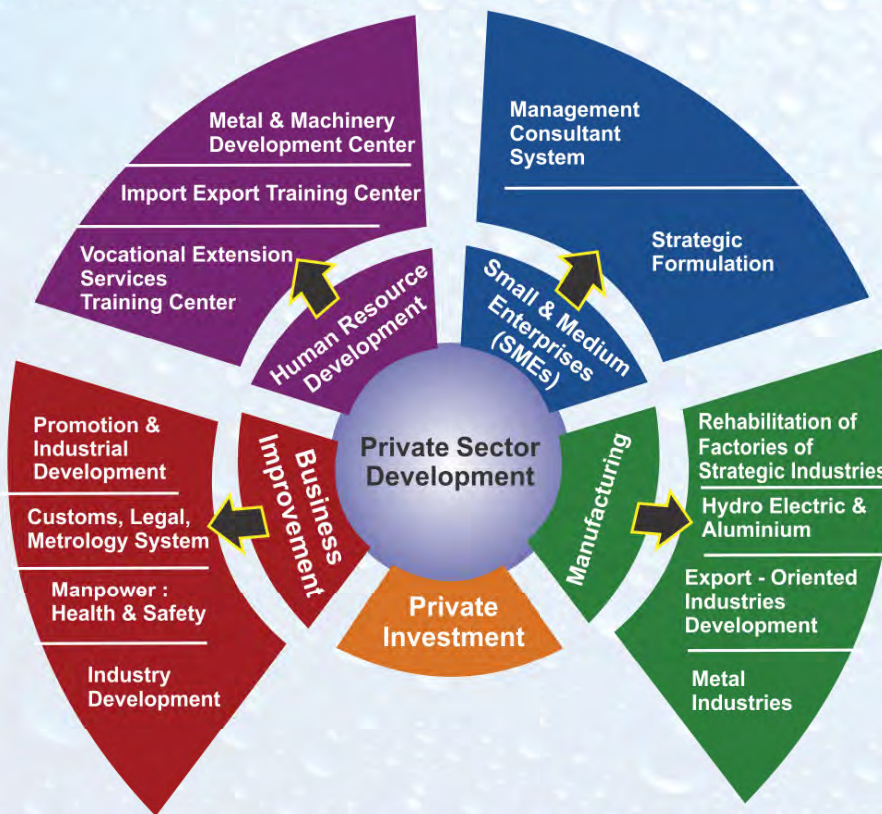
Currently the methodological capability is being developed and modified for training of trainers (TOT). For regular MP3, training takes three months while TOT training takes two weeks.

AAEHRD has cooperation experiences at international levels: training to countries such as ASEAN member countries, African countries (Tanzania, Mozambique, Nigeria etc.) and other countries such as Timor-Leste, and Afghanistan. Trainings were conducted in the SSTC framework, as well as through bilateral cooperation.

Table of Institutions of Indonesia - Japan Cooperation in Agriculture and Fisheries Sector

Ministry/ Institution	Focus	Projects
Ministry of Agriculture (MOA)	Irrigation	Technical cooperation and expanding irrigation area
MOA	Food crops production	Assistances for maize production (1967-74) in East Java; Food production 1968-76 in West Java; Pilot project of irrigated rice production (1971-1976) in Central Java; Research cooperation for rice and pulses (1970-1985); Lampung agricultural development (1972-1982); South Sulawesi Agriculture Development area (1976-1982);
MOA	Rice production	Umbrella program for rice production (1981-1985)
MOA	Plant protection	Plant protection; disease and pest forecasting & guidance network (1980-1987)
MOA	Food crops production	Umbrella program for main food crops (1986-1990)
MOA	Farmer's prosperity	Umbrella program for increasing farmers' income (1995-2000)
MOA and Ministry of Marine and Fisheries (MMAF)	Fisheries & Livestock	Cooperation to livestock and fisheries; Sector study of agriculture, fisheries and livestock (2000s)
MMAF	Fisheries; fishing port	Fishing port projects (1970s- 2000s)
Serang and Lampung Brackish water culture Centers	Fisheries; brackish water culture	Aquaculture cooperation project (1978-1986) in Serang, West Java; The shrimp cultivation project (1988-1993) in Lampung
Gondol Research Institute for Mariculture	Fisheries; mariculture	Hatchery and Mariculture Technology on Milkfish, Shrimp, and Groupers (1988-2008)
Jambi Research Institute for Freshwater culture	Fisheries; fresh water culture	Freshwater culture technology (2000-2007)
Agency for Agricultural Extension and Human Resources Development (AAEHRD)	Agriculture	Agribusiness Technology for Afghanistan; The Third Country Training Program on Agriculture Development Comparative Study Tour for Afghanistan; Rice Post-Harvest Processing Technology for Afghanistan; The Training Program on Vegetable and Fruit Production (Including Post-Harvest & Agro-Processing)
AAEHRD	Livestock	ASEAN Training Course on Dairy Husbandry Technology
Center for Research on Engineering Applications in Tropical Agriculture (CREATA)-IPB	Agriculture	Agricultural Engineering and Technology in Developing Countries
National Veterinary Drug Assay Laboratory (NVDAL)	Livestock	Advanced Veterinary Drug Quality Control; Veterinary Medicine Improvement in Indonesia; Veterinary Drug Improvement
Singosari National Artificial Insemination Center (SNAIC)	Livestock	Development Country Training Course on Artificial Insemination on Dairy Cattle

8. Private Sector Development



In the 1960s, Indonesia opened its investment market to foreign countries. The policy directive was affirmed by the then National Five Year Development Plan (REPELITA) which in 1969 stated that Indonesia would pursue economic development depending on foreign direct investments and foreign assistance. Since the 1970s, Indonesia has shown significant growth in industry development and investment by the private sector. Currently, the Indonesian economy is highly supported by this sector. Investment has become a strategic sector for Indonesia's industries and private sector development.

Japan's cooperation commenced in 1967 at the beginning of Indonesia's industrialization focusing on the rehabilitation of national factories. In this period, support was limited to rehabilitations of caustic soda, paper, and textile factories.

This support was then expanded to include 1) business environment improvement such as fair competition, customs, legal metrology system, 2) manufacturing development, 3) small and medium industry development, 4) vocational training, 5) tourism, and 6) national projects on the basis of public-private cooperation such as the Asahan Aluminium project.

In the 1970s, Japan's support followed a mechanism of economic planning and implementation based on the REPELITA. Therefore, it focuses on national manufacturing companies and some supporting industry development. One of the strategic cooperation efforts that started in this period was the Asahan

Aluminium project. As a national project, Asahan Hydroelectric and Aluminium started in 1975. It was implemented by a joint venture of the Indonesian government and twelve Japanese private companies. By using the Asahan River which flows down from Toba Lake, hydroelectric power was generated. The power was used for an aluminium refinery with a production of 225,000 tons per year; the first aluminium refinery in Southeast Asia. Indonesia Asahan Aluminium (PT. INALUM), the joint venture, is still the only aluminium refinery in Indonesia. It is also the first and largest joint venture company of Indonesian and Japanese companies.

In the 1980s, apart from this national project and continued support for rejuvenation of national companies, Japan's support

focused on small and medium sized metal industry development through vocational training and export promotion based on the "ASEAN human development concept." The cooperation in Indonesia has resulted in the establishment of a center for vocational training of instructors as well as workers of small and medium sized enterprises. At present it is formally called B2PLKLN (The Institute for Manpower Training and Development of Overseas Employment). It is the central agency for vocational skill certification called "competency test" which was developed through collaboration of the Indonesian Professional Certification Authority (IPCA) and the Japan Vocational Ability Development Association (JAVADA).

The Plaza Accord of 1985 had driven Japanese companies to invest in export-oriented industries in ASEAN countries.

JICA supported the establishment of the Import Export Training Center (IETC) with construction of buildings and equipments in 1988. The IETC is currently under the National Agency for Export

Development (NAFED) that is providing trainings for exporters and product testing.

In the 1990s to the early 2000s, apart from continuing in the efforts of the 1980s, JICA supported a Metal and Machinery



Development Center (MIDC) which is an institute for research and development of metal and machinery industries.

In the 2000s, JICA supported the formulation of strategies for developing SMEs, the establishment of the "SME management consultant" system, and a framework for developing human resources to support them. As a result, a small and medium sized enterprise management consulting system was established in Indonesia at the Ministry of Industry which trains local



government officers in charge of SME development.

Dialogue between Indonesia and Japan has played an important role in private sector development.

The dialogue was initiated by Jakarta Japan Club (JJC) and Japan Bank for International Cooperation (JBIC), and established five committees: 1) customs, 2) taxation, 3) labor issues, 4) investment promotion and supporting industries, and 5) electricity.

Center for Vocational and Extension Service Training (CEVEST)

CEVEST was established in 1981 with support of JICA through a technical cooperation program which consisted of construction of buildings such as training facilities and workshops. Then in 1992-1997, JICA supported training for trainers and workers of the vocational training center for private companies of machinery, electronics and electricians. Through the cooperation, 90% of CEVEST instructors have participated in training programs in Japan in the fields of machinery, electricity, electronics, industrial electronics, information technology, welding, etc.

CEVEST, as a vocational center of industry under the Ministry of Manpower & Transmigration, has seen many benefits and impacts because of this significant support. CEVEST collaborated with a wide range of institutions such as government ministries, local governments, the Indonesian Army, private companies, including PT. Panasonic, PT. Sanyo, PT. Pertamina, etc.

Services and facilities to be provided by CEVEST are workshop

and vocational programs of automobile, welding, machineries, fabrication (sheet metal), construction, electricity, electronics, IT, business administration.

CEVEST has various solid cooperation experiences such as:

- ASEAN Regional Training Workshop (ARTW) for automobiles, machines, electronics, electricity, welding and sheet metal.
- Cooperation with Sri Lanka for a vocational construction program in 2012.
- Since 1993, CEVEST is the only place for Japanese language and traditional training programs for those who join on-the-job training in Japan. Every month about 100 persons participate in the program.
- In order to optimize utilization of assets, CEVEST cooperates with the Jakarta National Polytechnic (PNJ) to organize technical education (Polytechnic) for Diploma III for industrial electronic technology, machine technology, automobile, and Diploma IV for information technology.

Table of Institutions of Indonesia - Japan Cooperation in Education Sector

Ministry/ Institution	Focus	Projects
Ministry of Industry	Industry	Rehabilitation of National Factories: Rehabilitation Project of P. N. Soda Waru, Rehabilitation Project of Gowa Paper Mill, Pusri Fertilizer Plant Expansion Project, Expansion of Lawang Spinning Mill Project
Ministry of Industry- Asahan Authority	Industry	Asahan Aluminium Project (start 1975)
Ministry of Man Power - CEVEST	Vocational	Center for Vocational and Extension Service Training (CEVEST) Project (start 1981)
Ministry of Trade - IETC	Trade	Import Export Training Center (IETC) Project (start 1988)
Ministry of Industry	Industry	A Study on Industrial Sub-sector Development in The Republic of Indonesia (1989-1991)
Ministry of Finance (Bea-Cukai), Ministry of Man Power	Customs	Competition Policy, Industrial Property Rights Administration, Customs Administration, Occupational Health and Safety
Ministry of Industry	Industry	The Study on Industrial Sector Development (Supporting Industries) (1995); The Project on Supporting Industries Development for Casting Technology (1996)
Ministry of Industry - MIDC		Institute for Research and Development of Metal and Machinery Industries (MIDC) Project (1999-2004)
Ministry of Industry	SME	Study on Strengthening Capacity of SME clusters in Indonesia (2001); Study on Human Resource Development for SMEs Focused on Manufacturing Industries in Indonesia (2003 to 2004, and 2006 to 2008); Study on human resource development for SMEs focused on manufacturing industries in Republic of Indonesia (2005 to 2008)
Ministry of Trade Directorate General of Customs and Excise	Customs	Post Clearance Audit Trainer's Training
Ministry of Social National Vocational Rehabilitation Center (NVRC)	Vocational	International Training Course on Vocational Rehabilitation for Persons with Disabilities

9. Health and Medical Care



Health and Medical Care sector comprises various issues including medical services (hospitals and nursing), community health (public health), family planning and maternal and child health (MCH), measures against infectious diseases, drugs, and social welfare.

In the 1960s, the First Five-year Development Plan (REPELITA I) in Indonesia promoted family planning with the view that families should reconsider their welfare and receive social assistance under the government's protection. In this context, the first bilateral cooperation between Indonesia and Japan in the area of population and family planning was launched in 1969. Japan's cooperation with the National Family Planning Agency (BKKBN) included provision of contraceptives, light-duty vehicles and audio-visual equipment.

In the 1970s, cooperation expanded to community health and the construction of hospitals. In regard to hospital development, in 1976, Regional Health in North Sumatra (originally begun as a complementary project of the Asahan Hydroelectric Project) was developed. This was followed by the 1979 construction of Nurse Education Facilities for training of health personnel in Jakarta and Makassar.

In the 1980s, support was expanded to include infectious disease control. In regard to family planning, it was completed with a Maternal and Child Health (MCH) program and a pilot development program. From the late 1980's onwards, a concept of 'safe motherhood' became a mainstream in the area of population policy worldwide as an alternative to family planning. In this context, cooperation to Improve Family Planning and MCH was conducted from 1989

onwards in cooperation with Boshi-Aiiku-Kai and the Institute of Public Health. This aimed at improving the quality of MCH services. The Director-General of the Provincial Health Office who was the counterpart of this project was introduced the MCH handbook in Japan while visiting the country for training. He was impressed and later submitted a strong request to the Japanese government to develop an Indonesian version of the MCH

handbook. It took more than a year to adjust the MCH handbook, and make it applicable to the Indonesian context. The MCH handbooks were distributed in Indonesia on a trial basis, and there was a high demand from mothers. In 2010, more than 60% of pregnant women were provided with MCH Handbook nationwide.

The Third Five-year Development Plan stressed the importance of reducing mortality rates, ameliorating nutritional status and improving health services. While family planning should be actively promoted, people would not make efforts to control their fertility unless attention was paid simultaneously to the reduction of the infant mortality rate (IMR) and the improvement of the average life expectancy. IMR and the total fertility rate (TFR) in Indonesia steadily decreased through this concentrated policy approach: 142 and 5.61 in 1970 to 25 and 2.13 in 2009.

In respect to hospital improvement, assistance was provided to construct A-class emergency medical centers. A Grant Aid Project for the Construction of the Emergency Medical Centre of Dr. Cipto Mangunkusumo Hospital in 1984 was the first of this kind of assistance; the second was Sanglah Hospital, Bali. One of the most important cooperation activities in this sector that were started in this period was Live Vaccines Production in cooperation with Bio Farma.

In the 1990s, cooperation covered drugs and social welfare. The Five-Year Development Plan of the 1990s highlighted the need for reducing population increase and strengthening health and social welfare. JICA's assistance during this period included support for the Tropical Disease Center of Airlangga University which was part of a cluster of the measures to control infectious diseases. There were also the construction of the New Emergency Unit at Dr. Soetomo Hospital, a grant aid project to rehabilitate an A class hospital, and a technical cooperation project of Upgrading the Emergency Medical Care System.

In the 2000s cooperation focused on family planning programs and education. JICA's assistance included Improving Maternal and Child Health with the MCH



Handbook. This was successful and carried out in collaboration with the Ministry of Health.

As a result of Japanese support, the MCH Handbook in Indonesia, which had started in 1994, led to the issuance of a decree of the Minister of Health to officially



distribute and use it. The Handbook was distributed in 33 provinces in 2005 and the knowledge has been shared through a Third Country Training Program to countries such as Afghanistan, Laos and Palestine. In 2010, it was estimated that the Handbook would be provided to 5 million newly pregnant women per year.

PT. Bio Farma

PT. Bio Farma (Persero) is a State Owned Enterprise fully owned by the government. It is the single human vaccine manufacturer in Indonesia and also the largest in Southeast Asia. It is dedicated to the production of vaccines and anti-sera of international quality.

JICA supported Bio Farma through support of development of polio and measles vaccine production. Vaccines produced by the facility are always used in national vaccination programs and even exported through UN agencies (such as UNICEF) to various countries. Indonesia has been self-sufficient in meeting the needs of polio and measles vaccines for the Expansion Program on Immunization.

Bio Farma maintains sustainability as well as development and improvement of production capacity through self-financing as follows:

- Increased production capacity of 20 million polio vaccine doses to 700 million doses.

- Increased production capacity of 7.5 million measles vaccine doses to 35 million doses.

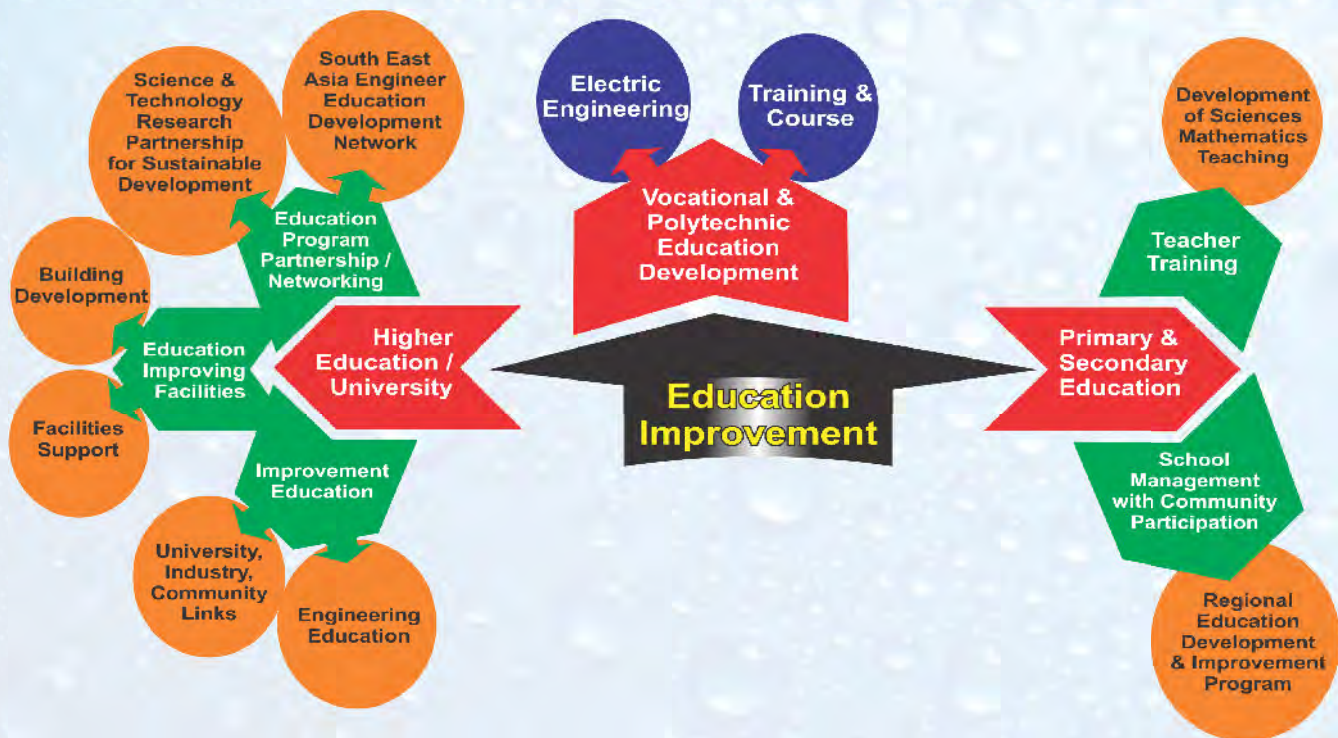
This cooperation is very beneficial to the development and the improvement of health of Indonesia's population and also the world. In disease prevention programs, the cooperation played a big role in efforts of reducing and eliminating measles as well as regional and global polio eradication (ERAPO).

The company has earned national and international recognition in respect to the production of vaccines and production quality standards from the recognition by, among others, the WHO and the Global Training Network (GTN). It also won the Primaniyarta Award (Ministry of Trade). The company is a member of Developing Countries Vaccine Manufacturers Network (DCVMN) which is an association of vaccine producers comprising 14 developing countries. DCVMN was founded in 1999 in Bandung.

Table of Institutions of Indonesia - Japan Cooperation in Health and Medical Care Sector

Ministry/ Institution	Focus	Projects
Ministry of Health/ National Family Planning Agency (BKKBN)	Community health	Family Planning Project - in cooperation with Japanese Organization for International Cooperation in Family Planning (JOICFP) (1969-1985)
Ministry of Health Ministry of Health, RS. Cipto Mangunkusumo RS. Sanglah	Health/ Hospital Health facilities/ hospital development	Regional Health in North Sumatra (1976-1989) Construction of Nurse Education Facilities; Jakarta and Ujung Pandang (Makassar) (1979); Rehabilitation of Hospitals; Construction of the Emergency Medical Centre of Dr. Cipto Mangunkusumo Hospital (1984); The A-class Sanglah Emergency Hospital in Denpasar in Bali Province (Project for the Construction of the Emergency Hospital at Bali) (1989)
Ministry of Health/ BKKBN	Family planning/ MCH	Improve Family Planning and Maternal and Child Health (MCH) in cooperation with Boshi-Aiiku-Kai and the Institute of Public Health (1989-1994); Central Java Family planning & MCH - Salatiga City [Technical Cooperation - pilot] (1989-1994)
PT. Bio Farma	Vaccines production	Fundamental Technology Transfer for Production of Live Vaccines (1989-1996), Training on Quality Assurance for Vaccines (1998-2007) Third Country Training Program (TCTP), Grant Aid: Project for the Construction of the Facilities for Live Attenuated Oral Poliomyelitis and Measles Vaccine production (1989, 1990), Project for Improvement of the Equipment (1991)
University of Airlangga RS. Dr. Soetomo	Health education and research Health facilities/ hospital dev.	Support for the Tropical Disease Center of Airlangga University (1990-1993) New Emergency Unit at Dr. Soetomo Hospital at Surabaya in East Java (1993); Upgrading the Emergency Medical Care System of the Dr. Soetomo Hospital (1995-2000)
Ministry of Health	Health Family planning/ MCH Community health policy	Regional Health in South Sulawesi (1997-2002) Maternal and Child Health Handbook Project - Technical Cooperation; in 2 priority provinces (Western Sumatra, North Sulawesi) and in 6 semi-priority provinces (Bengkulu, Eastern Java, Yogyakarta, Bali, Western Nusa Tenggara, South Sulawesi) (1998-2003); Project for Ensuring the Quality of Mother Child Health (MCH) Services through MCH Handbook (1998-2003 Technical Cooperation) Community health dispatched to the semi-priority provinces - Japan Overseas Cooperation Volunteers (policy support) (1999)
Syarif Hidayatullah Islamic University Ministry of Health	Health education and research Family planning/ MCH Health Community health	Development Project for Faculty of Medicine and Health Sciences of Syarif Hidayatullah State Islamic University Improving Maternal and Child Health with MCH Handbook (2006-2009 Technical Cooperation) Improvement of District Health Management Capacity in South Sulawesi Province (2007-2010) Enhance surveillance system for Avian Influenza (2007-2010); support for National Tuberculosis Program (2008-2011)
Kusuma Buana Foundation (YKB)	Community health	TCTP Programs
University of Indonesia (UI)	Community health Health education and research	TCTP on Community Medicine for Afghanistan Officials Development of World Class University of Indonesia in Health Service (2010-2012)

10. Education



Indonesia's formal education system consists of elementary school (6 years), junior secondary school (3 years) and senior secondary school (3 years), then university/ higher education schools. There are also vocational schools which are at the same level as junior and senior secondary schools, as well as vocational colleges which are at the same level as universities.

In the 1970s, JICA supported facility improvement and provided materials and equipments for leading universities. The support has continued to the present with a rich palette of activities.

In the 1980s, JICA began support for Bogor Agricultural Institute (IPB) through construction of buildings. This was the first case of support through the construction of buildings in this sector. In order to develop the industry sector by attracting foreign capital, polytechnics with practical engineering education became a matter of the utmost urgency in the mid 1980s. Establishment of the Electronic Engineering Polytechnic Institute of Surabaya (EEPIS) was a response to meet Indonesia's needs; it started in 1986.

In the 1990s, JICA supported the Higher Education Development Support Project (HEDS) in cooperation with USAID to strengthen engineering education at eleven universities in the country. It was in line with the drastic change in the industrial structure, a wave of industrial development extending from the most-industrialized island of Java outwards. Increasing the standard of local universities was recognized as an important issue.

In the mid 1990s and simultaneously to university development, JICA began its support for primary and secondary education;

when Indonesia commenced its five-year national development plan of PELITAVI (1994-1999), achievement of 9 years compulsory education became a policy objective. Begun in 1995, JICA supported efforts to improve the quality of teachers with teacher training courses in teacher education colleges through the Improvement of Mathematics and Science Teaching for Primary and Secondary Education Program (IMSTEP) in the late 1990s.

Thereafter, JICA supported the bottom-up model for improving junior secondary education in the decentralization era with its

Regional Educational Development and Improvement Program (REDIP). REDIP's progressive approach for school-based management and community participation succeeded in keeping up with the needs. Not only the Ministry of National Education but several local governments adopted the ideas of REDIP.

In the 2000s, the Government of Indonesia began a drastic education reform, and its efforts were realized in the promulgation of the Law concerning the National Education System in May 2003. Japan responded to this reform with the start of a new phase of REDIP in 2004 that was intended to strengthen the management capacity of the district/ municipality education offices through community participation.

In this period, the Southeast Asia Engineering Education Development Network (SEED-Net) was also established. Several universities became resources for regional development. EEPIS received hundreds of trainees from 16 African and Asian countries under the scheme of the Third Country Training Program from 2002 to

2009. From 2001-2007, the Bandung Institute of Technology (ITB) and Gadjah Mada University (UGM) received many international



students from ASEAN Countries for their master and doctor degree programs.

To respond to the growing recognition of the role of universities in regional development, the Project for Improving Higher Education Institutions through University – Industry – Community Links (Hi-Link) at Gadjah Mada University was commenced in 2006. Support for Sepuluh Nopember Institute of Technology and Hasanuddin University was begun in order to develop these universities into hub institutions for networking in Eastern Indonesian engineering education.

In 2008, a new scheme of “Science and Technology Research



Partnership for Sustainable Development” was initiated; ITB Bandung was involved in this. Apart from this, loans were provided for development of Syarif Hidayatullah State Islamic University and the University of Indonesia (UI).

Meanwhile, in 2006, based on the results of IMSTEP, “Strengthening In-service Teacher Training of Mathematics and Science Education (SISTTEMS)” was started for elementary and secondary education, aiming to improve the quality of in-service teachers through lesson study. These two projects were integrated as “Program for Enhancing the Quality of Junior Secondary Education (PELITA)” in 2009.

Electronics Engineering Polytechnic, Institute of Surabaya (EEPIS)

The early history of EEPIS (also known as PENS) began in 1985. JICA supported the construction of buildings for lecturer training and curriculum. Currently, EEPIS is a famous college with many achievements. It offers vocational education/ applied technology in the field of electrical engineering which is more practice than theory oriented. EEPIS is the only polytechnic specializing in this field.

EEPIS offers Diploma 3 and Diploma 4 education programs in the fields of Electrical Engineering, Information Engineering, Energy and Mechanics, and Creative Multimedia. Recently, EEPIS opened a master program in applied technology education in Electrical Industrial Engineering and Information and Computer Engineering, the first one in Indonesia.

EEPIS is a polytechnic institute that introduced Japanese style practical learning. EEPIS is renowned for its excellence in the field of

robotics as well as information technology.

EEPIS won the Indonesian Robot Contest 12 times consecutively. Since 1991, it has won at least 49 robotic championships as the first winner, or for best design, best innovation, best IT, best idea, etc. from national and international competitions in Japan, China, Thailand, South Korea, India, etc. EEPIS won JICA's Special Award for International Cooperation as well as the Energy Efficiency Award at the National Level in 2009 and the Telkom TeSCA Platinum Award.

EEPIS organized international training in the field of electronic engineering education for lecturers of polytechnics / high schools and universities throughout Asia such as in Brunei, Thailand, Philippines, Malaysia, Laos, Papua New Guinea, Pakistan, Bangladesh, Nepal, Sri Lanka, and Vietnam from the 1990s to the early 2000s. The training provided participants with a chance to upgrade their techniques, knowledge and appropriate teaching methodologies in the field of electrical engineering.

Table of Institutions of Indonesia - Japan Cooperation in Education Sector

Ministry/ Institution	Focus	Projects
Bogor Agriculture Institute (IPB)	Agriculture	Equipment supports (1975-1983); Building construction and technical cooperation of IPB (1983)
Ministry of Education Surabaya (ITS)	Electronics/ engineering	Establishment of Electronic Engineering Polytechnic Institute of Surabaya (EEPIS) (1986)
Bandung Technology Institute (ITB), Syiah Kuala University, IPB, Mulawarman University, Pattimura University, and Gadjah Mada University (UGM)	High education development	Higher Education Development Support Project (HEDS) (1990-2002)
Ministry of Education	Elementary and secondary education	Project for Development of Science and Mathematics Teaching for Primary and Secondary Education (IMSTEP) (1995-1998); Improvement of Science and Mathematics Teaching for Primary and Secondary Education (1998)
Ministry of Education	Elementary education	Regional Educational Development and Improvement Program (REDIP) (1999-2008)
EEPIS	Engineering	African and Asian countries in the scheme of the Third Country Training Program (2002-2009)
EEPIS, ITB, UGM, etc.	Engineering	Southeast Asia Engineering Education Development Network (SEED-Net) (2001-2008)
UGM, ITS and Hasanuddin University (UNHAS)	Engineering	Improving Higher Education Institutions through University-Industry-Community Links (Hi-Link) in Gadjah Mada University (Hi-Link) (2006-2008)
Ministry of Education	Elementary and secondary edu.	Strengthening In-service Teacher Training of Mathematics and Science Education (SISTTEMS) (2006)
ITB, Syarif Hidayatullah State Islamic University, and University of Indonesia (UI)	Research	Science and Technology Research Partnership for Sustainable Development (2008)
Ministry of Education	Junior Secondary Education	Program for Enhancing Quality of Junior Secondary Education (PELITA) (2009)
EEPIS	Course of engineering	International Training Course on Electronic Engineering Education; etc.
Faculty of Math and Sciences, Indonesia University of Education (UPI)	Education	Short-Term Training in Indonesia for the Project for Strengthening Teacher Education on Special Needs Education Phase 2 (STESE2); Afghanistan; etc.

11. River Basin Development and Management



Indonesia has many big rivers that constitute a potentially serious flood hazard. In fact, flooding happens every year and its impacts are enormous. But the rivers also have a utilization potential such as water supply, irrigation, and hydropower electricity generation. Development and management of river basins through dam development (especially multipurpose dams) is a strategy not only for elimination of the flooding hazards but also for water supply, irrigation and hydropower supply.

The Indonesia-Japan cooperation in this sector began towards the end of the 1950s with the construction of the Neyama Drainage Tunnel Project in the Brantas river basin. Many other river basin projects followed. The cooperation comprised development studies, grant aid, ODA loans, and technical cooperation. In general, Japan's support for water resources development and management can be grouped in three periods; i) construction of multipurpose dams (3K project) in the 1960s, ii) planning through development studies and implementation of priority projects from the 1970s to the 1990s, and iii) rehabilitation of existing water resources facilities and water resources management in the 2000s.

In the 1960s, after completion of the Neyama Drainage Tunnel project, the number of malaria cases decreased dramatically to near zero, and agricultural production was increased through irrigation in the project areas. Japan then provided official loans to construct the three multipurpose dams referred to as 3K, namely the Karangates and Kali Konto Dams in the Brantas River basin and the Riam Kanan Dam in South Kalimantan. These multipurpose dams were developed with a focus on hydropower generation, since priority was given to the reduction power shortage at that time. These projects were completed by the 1970s.

To meet the increasing need of river basin development, the Japanese government carried out development studies of flood control and river basin (water resources) development. The priority projects which were financed

through ODA loans.

In the 1970s, out of twelve studies/projects of river basin development, ten were located in the three representative basins (Brantas in East Java Province, Bengawan Solo in Central Java Province, and Jeneberang in South Sulawesi Province). Included in those financed with ODA loans were construction of the Bili-Bili multi-purpose dam in the Jeneberang river basin and the Wonorejo multi-purpose dam in the Brantas river basin. Construction of other multipurpose dams including the Wlingi dam, Bening (Widas) dam, and Wonogiri dam (Bengawan Solo river basin) also were begun.

In the 1980s, development studies for preparation of the 3rd and 4th master plan for the Brantas River basin were carried out. Many schemes concerned with the three representative basins were carried out during the 1970s through the 1990s, also for other basins. These include "Master Plan Study on North Banten Water Resource Development", "Study of Belawan-Padang Integrated River Basin development" and "Study of Kampar-Indragiri River Basin Development". These studies aimed at promoting the

development in regions where development was lagging behind.

In the 1990s, the number of flood control projects in other river basins increased noticeably. During the 1970s through the 1990s, flood control projects in four cities, namely Banda Aceh, Padang, Bandung and Medan, were financed through Japanese ODA loans. After completion of the projects, flooding hardly occurred in the four cities. Accordingly, Japan's support of flood control also greatly contributed to the



stabilization of public welfare in major cities.

In the 2000s, after completion of the multi-purpose dam, support by Japan was continuously provided to rehabilitation of water resources existing facilities and capacity improvement for the schemes concerned with the basin, and transfer of knowledge for the Indonesian experts/engineers has achieved sufficiently. In the early 2010s, Japan continued to support Brantas River

Basin with loan project, the "Water Resources Existing Facilities Rehabilitation and Capacity Improvement Project", which is under implementation as of May 2010, comprising construction works for rehabilitation of flood control and water resources facilities, as well as capacity building for the state-owned corporation (PJT 1) that is responsible for operations and maintenance of water resources and flood control facilities in the Brantas River basin.

Brantas BBWS

The watershed (DAS) of Brantas River is a national strategic river area. It is under the authority of the central government. The Brantas watershed crosses 15 districts/ cities in East Java where about 40% of East Java's population lives, and with a population density that is 1.2 times higher than the average of East Java.

Development of the Brantas watershed with a 'modern' approach was begun in 1961 in cooperation with the Government of Japan. It comprises the formulation of a series of Master Plans to address the issues of the watershed based on the principle of "one river, one plan, and one coordinated management". The total investment was very large (up to 2000 amounting to Rp 7.38 trillion).

In general, management of the Brantas watershed is under the Center of Brantas River Basin (BBWS Brantas). However, management of the utilization operations is under a state-owned corporation which was established by the central government through a Government Regulation to manage the Brantas River and its 39 tributaries; the corporation is known as Perum Jasa Tirta I (PJT 1). It is responsible for the management and utilization of the Brantas River watershed, and is authorized to levy a contribution from its beneficiaries. Management covers management of : water quantity and quality, sedimentation (including Sabo dams) and water resources.

Development efforts and watershed management as well as land rehabilitation have been carried out in a variety of activities, namely the management of public forests, land use in the lower stands, development of mangrove forests, reforestation, greening/ rejuvenation, green belt, area of fruit or latex cultivation models, village nursery, city forest/garden, control dam, retaining dam, infiltrate wells, beekeeping, and gully plug.

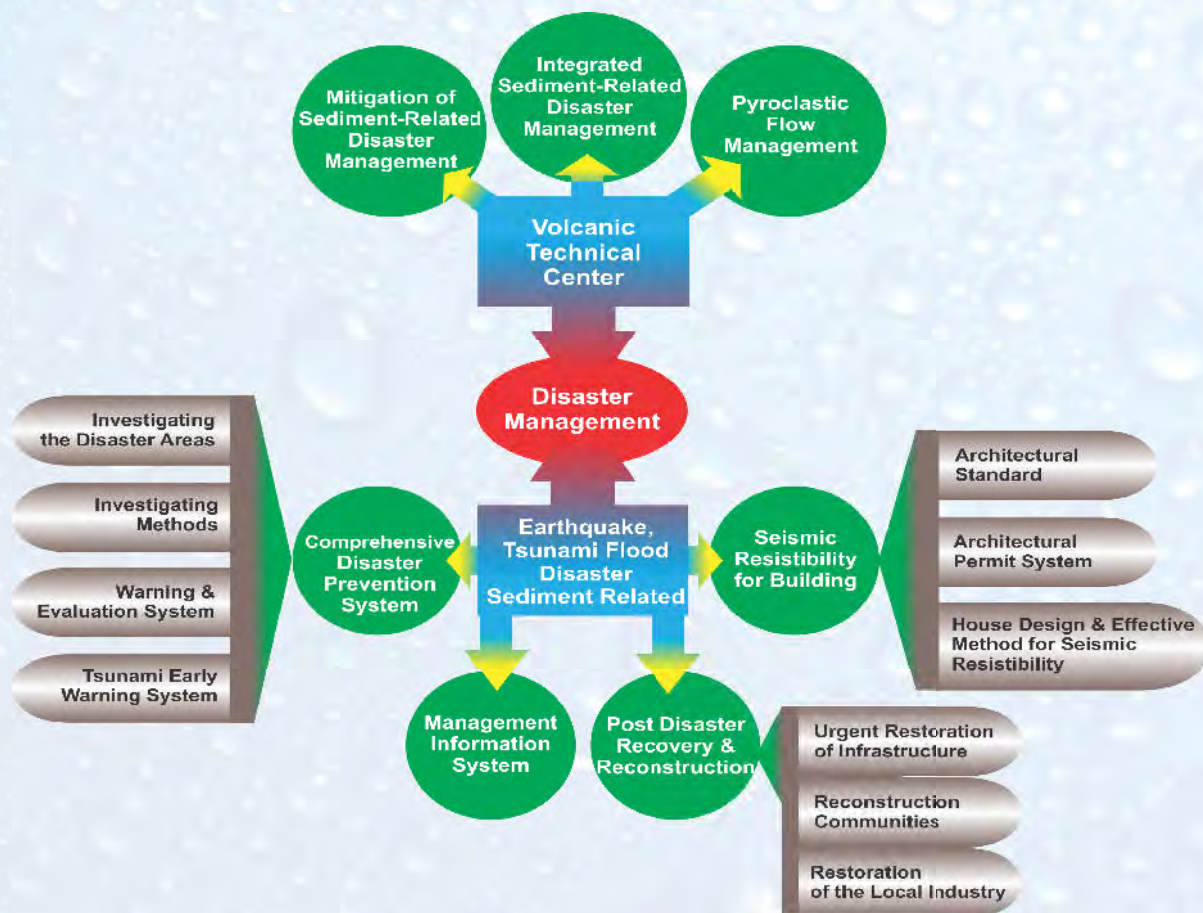
Water management is of utmost importance in the Brantas river watershed, it includes flood control and management of water distribution to meet the needs of irrigation, electricity, raw water, etc. It has resulted in a large number of water infrastructures and provides huge advantages, including:

- Flood control - approximately 56,000 to 80,000 ha of land is safe from flooding for a period of 50 years;
- Irrigation - water supply for 345,000 ha of paddy fields and about 83,000 ha of which is technical irrigation, directly from the Brantas river (2.5 billion m³ per year) and of production of 25% of the national rice stock (approximately ½ million tons/year);
- Electricity - approximately 900-1000 million kWh/year;
- Drinking water - for domestic raw water supply, around 200-240 million m³/year;
- Industrial water - raw water supply of about 120-130 million m³/year; etc.

Table of Institutions of Indonesia - Japan Cooperation in River Basin Development and Management Sector

Ministry/ Institution	Focus	Projects
Ministry of Public Works, Directorate Water Resources (MPW-DWR)	Multi-purpose dam: flood control, irrigation, water supply and hydropower	Neyama Drainage Tunnel Project (Brantas River Basin) 1959
Center of River Basin BBWS Brantas	Water management planning	Brantas River Basin Master Plan cover: The Master Plan I (1961) - priority of flood control; The Master Plan II (1973) - priority of food production; The Master Plan III (1985) - priority of water supply for drinking and industrial waters; The Master Plan IV (1998) - priority water resource management.
BBWS Brantas	Multi-purpose dam dev.	Kali Konto multi-purpose dam development; Karangates multi-purpose dam development
BWS Kalimantan	Multi-purpose dam dev.	Riam Kanan Dam Development Project (South Kalimantan)
BBWS Brantas	Multi-purpose dam dev.	Brantas River Basin Development Projects (Wlingi dam, Bening/Widas dam, and Wonorejo dam)
BBWS Bengawan Solo	Multi-purpose dam dev.	Solo River Basin Development Project (Wonogiri Dam)
BBWS Bengawan Solo	Water management	Bengawan Solo River Basin Master Plan (1973); Construction of the Lower Solo Improvement Project II
BWS Sulawesi (Jeneberang)	Water management: Flood control, irrigation, water supply and hydropower	Jeneberang River Basin Development Projects (Bili-Bili dam): Lower Jeneberang River Flood Control Project (1979-1980); Jeneberang River flood Control Project (Phase II) (1981-1982); Ujung Pandang Water Supply Development Project (Stage I); Bili-Bili Irrigation Project; Multipurpose Dam Hydroelectric Power Plants Project (until 2001); The Study on Capacity Development for Jeneberang River Basin Management (2004-2007)
MPW-DWR	Water management studies	Studies: Master Plan Study on North Banten Water Resource Development; The Study on Belawan-Padang Integrated River Basin development; The Study on Kampar-Indragiri River Basin Development Project
MPW-DWR	Flood control	Flood control projects for four cities: Banda Aceh, Padang, Bandung and Medan (1990s)
MPW-DWR	Capacity building on water management	Capacity Development Project for River Basin Organizations in Practical Water Resources Management and Technology (2000s)
BBWS Brantas	Water resource	Water Resources Existing Facilities Rehabilitation and Capacity Improvement Project 2010
Irrigation Engineering Service Center (IESC), MPW-DWR	Irrigation: planning-programming-construction-OM	International Training Course in Irrigation and Drainage Engineering

12. Disaster Management



Indonesia is ranked as one of the world's most volcanic countries and is known as a part of the Ring of Fire. In most densely populated Java there are more than 20 volcanoes. Most Javanese live around the volcanoes and are under their influence. They have encountered natural disasters attributed to volcanic eruption. Millions of people are always facing potential disasters caused by volcanic eruptions. Since large-scale disasters caused by volcanic eruptions are so frequent, countermeasures for sediment disasters are an important issue for the preservation of lands and economic development in Indonesia.

Japan's cooperation in this field was begun in the early 1970s when the Indonesian Government formally requested the Japanese Government to provide technical assistance on Sabo technology. The Japanese Government assisted the country in the Sabo disaster by way of carrying out a development study on countermeasures for volcanic sediment disasters of Mount Merapi, and providing technical support for the Volcanic Sabo Technical Center and improving volcanic technology.

Under the cooperation, the Japanese Government deployed experienced JICA experts, and trained more than 300 Indonesian Sabo engineers. Thus, Japanese technical assistance projects related to Sabo have greatly contributed to improve capacity of Sabo and Sabo-related engineers in Indonesia. The Indonesian Sabo engineers increased their technical capabilities concerning the points of: technology and knowledge on mitigation of sediment-related disaster damage; pyroclastic flow management

and integrated sediment-related disaster management; and collection and utilization of related data/information.

In parallel to the cooperation related to volcanic disasters, JICA supported other types of disaster prevention such as the natural dam disaster "Banjir-Bandang", the Sumatra Offshore Earthquake in 2004, the Central Java Earthquake in 2006, and formulation of the natural disaster management plan in Indonesia through technical cooperation projects and development studies. Banjir-Bandang is a sudden flood which divides into types of flood/sediment of which most severe damage is caused by flow of debris associated with the creation of a natural dam in a gorge. The cooperation is to enhance the capability of staffs of the concerned organizations in investigating the disaster areas as well as establishing investigation methods and improvement of the warning and evacuation system in model areas of disaster.

During the 2000s, Indonesia suffered a succession of disasters, including major earthquakes off the coast of Sumatra and the resultant tsunami (December 2004), an earthquake in central Java (May 2006), and an earthquake off the coast of Padang in West Sumatra (September 2009). Japan immediately responded by deploying emergency relief teams, and provided financial and technical assistance for quick post-disaster recovery. Many facilities were rehabilitated or newly constructed by Non-Project Grant Aid of the Japanese Government such as community buildings, schools, roads, drainage pump stations, drainage canals, etc.

Furthermore, JICA strengthened Indonesia's disaster management systems in anticipation of future disasters through the formulation of Comprehensive Disaster Prevention Plans from 2007 to 2009, improvement of early warning systems for tsunami to enhance the capability of staffs of the tsunami warning center of the Meteorological, Climatology and Geophysical Agency (BMKG), and reinforcement of administrative functions to improve the seismic resistance of houses from 2007 to 2011.

In the meantime, the Disaster Recovery and Management Sector

Program Loan was signed by the Japanese and Indonesian Governments in 2007. The program aimed to strengthen comprehensive and fundamental capacity to cope with natural disasters in terms of institutions, organization and infrastructures. A Joint Committee on Disasters of the two governments was also established to strengthen the organizational system for disaster prevention through the National Disaster Prevention Agency (BNPB).

Research Institute for Human Settlements (RIHS)

Research Institute for Human Settlements (RIHS) is one of the 4 R&D centers under Agency of R&D at the Ministry of Public Works. RIHS has facilities of: a) Meeting rooms with a capacity of 300 persons, 100 persons, 40 persons and 30 persons; b) Dormitories for 18 persons (share room); c) Laboratory of building structure and construction, laboratory of building materials, laboratory of quality tests, laboratory of pipe strength tests and laboratory of fire resistance tests.

JICA supported RIHS through the construction of buildings and facilities, and with a Project Type Technical Cooperation to develop technology for multi-story residential buildings, Third Country Training Program (TCTP) on earthquake resistant building design, and TCTP on appropriate technology for low-cost housing.

RIHS has accredited laboratories and experts who have

sufficient capability in their field and are fluent in English for trainings. RIHS's Involvement in national disaster relief obtained appreciation such as the award given for the provision of infrastructure-based public participation and an award in disaster relief.

Through the implementation of TCTP RIHS's knowledge was shared with neighboring countries of Southeast Asia (Myanmar, Laos, Cambodia and Vietnam) on low-cost housing as a program of the Indonesian Government. The knowledge that can be shared with developing countries concerns:

- Appropriate technology for sustainable low-cost housing;
- Technology of developing local building materials;
- Technology of clean water and sustainable sanitation (sustainable water supply and sanitation) in tropical areas;
- Planning of earthquake resistant buildings (earthquake resistant building design).

Table of Institutions of Indonesia - Japan Cooperation in Disaster Management

Ministry/ Institution	Focus	Projects
Ministry of Public Works (MPW)	Volcanic related disaster management	Sabo Technical Center Project; Improvement of the Volcanic Technology; Volcanic Sabo Technical Center Project; Integrated Sediment-Related Disaster Management Project for Volcanic Area;
Sabo Technical Center	Volcanic related disaster management	Master Plan Study on Land Erosion and Volcanic Debris Control in the Area of Mt. Merapi (1980); Mt. Merapi Urgent Volcanic Debris Control Project (1985); Mt. Merapi and Mt. Semeru Volcanic Disaster Countermeasures Project (1995); Urgent Disaster Reduction Project for Mt. Merapi / Progo River Basin and Mt. Bawakaraeng (2004)
National Disaster Prevention Agency (BNPB)	Earthquake and Tsunami Disaster reconstruction	Aceh, Central Java (Yogyakarta) and Padang Reconstruction Projects
BNPB	Flood disaster management	Project on Integrated Disaster Mitigation Management for Banjir-Bandang (2008-2011)
BNPB	Earthquake disaster management	Project on Building Administration and Enforcement Capacity Development for Seismic Resilience (2007-2011)
BNPB	Tsunami disaster management	Project on Capacity Development for National Center of Tsunami Early Warning System (2007-2009)
BNPB	Disaster management	Study on Natural Disaster Management in Indonesia; Capacity Building for Organizations and Communities Concerned with Disaster Prevention; Disaster Recovery and Management Sector Program Loan (2007-2009)
Sabo Technical Center	Volcanic related disaster management	Capacity building of the Indonesian Sabo Engineers; International Training Course on Sabo Engineering and Water Induced Disaster Countermeasures, etc.; Erosion and Sediment Control Engineering Course (ESCE)
Research Institute for Human Settlements (RIHS) - Agency for Research and Development, MPW	Settlement related disaster management	Earthquake Engineering (1981-1989); Institutional Advanced Course on Earthquake Disaster Prevention for Building Engineer; Sustainable Structure Safety Design for Building Engineers; Housing Policy (1987-1989); International Advanced Course on Integrated Technology for Housing Strategy; Integrated Technology for Housing Material for Low-Cost Housing

13. Urban Environment, Water and Sewerage Systems



Indonesia's large population tends to concentrate in urban areas, causing urban problems not only in Java as the center of the country's economy and politics, but also in other urban areas in other islands. Basic needs such as water supply, drainage, sewerage, housing and other urban facilities have become the main problems faced in urban areas.

JICA started providing support to the sector in the 1960s, emphasizing improvement of waterworks (water supply) in Jakarta, which was classified as a high priority among other social infrastructures, through the first Master Plan for the Water Supply System. In the 1970s, the French Government provided assistance for the construction of the Pejompongan Treatment Plant (II). While the Pejompongan Treatment Plant (I) was constructed in 1957 by the Dutch Colonial Government, as well as the Jakarta water supply system which was built in 1922.

In the 1970s, Japan's cooperation focused on water supply in Jakarta. It was in line with the second Five-Year Development Plan (REPELITA) 1974-1978 on water supply to increase the supply of drinking water.

In the 1980s, the third REPELITA 1979-1984 described the main issues of urban environment: control of the expansion of large-scale cities as well as growth of middle- and small-scale cities. The drainage system and waste management were also recognized as emerging issues. According to the third REPELITA, Japan's cooperation expanded to sub-sectors other than water supply such as the improvement of urban living conditions including those in medium-sized and small cities, such as the Urban Development Plan for Surabaya Metropolitan Area that was formulated in 1983, and the flood control project in Jakarta to secure the safety of people's living environment. Meanwhile, water supply development continued, and JICA started disseminating it to

other cities such as Surabaya and Makassar.

The fourth and fifth REPELITAs 1984-1988, 1989-1993 demanded that the issues to be tackled in this sector were water supply in rural areas, training of water supply engineers, sewerage, drainage, and solid waste management, and environmental problems such as degradation of river water quality. In line with these plans, JICA started supporting urban sanitation such as sewerage and waste management, and urban environment such as environmental monitoring, as well as improvement of residential environment in small cities and rural areas. In 1989, the Water and Sanitation Training Center was established; It conducted trainings in solid waste management and domestic sewage. A total of 2,471 trainees over 19 years from 1991 to 2009 were trained at the center. JICA contributed to the training through construction of the center and a technical assistance project for management of the center.

In 1992, based on the fifth REPELITA 1989-1993, Indonesia's Ministry of Environment established the Environment Management Center with Japanese grant aid. In this period, the Environmental Monitoring Project was also conducted with an ODA loan from 1994 to 2001 to establish an environmental monitoring system in local areas. The project installed monitoring equipment in 39 local laboratories.

In the 2000s, under decentralization, the main issues in the sector were (a) infrastructure in residential areas such as water supply, drainage, sewerage, waste management, and local roads in urban and rural areas, and (b) environmental conservation and management. JICA's cooperation shifted in accordance with this development. Local water supply development projects in Sulawesi and in East and West Nusa Tenggara were implemented through Japanese grant aid. In the urban sanitation and environment sub-sectors, the drainage system improvement in Jakarta (grant aid) and the sewerage system improvement in Denpasar (ODA loan) were implemented. In addition, because the responsibility for environmental monitoring was transferred from Ministry of Environment to local governments, it became necessary to develop local government institutions for environmental management. Therefore, technical cooperation projects such as Local Environment Management System Development in 2002-2006, and Capacity Development for Local Government on Environmental Management in 2008-2011 were implemented.

In the sub-sectors of urban and rural planning, the Law concerning Spatial Planning promulgated in 1992 was amended in 2007 with assistance of JICA experts. Based on this amended Law concerning Spatial Planning, the National Spatial Plan was formulated with Japan's assistance in 2008. Within this 2008 National Spatial Plan, Mamminasata (Makassar, Maros, Sungguminasa and Takalar), a greater Makassar urban areas in South Sulawesi Province was listed as one of urban areas which function as National Strategic Region as well as National Activity Center. In line with the National Spatial Plan, JICA carried out a Comprehensive Development Study in Mamminasata Metropolitan Area in South Sulawesi Province. The urban areas

included in Mamminasata were Makassar Municipality area, the urban part of Maros district, Sungguminasa-the capital of Gowa district, and the adjacent urban part of Takalar district. The study basically aimed to plan and prepare Makassar greater area to become a sustainable metropolitan city in the future.



Courtesy: MCI



Field Practice with GPS
Courtesy: WSTC

Based on the results of the study, JICA extended a technical assistance project supporting appropriate enforcement and operations of Indonesia's spatial planning regulations including the execution of spatial planning in Indonesia.

Water and Sanitation Technical Center (WSTC)

The Water and Sanitation Technical Center (WSTC) Region I was inaugurated in 1990 with the name of Clean Water Training Center. The Center was constructed through JICA's Technical Cooperation Project (TCP) scheme to improve the capacity of public officials in planning, designing, constructing, operating, and maintaining water and sanitation facilities. The Center is currently under the Directorate General of Human Settlements, Ministry of Public Works (MPW).

WSTC organizes regular trainings in the following fields:

- (1) Drinking Water, covering 1) management of operations and maintenance, 2) identification of leaks, 3) customer service and marketing, 4) operations and maintenance of electrical mechanics, 5) pumps and generators, 6) piping officers, 7) technical planning of drinking water, 8) monitoring of water quality, and 9) customer service and marketing;
- (2) Sanitation for related district/ municipality government which covers 1) waste handling and management, 2) waste

management planning, 3) design and development planning of final waste disposal, 4) operations and maintenance of final waste disposal, 5) recycling and composting, 6) domestic wastewater treatment, 7) operations and maintenance of integrated waste treatment installations, and 8) urban drainage planning.

WSTC's programs are supported by technical infrastructure and facilities, among which are 1) wastewater analysis: measurement of DO, BOD, COD, pH, temperature, TSS, 2) analysis of characteristics of domestic waste, density, waste composition, moisture content, dust content, volatile content, calorie value, 3) Johkasou (waste management model from Japan), 4) 3R workshop (composting), 5) workshop model of drainage (retention pond), and 6) model of wastewater treatment (RBC, oxidation ditch, activated sludge).

An example of a program that provided on-the-job training for water-leak controllers was for the Regional Water Supply Company (PDAM) of eastern Indonesia.

Table of Institutions of Indonesia - Japan Cooperation in Urban Environment, Water and Sewerage Systems

Ministry/ Institution	Focus	Projects
Ministry of Public Works (MPW)	Water supply master plan	Master Plan on Water Supply System in Jakarta (1963); Master Plan (targeting) 2000 (1972)
MPW, Regional Water Supply Company (PDAM)	Water supply dev.	Water supply in Jakarta (1970s); Upgrading of the existing Pejempongan Treatment Plant (II); Installation of about 550 km of distribution pipelines
MPW, PDAM	Water supply dev.	Water supply in local cities and rural area
MPW, Local Government	Urban environment	Urban Development Plan on Surabaya Metropolitan Area (1983);
MPW, PDAM	Water supply dev.	Buaran Water Treatment Plant (I) (1986-1993); Buaran Water Treatment Plant (II) (1987-1995)
MPW, Local Government	Flood control	Flood control in Jakarta: Western Jakarta Flood Control System Project I, II (1983, 1984); East Jakarta Flood Control Project (1987); Ancol Drainage Improvement Project (1991)
MPW	Solid waste master plan	Master plan and feasibility study for Solid Waste Management System Improvement Project in the city of Jakarta (1987)
MPW, Local Government	Solid waste system	Jakarta Solid Waste Management System Improvement Project (1993 to 2000)
MPW, Local governments	Urban environment	Training of staffs, and establishment of strongholds on urban environment management
MPW	Urban environment center	Water and Sanitation Training Center (1989); Environment Management Center (1992)
MPW	Environment	Environment Monitoring Project (1994-2001)
MPW	Water supply development	Local water supply developments in Sulawesi Island, and East and West Nusa Tenggara provinces
Regional Water Supply Company (PDAM)	Water supply	Water Supply Management Improvement for PDAMs
MPW, Local Government	Drainage	Drainage system improvement in Jakarta
MPW, Local Government	Sewerage	Denpasar Sewerage Development Project
MPW	Environment management	Local Environment Management System Development Project (2002-2006); Capacity Development Project for Local Government on Environmental Management (2008-2011)
MPW	Urban environment	National Spatial Plan 2008; Development Study in Mamminasata Metropolitan Area

14. Preservation of Forests



Indonesia is one of the countries that have the largest forest area in the world. FAO's forestland data presented that Indonesia forest area is about 119 million hectare or about 65% of the country area (FAO, 2010). It is the 3rd size of forest area in the world. Indonesia also has the largest area of mangrove forest, which has one forth of whole world's mangrove forests (18 million hectare). All of the forested area of Indonesia is state-owned that is defined by National Land Agency (BPN).

Before the 2000s, forest resources were seen as an important source of foreign currency revenue next to crude oil and gas. In the end of the 1990s, more than 65% of Indonesia's forest was decided as the production forests for that purpose which consist of production forest (non convertible), limited production forest and convertible production forest (Indonesia Statistics, 1999). However, the remaining conservation forests are still very large, which covers about 40 million hectare in total, including 44 national parks inside. Thus, conservation activities need sustainability and consistently related efforts. On the other hand, Indonesia's forest faces a continuing threat of deforestation and degradation which tend to increase in decentralization era due to discrepancies of treatment among local authorities.

Japan supported this sector such as forest and natural environment conservation, forest related climate change issue, and others. At the beginning, Japanese cooperation was partnered with a government corporation of forestry (PERHUTANI) through establishment of Kalimantan Forest Development Cooperation Company in 1963, which is a co-development on forestry.

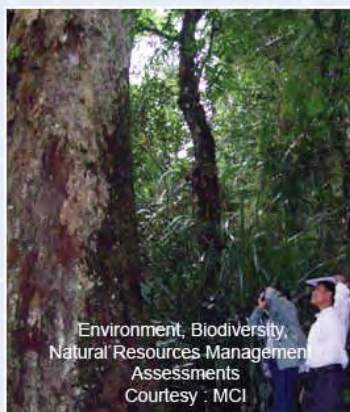
In the 1970s, JICA supported industrial forestation with an eye to sustainable forestry, which formulated forest development studies,

industrial plantation forest development and reforestation. In the 1980s JICA shifted the focus of its cooperation to research on tropical rainforests and forest management in order to reinforce forest preservation.

In the 1990s, the cooperation shifted to mangrove conservation, biodiversity conservation, management of national parks, and prevention of forest fires. It launched cooperation to preserve mangrove forests that had been declining due to aquaculture and other activities. Technical cooperation for managing and preserving Indonesia's diverse flora and fauna was also implemented. This cooperation included improving facilities, equipment, and materials, developing biological specimens, and establishing a database for biodiversity information. JICA also worked to strengthen management in national parks to ensure the preservation of animal and plant habitats. It also started technical cooperation intended to prevent forest fires from 1996.

The forest biodiversity conservation support in Indonesia started from 1993 when Japan and USA agreed 'Common Agenda' of Bilateral Cooperation on tackling global problems. Under this Common Agenda, they agreed to jointly fund a biodiversity center in Indonesia. U.S. was assigned to establish Indonesia Biodiversity Fund and help NGO's activities, while Japan was assigned to provide grant construction of Research Center for Biology (RCB) and technical

assistance for Biodiversity Conservation. The Biodiversity Conservation Project (BCP) developed facility of sample collection in RCB animal section and a management office and research stations in Gunung Halimun-Salak National Park (GHSNP). Since then, many BCP researchers have obtained doctor's degree in Japan.



In the 2000s, the GHSNP management rolled out community-based natural resource management activity. This scheme brought some new experiences on management measures and disseminated throughout all national parks. The experience of community-based management was continued to grass-roots project managed by NGOs.



In regard to Reduce Emission from Deforestation and Forest Degradation in Developing Countries which started its activity from COP13 of UN Framework Convention on Climate Change (2007), Japan decided to provide Climate Change Program Loan, including economic stimulus and budget support according to National Action Plan Addressing Climate Change.

Gunung Halimun Salak National Park (GHSNP)

Established in 1992, GHSNP has the biggest lowland forest in Java island that remains until now. The park is home for 23 species of mammals, at least 2 of them are endemic species and threatened extinct (gibbon and beruban). In the past, the status of area was a natural preserve (sanctuary) from colonial era (1935) to 1992. In the forest that has an area of 113,000 ha there are more than 500 species of flora which are categorized to 266 genres and 93 families, also it is a nest for 200 specieses of bird. There also exists traditional community of Sundanese which lives inside and heavily dependent on forest resource.

National park management for biodiversity conservation and promotion of sustainable natural resource utilization, which JICA supported, left useful lessons and experiences

GHSNP organizes activities of: 1) Consolidating and structuring of park including park borders and zoning, 2) Forest protection and forest fire control that include extension of fire prevention, operations and security patrols, 3) Conservation of biodiversity

and ecosystem including monitoring of key species and permanent plots, 4) environmental services of water and nature tourism, 5) Partnership cooperation and community empowerment.

Conservation is the main competence of this national park as well as other national parks. Besides, GHSNP provides ecotourism which engage community as one of the solutions for forest conservation. It is also one of best fascinating features of the national park.

GHSNP provided cooperation on:

- Lessons-learned on Eco-tourism development in Indonesia and national park management with other countries in Asia and Oceania through a JICA training scheme.
- Green Corridor Initiative (GCI) program, cooperation by Chevron
- Enforcement Ranger Training Course; cooperation by Freeland Foundation.

Table of Institutions of Indonesia - Japan Cooperation in Forest Conservation

Ministry/ Institution	Focus	Projects
Perhutani (Indonesian Government Corporation of forestry)	Forest development and Industry	Infrastructure and Industry Development for Forestry (1960s)
Ministry of Forestry (MOF)	Forest development	Forest development planning study; Study of tropical rain forest in Kalimantan; Forest land development in Sumatra (1970s)
MOF	Forest development and Industry	Industrial Plantation Forest (1975); Forest Development Plan in South Sumatra (1979 - 1992)
MOF	Forest development	Reforestation of Tropical Rain Forest; Research of Tropical Rain Forests (1979 - 1999); Mass-reforestation technology development; Forestry Seed Improvement Plan - Forest tree breeding project, 1992-2002; Tondano watershed management (1990s)
MOF, Research Center for Biology (RCB)	Biodiversity	Biodiversity Conservation Projects (start 1993); Biodiversity Conservation Project Phase 1 (1993-1998); Biodiversity Conservation Project Phase 2 (1998-2003)
MOF	Forest fire control	Forest Fire Prevention Project (1996-2009); Reforestation in national park after forest fire; Community-based forest fire prevention
MOF	Mangrove development	Mangrove Conservation, Mangrove Information Center in Bali (2001-2006); Mangrove management
Gunung Halimun-Salak National Park (GHSNP)	National park management	National Park Management Projects; GHSNP Management Project (2004-2009); Strategy for Strengthening Biodiversity Conservation through Appropriate National Park Management and Human Resources Development (2009-2012); Natural Resource Management Project in the GHSNP, Lebak District Banten Province (Grass-roots), (2009-2011)
MOF, RCB Development Biodiversity	Biodiversity development	Project for Support of Facilities for Biodiversity Collection (2004-2006); Improvement of Collection Management and Research Capacity of the RCB, (2007-2009)
MOF	Forest development	Forest Resources Management through Satellite Image Project (2008)
MOF	Climate Change	Program Loan for Measures against Climate Change; National Action Plan Addressing Climate Change (2008 & 2009)
Center for Forestry Education and Training (CFET)-MOF	Natural resources management	Supplementary Training Program for JICA's Training on Sustainable Natural Resource Management through Japanese System of Natural Park
Center for International Cooperation in Management of Tropical Peatland (CIMTROP), University of Palangkaraya	Carbon budget measurement	Supplementary Training Program for JICA's Training on Capacity Development for Carbon Budget Measurement of Tropical Forests to React Climate Change



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