Indonesia's Development and JICA's Cooperation

Final Report

September 2010

Japan International Cooperation Agency

International Development Center of Japan
Nippon Koei Co.,Ltd.

PREFACE

The Republic of Indonesia and Japan has enjoyed a cordial relationship for a long time. Indonesia has received the largest total amount of the Japanese Official Development Assistance among other countries. For the Republic of Indonesia, Japan has been the largest donor country. Japan has cooperated with the Republic of Indonesia in development for more than 50 years since Japan joined the Colombo Plan in 1954. The Republic of Indonesia continues to do her best for development, and has shown a favorable economic growth. She is now a member of G20, enhancing her international presence.

This study has reviewed and identified the long-term trends and characteristics of the JICA's cooperation for over 50 years. This is our new attempt, because this study tries not to review the individual project but to make clear the long-term strategy, which has been changed along with the issues that Indonesia faced from time to time.

JICA has commissioned the implementation of this study to a consortium of International Development Center of Japan (IDCJ) and Nippon Koei Co., Ltd. The consortium has organized a study team led by Dr. Jinichiro Yabuta of IDCJ. The team has undertaken the study and prepared this report during the period from January to September in 2010. The study has not exhaustively reviewed each cooperation project, because this study intended to understand the overall trends of the cooperation.

I do hope that this report will serve as an informative document on the history of the Indonesia-Japan cooperation, as well as a useful reference for the cooperation in the future.

Lastly, I would like to acknowledge that the study has been completed with the support from many people of Indonesia, Japan and elsewhere. Let me express my deepest thanks to every one of them.

September 2010

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List of Abbribiations

(Abbribiation – *Indonesian* – English)

ADB:	Asian Development Bank
ASEAN:	Association of South‐east Asian Nations
AusAID:	Australian Agency for International Development
BAKORNAS-PB:	*Badan Koordinasi Nasional Penanganan Bencana* National Coordinating Agency for Disaster Management
BALAI POLMAS:	*Balai Perpolisian Masyarakat* Community Policing Center
BAN-PT:	*Badan Akreditasi Nasional Perguruan Tinggi* National Accreditation Agency for Higher Education
BAPPEDA:	*Badan Perencanaan Pembangunan Daerah* Regional body for planning and development
BAPPENAS:	*Badan Perencanaan dan Pembangunan Nasional* National Development Planning Agency
BKKBN:	*Badan Kordinasi Keluarga Berencana Nasional* National Family Planning Coordination Board
BKPM:	*Badan Koordinasi Penanaman* Modal Investment Coordinating Board
BKPM:	*Balai Kemitraan Polisi dan Masyarakat* Police and Community Partnership Center
BMKG:	*Badan Meteorologi Klimatologi dan Geofisika* Meteorology, Climatology and Geophysics Agency
BNPB:	*Badan Nasional Penanggulangan Bencana* National Agency for Disaster Management
BOS:	*Bantuan Operasi Sekolah* School Operational Assistance
BOT:	Build-Operate-Transfer
BPJT:	*Badan Pengaturan Jalan Tol* Toll Road Authority
BPPT:	*Badan Pengkajian dan Penerapan Teknologi* Agency for Assessment and Application of Technology
BPS:	*Badan Pusat Statistik* Central Statistics Agency
BRI:	*Bank Rakyat Indonesia* People's Bank of Indonesia
BULOG:	*Badan Urusan Logistik* National Food Logistic Agency
C/P:	Counterpart
CDM:	Clean Development Mechanism
CEP:	Community Enpowerment Program
CEVEST:	Center for Vocational and Extension Service Training
CGI:	Consultative Group on Indonesia
CLMV:	Cambodia, Laos, Myanmmer, Vietnum
CNS/ATM:	Communication, Navigation and Surveillance/Air Traffic Management
COP13:	13th Conference of the Parties
CRIFI:	Central Research Institute for Fisheries
DAC:	Development Assistance Committee (OECD)
DCD:	Development Co-operation Directorate (OECD)
DGAC:	Directorate General of Air Communications
DGRI:	Directorate General of Regional Infrastructure, Ministry of Settlements and Regional Infrastructure
DHS:	Demographic and Health Surveys
DPD:	*Dewan Perwakilan Daerah* Regional Representatives Council
DPL:	Development Policy Loan
DUWRMT:	Dissemmination Unit of Water Resources Management and Technology

E/S:	Engineering Service
EEPIS:	Electronic Engineering Polytechnic Institute of Surabaya
EPA:	Economic Partnership Agreement
EU:	European Union
F/S:	Feasibility Study
FAO:	Food and Agriculture Organization of the United Nations
GATT:	General Agreement on Tariffs and Trade
GBHN:	*Garis-garis Besar Haluan Negara* Outlines of the State Policy
GDP:	Gross Domestic Product
GNP:	Gross National Product
Golkar:	*Golongan Karya* Functional Groups
GRDP:	Gross Regional Domestic Product
HEDS:	Higher Education Development Support Project
HELTS:	Higher Education Long Term Strategy
HPH:	*Hak Pengusahaan Hutan* Logging Concessions
ICAO:	International Civil Aviation Organization
IDA:	International Development Assoaciation
IDHS:	Indonesia Demographic and Health Survey
IETC:	Indonesia Export Training Center / PPEI: *Pusat Pelatihan Ekspor Indonesia*
IGGI:	Inter-Governmental Group on Indonesia
ILO:	International Labour Organization
IMF:	International Monetary Fund
IMO:	International Maritime Organization
IMR:	Infant Mortality Rate
IMSTEP:	The Project for Development of Science and Mathematics Teaching for Primary and Secondary Education
INPRES:	*Instruksi Presiden Republik Indonesia* Indonesian Presidential Instruction
IPM:	Integrated Pest Managemen
IPP:	Independent Power Producer
ITTA:	International Tropical Timber Agreement
ITTO:	International Tropical Timber Organization
ITU:	International Telecommunication Union
IUCN:	International Union for Conservation of Nature
JBIC:	Japan Bank for International Cooperation
JICA:	Japan International Cooperation Agency
JJC:	Jakarta Japan Club
JOCV:	Japan Overseas Cooperation Volunteers
JOICFP:	Japanese Organization for International Cooperation in Family Planning
JPKM:	*Jaminan Pemeliharaan Kesehatan Masyarakat* Community Medical Services Insurance
KADIN:	*Kamar Dagang dan Industri Indonesia* Indonesia Chamber of Commerce and Industry
KFW:	*Kreditanstalt für Wiederaufbau* Reconstruction Credit Institute
KIMPRASWIL:	*Departemen Permukiman dan Prasarana Wilayah* Ministry of Settlement and Regional Infrastructure

KPPTJP:	*Kerangka Pengembangan Pendidikan Tinggi Jangka Panjang* Framework of Long Term Higher Education Development:
KPPU:	*Komisi Pengawas Persaingan Usaha* Commission for the Supervision of Business Competition
KUD:	*Koperasi Unit Desa* Village Cooperative System
LIPI:	*Lembaga Ilmu Pengetahuan Indonesia* Indonesian Institute of Sciences
LNG:	Liquefied Natural Gas
M/P:	Master Plan
MIC:	Mangrove Information Center
MIDC:	Metal Industry Development Centre
MKK:	*Model Kampung Konservasi* Model Conservation Village
MMC:	Mangrove Management Center
MMTC:	Multi Media Training Center
MOF:	Ministry of Finance
MPR:	*Majelis Permusyawaratan Rakyat* People's Consultative Assembly
MRT:	Mass Rapid Transit train system
N/A:	Not Applicable
NAFED:	National Agency For Export Development
NEITWC:	National Earthquake Information and Tsunami Warning Center
NGO:	Non Governmental Organization
NZAID:	New Zealand's International Aid & Development Agency
O&M:	Operation and Maintenance
ODA:	Official Development Assistance
OECD:	Organisation for Economic Cooperation and Development
OECF:	Overseas Economic Cooperation Fund
OJT:	On the Job Training
OPMC:	Outside Plant Maintenance Centers
OTCA:	Overseas Technical Cooperation Agency
PDIP:	*Partai Demokrasi Indonesia-Perjuangan* Indonesian Democratic Party of Struggle
PELITA:	The Program for Enhancing Quality of Junior Secondary School Education
PHC:	Primary Health Care
PHRDP:	Program for Human Resource Development
PKK:	*Pembinaan Kesehjeteraan Keluarga* family welfare movement
PLSD:	Participatory Local Social Development
PMU:	Project Management Unit
POLMAS:	*Perpolisian Masyarakat* Community Policing
POLPOS:	Police Post
PPA:	Power Purchase Agreement
PPP:	Public Private Partnership、
PROPENAS:	*Program Pembangunan Nasional* National Development Program
PTT:	Posts, Telegraphs and Telephones
PU:	*Departemen Pekerjaan Umum* MInistry of Public Works
PUCK:	*Departemen Pekerjaan Umum, Cipta Karya* Ministry of Public Works Directorate General of Human Settlements

QC:	Quality Control
R/D:	Record of Discussion
RBO:	River basin Organization
REDD:	Reduced Emissions from Deforestation and forest Degradation
REDIP	Regional educational development and improvement program
REPELITA:	*Rencana Pembangunan Lima Tahun* Five Year Development Plan
RETPC:	Regional Export Training and Promotion Centers / P3ED: *Pusat Pelatihan dan Promosi Ekspor Daerah*
RPJM:	*Rencana Pembangunan Jangka Menengah* Medium Term Development Plan
RRI:	*Radio Republik Indonesia* Indonesian Republic Radio
SAPI:	Special Assistance for Project Implementation
SEED-Net:	Southeast Asia Engineering Education Development Network
SIAP:	Strategic Investment Action Plan
SISDUK:	*Sistem Dukungan* Local Village Community Development Support System
SISTTEMS:	Strengthening In-Service Teacher Training of Mathematics and Science Education at Junior Secondary Level
SPL:	Sector Program Loan
STC:	Sabo Technical Center
STMDP:	The Science and Technology Manpower Development
SV:	Senior Volunteer
TA:	Technical Assistance
TFR:	Total Fertility Rate
TVRI:	*Televisi Republik Indonesia* Indonesian Republic Television
UNCTAD:	United Nations Conference on Trade and Development
UNDP:	United Nations Development Programme
UNEP:	United Nations Environment Programme
UNESCO:	United Nations Educational, Scientific and Cultural Organization
UNFPA:	United Nations Population Fund
UNICEF:	United Nations Children's Fund
USAID:	United States Agency for International Development
VSTC:	Volcanic Sabo Technical Centre
WB:	World Bank
WHO:	World Health Organization

Executive Summary

Japan has continuously been participating in the development of Indonesia for about 50 years. For Indonesia, Japan has been the largest donor country. Also for Japan, Indonesia has been the largest recipient country. Indonesia's development represents significant efforts by the Indonesian people. At the same time, Indonesia's development should have been limited without the support from development partners, including Japan. Japan's cooperation has been trying to effectively respond to the changing needs of Indonesian development.

1. Nation Building in a Historical Perspective

We understand that the nation building process in Indonesia has involved the building of nation-state, development-state and democratic-state in sequence.

(1) Building a "Nation-state" to Unify the Vast Population

Establishment of a nation state was the highest priority in early days of post independence. For that purpose, it was necessary to promote solidarity among people and develop the physical infrastructure networks nation-wide for the people inhabiting the diverse islands. The national language, *Bahasa Indonesia*, was emphasized as the most important element of consolidating Indonesian people, so that people in different islands could communicate among others. Different locations were connected through the infrastructure networks such as road, railway, broadcasting and telecommunication.

At this historical stage, major issues for the nation building were:

1) To create solidarity among the Indonesian people and develop the Indonesian society

2) To strengthen infrastructure networks

(2) Building a "Development-state" to Ensure Food, Job and Stability

During the time when the Asian political environment was not yet stable, Indonesia could maintain unity only with economic and social stability. For the sake of stability, it had to ensure food and job for growing population. A "development state" was thus created.

The First Five-Year Development Plan stated that agriculture was not only a priority sector but also the central issue of the national development. Indonesia has been endowed with a full range of natural resources such as minerals, forest, marine resources and tourism resources. Indonesia was

sustaining its economy by exporting these natural resources and importing the goods necessary for development.

However, the national economy needed to be less dependent on the export of oil and gas, since the oil glut began in 1982. Thus, an increasing attention was paid to manufacturing sector and, in turn, foreign direct investments. Just then, Plaza Accord in 1985 coincidentally encouraged many Japanese manufacturers to expand investments in Southeast Asian countries, including Indonesia.

At this stage, major issues for the nation building were:

3) To increase job opportunities and food production

4) To diversify economic structure

5) To improve living standards

(3) Building a "Democratic-state": A New Challenge

Under structural changes in the domestic economy and the globalizing international economy, the national economy changed from state-led to market-based and the government regime changed from a centralized to a democratic one. The development-state eventually collapsed, when Indonesia was heavily hit by the Asian currency crisis in 1997. Initiatives were, then, taken to accelerate democratization, decentralization and transparency. Democracy is indispensable to the market economy that is transparent and just. With the democracy, Indonesia has been realizing the innovation, which calls for free speech, a secure and rules-based investment climate and the society without corruption.

At this stage, a major issue for the nation building was:

6) To strengthen market economy, democracy and civil society

2. Achievements of Indonesia-Japan Cooperation

Japan has continuously and timely responded to the changing needs of Indonesia, in accordance with the stage of nation building.

Japan's cooperation has been provided primarily to the government of Indonesia. The cooperation has been not only effective within the government, but also playing a pump-priming role in stimulating investments, productive activities and job opportunities in the private sector. Consequently, close and stable relations have been maintained between Indonesia and Japan for a long period of time. Thus, the Indonesia-Japan

cooperation has led been conducive to economic progress and a stable international environment of the Asia-Pacific Region as well.

One can discuss the achievements of Indonesia-Japan cooperation in terms of (1) nation-building, (2) capacity development in the nation building, and (3) deepening Indonesia-Japan relationship.

(1) Cooperation for Nation-building

A. Contribution to Stability of the Country

Japan supported Indonesia in managing the macro economic and financial balance, international balance of payment in particular, when Indonesia was under crisis. A major means of support was a series of commodity loans to support balance of payment in early days and to support sector programs and development policies later. The first major crisis was the economic turmoil during the period of the transition from the Sukarno administration to the Suharto administration. Second crisis was the oil glut in the middle of the 1980s. The third one was the Asian currency crisis in1997-98.

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On normal basis, the cooperation has been continuous in developing infrastructure, human resources and managerial capacity. It has thus encouraged the Indonesian private sector to grow steadily. In fact, the Indonesia-Japan cooperation has been a combination of the focused support for stability at the time of crisis and the broad support for continuous development.

For national stability, food security was as important as economic and financial stability. Japan continuously supported the efforts of Indonesian government in attaining food self-sufficiency through irrigation, research and extension. Support was also extended to the research and extension in livestock and fishery, in response to the food life improvement.

Human resource is a base of the society. In the 1960s, the infant mortality rate was high and there were infectious diseases spread. The government paid a great attention to the development of medical infrastructure and public health service. At the same time, population pressure was a hard-core issue.

Japan supported family planning and health improvement, with a special stress on maternal and child health, production and distribution of vaccine and clean water supply.

In Indonesia, natural disasters such as earthquake, tsunami, flood and forest fire has been a major threat to people's life and the national stability. Japan has contributed to reducing damages through emergency relief, including the one in Aceh damaged severely by tsunami. In addition, Japan contributed to reducing potential damages through prevention measures based on the inherent experience of Japan, which has also suffered from a variety of natural disasters. Major cases of the prevention measures include sand erosion control at Mt. Merapi, the organizing of volunteer companies for fighting against forest fires, establishment of early warning systems against tsunami and other disasters.

B. Contribution to Strengthening Economic and Social Bases of the Country

Infrastructure networks are essential, particularly to the islands of Indonesia, not only as a base for private sector development but also as a means to deliver administrative services all over the country. Japan has responded to the Indonesian situations of infrastructure need. In fact, infrastructure development has been a largest part of Indonesia-Japan cooperation. Typical cases for transportation include Trans-Sumatra Highways, express highways and railways in Jakarta Metropolitan Area, airports in Bali, Padang, Palembang and Surabaya and Sumatra-Java Ferry System. Those for telecommunications include the inter-island telecommunication network such as coastal radio communication and marine cables. In the power sector, power generation plants with Japanese ODA loans represent nearly 25% of the total generation capacity of the plants developed by PLN as of 2008, according to the OECD / IEA statistics and PLN's data.

Natural resource development was triggered partly by Japan's cooperation. Consequently, Indonesia increased foreign currency earnings and Japan stably purchased oil &gas from Indonesia, with a result of intensified economic interactions between the two countries. Major cases were large-scale exploration and production of oil and gas in North Sumatra and East Kalimantan.

The development of the infrastructure network and natural resources has paved the way to private investments as well as to the national stability. In this regard, a key has been the Dialogue on Investment Climate arranged by Jakarta Japan Club. Based on the dialogue, investors from Indonesia and Japan inform their wishes for the investment policies of the Indonesian government as well as the Japanese government.

While, the nation building requires the establishment of institutional and organizational frameworks, equally important is to make the institutions and organizations operational through training and managerial improvement at the practical level. Japan has participated in the

institutional and organizational development with special attention to making things to be operational and on-the-job training. Some of such examples are training institutions for multi-media training, water supply and environmental sanitation, trade business and volcanic sand erosion control.

Under the Indonesia-Japan cooperation, training has been an indispensable component even in the projects that do not primarily intend for human resource development. Some cooperation projects have enabled new consulting firms and contractors to be established by engineers and specialists trained in the cooperation projects, such as the Jakarta toll roads development, a master plan study for electricity development, the Trans-Sumatra Highway Development and the Brantas River Basin Development.

Japan has not only transferred technologies but also supported the Indonesia's own capacity for research and development (R & D). The R&D on its own, is a basis of self-reliance.

There are a number of cases in which R&D and higher education were strengthened. A typical case has been the R&D for improved varieties of forest trees. Partly with the Japanese cooperation, this subject has attracted a greater policy attention in sustaining natural resources and contributing to global environmental preservation. Major examples are support to Bogor Institute of Agriculture (IPB) that is now a leading agricultural university in Indonesia, the Electronic Engineering Polytechnic Institute of Surabaya (EEPIS), which is now internationally active, the Forestry Seedling Center which provides the forestation nation-wide with seeds under the Ministry of Forestry, and eleven engineering faculties in Sumatra and Kalimantan under the Higher Education Development Support (HEDS) Project.

C. Contribution to Democratization and Decentralization

In the 2000s, Indonesia went through the process of democratization and decentralization in a full-fledged manner. New institutional arrangements were rapidly made, partly by drawing on external expertise.

Japan gave an emphasis on making new institutional framework to be operational and facilitating the government officials at the technical level to develop their way of thinking along with democracy and decentralization. Reference was sometime made to relevant Japanese experiences in that Japan itself went through the process of democratization and decentralization for development.

For example, technical cooperation was extended to tailoring the local police activities to meet community needs, in response to a major policy change in the role of police from maintaining national security to defending people's

safety. In response to the national policy to decentralize the administration for school education, technical cooperation was provided to strengthen the capacity of schools and communities to manage education at the local level in pilot areas. Practice in the pilot areas is now replicated in many other parts of the country. According to provincial as well as national policy to strengthen the capacity of communities and local governments to plan and implement projects, Indonesia and Japan enhanced the cooperation for rural development projects for poverty reduction. In South Sulawesi, a prototype was established for the process of preparing and approving community plans and sharing project cost among administrative bodies at different levels.

(2) Cooperation for Capacity Development in Nation Building

Continuity, integrated approach and the respect of ownership are some of the characteristics of Indonesia-Japan cooperation. Regardless of its objective and sector, these characteristics have led to developing the Indonesia's own capacity to plan and implement policy.

Since the 1970s, continuity has been a key notion of Indonesia-Japan cooperation, particularly in infrastructure development. The continuity has made the Japan's cooperation highly predictable. Partly with the predictability, the Indonesian government has been able to think ahead from the long-term point of view. In addition, efficiency has been maintained in the implementation of programs and projects, because the cooperation in one project has often been followed by another project. This cycle has made it easier for the Indonesian government to continuously have the project personnel and equipment available not only for implementation but also maintenance. The continuity has accompanied itself with conceptual consistency. International aid philosophy stressed market economy in some instances and poverty reduction in other instances. While Japan has fully kept in mind the international aid philosophy, it has endorsed a concept of "nation building" as a basis of the cooperation with Indonesia.

Integrated approach is another feature of Japan's cooperation. A series of projects for regional development planning has raised awareness, among Indonesian government planners, about the inter-sectoral planning for a particular region from the long–term point of view. This idea has been made use of by BAPPENAS in working out programs on the basis of not only sector but also region. The integrated approach was applied to identifying projects under the Indonesia-Japan cooperation. Many projects were identified based on master planning. Implementation of such projects involved the training of the project staff, which would pave the way for another project.

In addition, the respect of ownership should be pointed out as a main feature of Japan's cooperation. Indonesia-Japan cooperation has not intended to one-sidedly introduce Japanese experience or Japanese method to Indonesia. It has stressed on creating situation-specific approaches based on the

realities and working together at the field level. In other words, it has respected the ownership, wisdom and views of Indonesia. Such approach is often replicable to other sectors or regions. In fact, newly developed approaches or method for development are often applied to other projects under the Indonesia-Japan cooperation.

(3) Deepening Indonesia-Japan Relationship

The cooperation between Indonesia and Japan on official basis has contributed to the expansion of the relations between the two countries at the private level. In early days of cooperation, it has contributed to the trade expansion in terms of energy export from Indonesia to Japan and manufacturing export on the other way around.

Subsequently, it has contributed to the expansion of investment and employment. It is generally believed that private investments have been accelerated by the continuous official cooperation in infrastructure and human resource development.

Another contribution, particularly through technical cooperation, to the Indonesia-Japan relations has been the values and attitudes toward works, such as discipline, efficiency, mutual learning of the Indonesian and the Japanese the coordination at the middle level, respect of traditions and teamwork. Collaborative work, training and advice in cooperation projects have provided rich opportunities for the mutual learning at the field level in the private sector as well as the government sector.

3. Conclusion

Since independence, Indonesia has experienced a continuous nation building process. The process has accompanied the transitions from a centrally managed society to a democratic society and those from a government-led economy a market-based economy. It is in this context that Japan has continuously, timely and effectively responded to and followed up the nation building process in the past 50 years.

Indonesia-Japan cooperation has been important in not only Indonesian context but also international context, since the democracy and development of Indonesia have profound implications for the ASEAN economy, Indonesia-Japan bi-lateral relationship and a stable international community.

According to our study, the cooperation so far has accumulated a plenty of valuable lessons and the understanding among the people on both sides. These lessons and understanding should be an important asset for a broader cooperation between the two countries.

1. An Overview of Indonesia-Japan Cooperation

1.1. Nation Building Process of Indonesia

Indonesia is a republic country in Southeast Asia. The land area of territory is 1.9million km2. It extends to east and west within 5,110 km. It consists of more than 17,000 islands, the largest number in the world. Of these islands, approximately 9,000 of them are inhabited by 230 million people in 2008 with different ethnics and religions. “Unity in diversity” is a nation’s motto.

1.1.1. Building in a HistoriNation cal Perspective

Based on a review of prevailing literatures on socio-economic changes in Indonesia, we understand that the nation building process in Indonesia has involved the building of nation-state building, development- state and democratic- state in sequence.

(1) Building a “Nation-state” to Unify the Vast Population

Establishment of a nation state was the highest priority upon independence of the country. For that purpose, it was necessary to promote solidarity among people and develop the physical infrastructure networks nation-wide for the people inhabited over different islands. The national language, Bahasa Indonesia, was emphasized as the most important element of consolidating Indonesian people, so that people in different islands could communicate among others. Different locations were connected through the physical networks such as road, railway and telecommunication.

At this historical stage, major issues for the nation building were:

1) To create solidarity in Indonesian people and develop Indonesian society

2) To strengthen infrastructure networks

(2) Building a “Development-state” to Ensure Food, Job and Stability

A country cannot maintain unity without economic and social stability. For the sake of stability, Indonesia had to ensure food and job security for growing population. The first national five-year development plan stated that agriculture is not only a priority sector but also the central issue of the national development.

Indonesia has been endowed with a full range of natural resources such as minerals, forest, marine resources and tourism resources. Indonesia was sustaining its economy by exporting these natural resources and importing the goods necessary for development.

However, the national economy needed to be less dependent on the export of oil and gas, since the oil glut began in 1982. Thus, an increasing attention was paid to manufacturing sector and, in turn, foreign direct investments. Plaza Accord in 1985

coincidentally encouraged many Japanese manufacturers to expand investments in Southeast Asian countries, including Indonesia.

At this stage, major issues for the nation building were:

3) To increase job opportunities and food production

4) To diversify the structure of oil-dependent economy

5) To improve living standards

(3) Building a “Democratic-state”: A New Challenge

A favorable economic growth kept the country from being destabilized. However, disparities were intensified between the majority and a privileged few with vested interests. Development-state eventually collapsed, when Indonesia was heavily hit by the Asian currency crisis in 1997. Initiatives were, then, taken to accelerate democratization, decentralization and transparency.

At this stage, a major issue for the nation building was:

To strengthen market economy, democracy and civil society

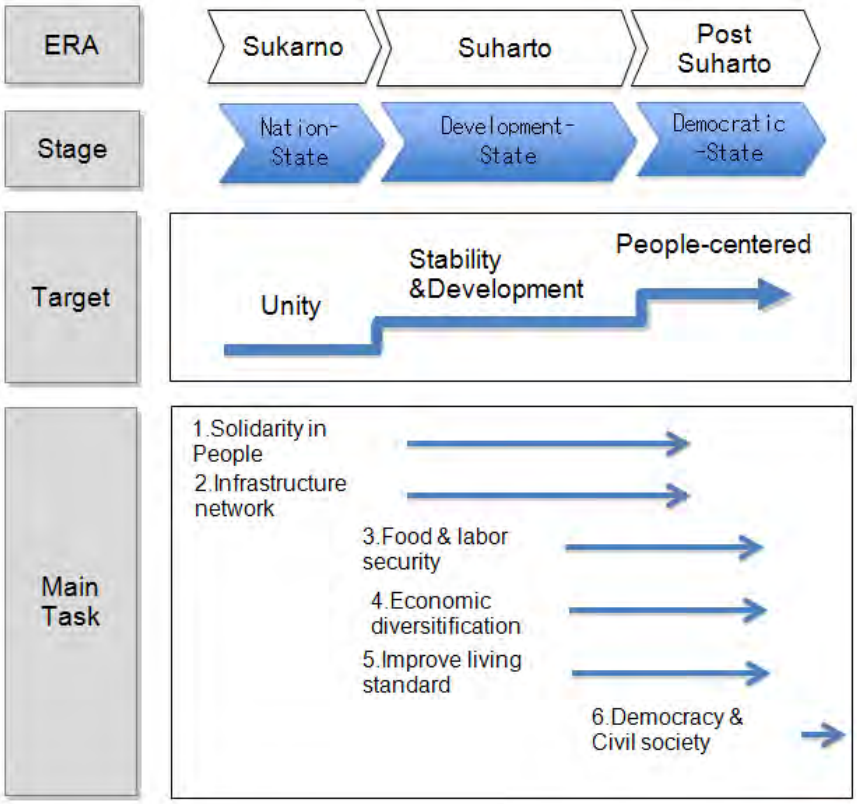


Figure 1-1 Nation Building Process of Indonesia

What follows is an elaboration of the issues for nation building above.

To create solidarity in Indonesian people and develop Indonesian society

Before independence, the colonialisms did not allow many people to get access to opportunities for education. Primary education based on *Bahasa Indonesia* was the most important task to foster the awareness to a unified nation. Upon independence, primary school enrolment rate was only 21.17%. The rate was improved thereafter, and compulsory education was enforced in 1984. The rate has reached almost 100%. Adult illiteracy declined from 39.1% in 1969 to 7.6% in 2006.

Improvement was also remarkable in health sector with the development of public health services. Life expectancy increased from 45.7 to 70.5 between 1967 and 2008. Infant mortality rate declined from 125 per 1000 persons to 26 per 1000 persons.

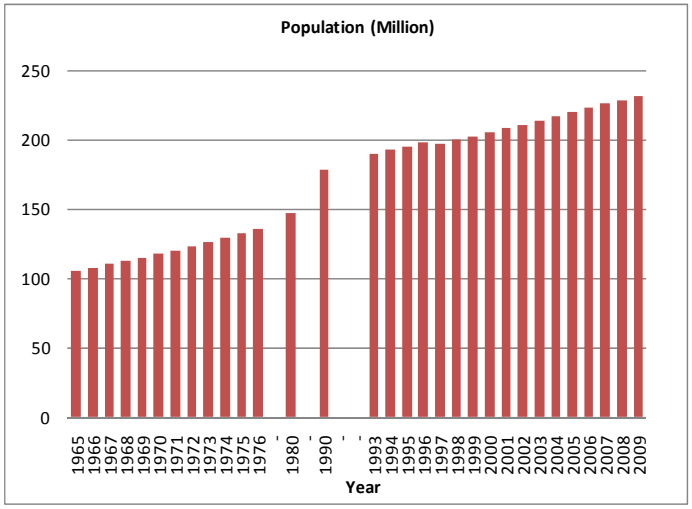


Figure 1-2 Population of Indonesia

To strengthen infrastructure networks

Development of networks of transportation and communications has made it possible for the country to form a self-reliant economy and unified administrative systems. A total road mileage increased by 5 times from 84,297km to 421,535km between 1970 and 2007. Number of vehicles, including motorcycles, increased by 39 times from 1.5 million in 1973 to 57.7 million in 2007. A total railway mileage increased from 334 million km to 2,227 million km between 1972 and 2009.

For telecommunications, a state telecom enterprise and a state broadcasting enterprise were established in 1964. Expansion of communication networks was rapid since then.

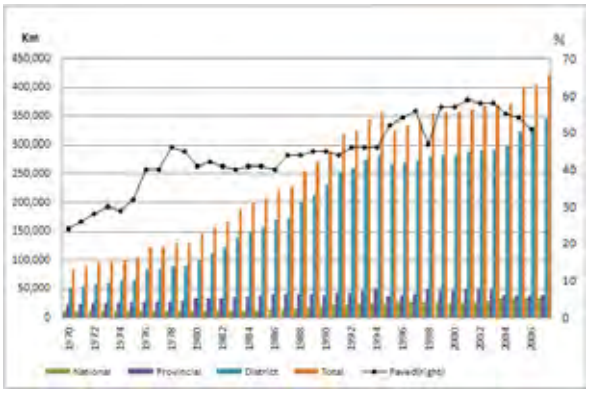


Figure 1-3 Total Road Mileage and Proportion of Paved Roads

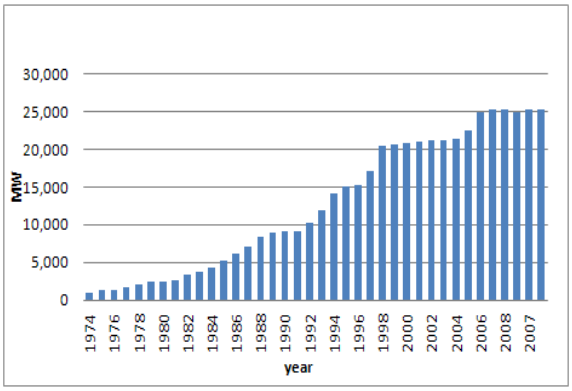


Figure 1-4 Electric Generation Capacity

To increase job opportunities and food production

Food supply was the top priority issue in Indonesia with a large and increasing population. Agriculture was important in that sense.

Another critical issue was to ensure job opportunities for the large and increasing population basically through economic growth. The country was successful in

maintaining the unemployment rate at 1 to 3 % until 1994. It sustained a real rate of economic growth rate at 5.4% a year during the period between 1976 and 2008, whereas population increased from 135 million to 229 million and labor force increased from 76 million to 168 million during the same period.

However, the unemployment rate was in the range of 8 to 10 % after 2000, due to changes in political and economic structures. A growth rate at about 7 % a year would be necessary to recover the unemployment rate up to the level once attained before the 2000s.

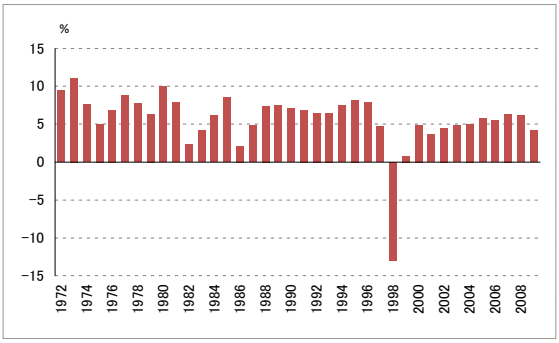


Figure 1-5 Annual Rate of Real Economic Growth

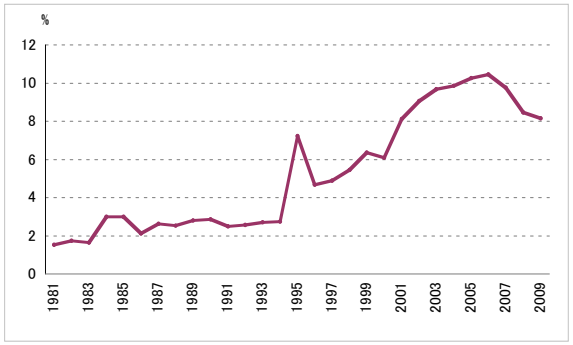


Figure 1-6 Change in Unemployment Rates

To diversify the structure of oil-dependent economy

National economic structure changes to a great extent. Production structure changed from predominantly agricultural based to a more balanced with greater proportion of manufacturing and service sectors. Consumption structure changed from consumption-based to more capital-formation-based. Manufactured goods were increasingly major export item and fuels were increasingly major import item. The shift from agriculture to non-agriculture was remarkable in the sector-mix of employment as well.

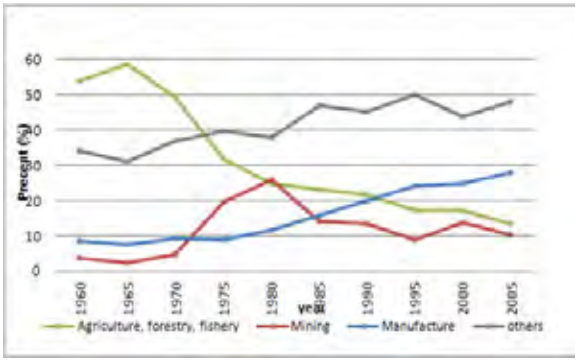


Figure 1-7 Changing GDP-Mix: %

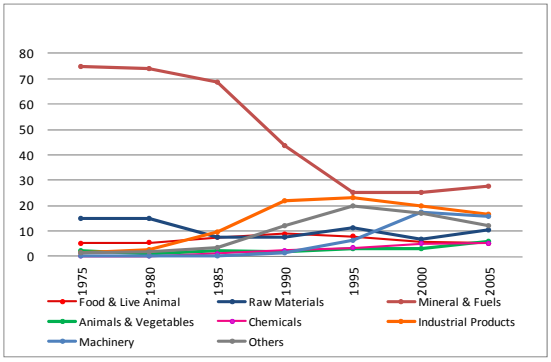


Figure 1-8 Change in Export Structure: %

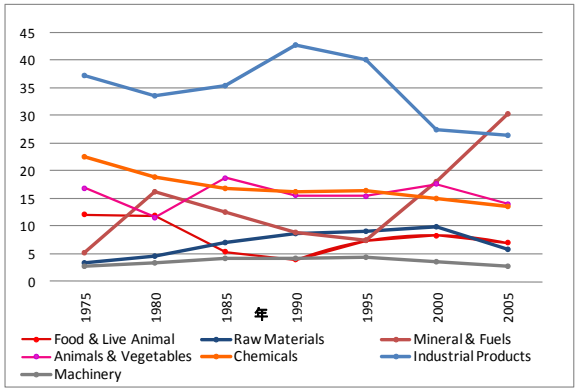


Figure 1-9 Change in Import Structure: %

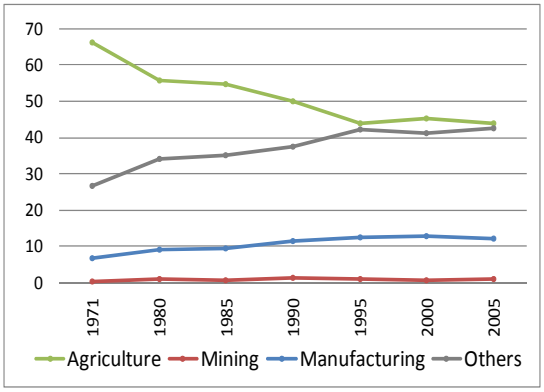


Figure 1-10 Change in Labor Structure: %

To improve living standards

Living standards increased, as a result of sustainable economic growth, employment expansion, a declining rate of population increase and the continuing government policy to ensure basic needs of the people all over the country. GDP per capita increased from US$ 70 in 1969 to US$ 1,000 in 1999 and US$ 1,982 in 2008. The population below poverty line decreased from 54 million or 40 % of total population in 1976 to 23 million or 12 % in 1996. It increased again with the economic crisis in 1998, but reversed the trend again to decrease until now.

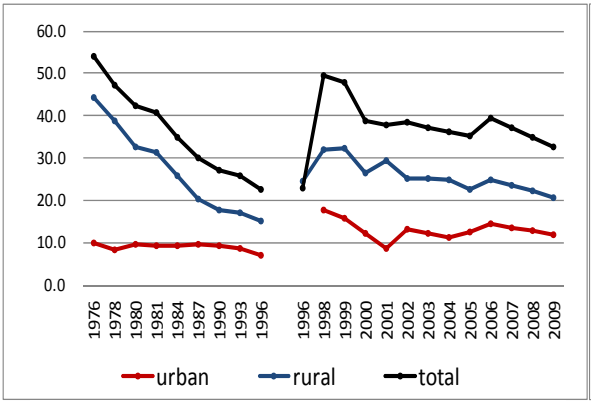


Figure 1-11 Number of Household in Poverty: million household

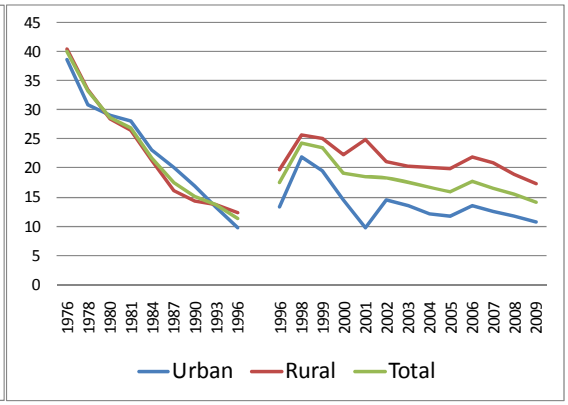


Figure 1-12 Change in Poverty Rate: %

Note: There was a change in data collection methodologies in 1996

To strengthen market economy, democracy and civil society

Since the late 1990s, the national economic system changed from state-led to market-led. Governance changed from centralized to democratic. Democratic society is indispensable for a transparent and just market economy. Without democracy, one cannot expect the innovation, which needs free speech, a secure investment climate which is based on rules and the society without corruption. The Asian currency crisis triggered the national economy to be transparent and just. It also pushed the way of managing development to change from centralized to democratic. Administration changes peacefully after President Suharto resigned. However, decentralized administration are still in the developing process.

1.1.2. Summary of Five Year Development Plans

In Indonesia, development has been guided by a series of five-year development plans for national development. The following table attempts to summarize the five-year plans.

Table 1-1 Summary Table of Five Year Development Plans

Period	Background	Policy	Priority
REPELITA I 1969-74	• Quick economic recovery • Difficult balance of payment	• Economic liberalization, rehabilitation and stabilization	• Agriculture, infrastructures, basic manufacturing and oil & gas production • Agro-industrial linkages • Network development of infrastructures • Family planning
REPELITA II 1975-79	• Employment expansion through growth	• From stabilization to growth	• Import of capital goods rather than consumption goods • Labor intensive industries • Food production , rice self-sufficiency, rural employment • Export-oriented consumption goods industry • Resource development for foreign exchange earnings • Power, transportation and communications • Family planning
REPELITA III 1980-84	• Growth with fair distribution and stability • Relative decline in agriculture and mining, and relative increase in manufacturing, construction, transportation and communication	• Food self-sufficiency and labor intensive industries • Challenge for structural changes for sustainable growth.	• Import substitution industries for foreign exchange savings • Agricultural development as a basis of food production, employment expansion, raw material supply and foreign exchange earnings • Infrastructures
REPELITA IV 1985-89	• Sustainable growth • Distribution • Overcoming oil glut	• Change in industrial structure to be less oil-dependent and more labor intensive	• Agricultural strengthening and irrigation for employment, export, farm household income and regional development • Industrial equipment, cement and textiles • Industrial linkage • Inter-regional linkages through transportation and communications
REPELITA V 1990-94	• Longer-term development for 25 years • Employment expansion	• Balanced economic structure • Regional development on archipelago concept through financial transfers to regions	• Relative increase in non-agricultural activities • Export diversification and investment in non-oil sectors • Manufacturing as a lead industry for growth and employment • SME development • Agro-processing • Tourism and cultural development • Expansion and maintenance of infrastructures
REPELITA VI 1995-99	• Human resource development for growth	• GDP per capita to reach US$1000 in 1999 • Population growth rate to reduce to be 1.51% in 1998 • Export industries • Agro-industrial linkages • Service activities to support production sector	• Non-oil & gas sectors, including agro-processing, metal, chemical and machine • SMEs • Development and maintenance of infrastructures • Tourism
PROPENAS 2000-04	• Establishing new political and economic systems after Suharto regime • Five challenges: 1Weak national unity and intensified internal struggles 2. Limited attention to rules and human rights 3.Slow economic recovery 4.Declining level of social welfare 5.Lagging regional and community development	• Economic growth rate at 6-7%, Unemployment rate at 5% or less, inflation rate 3-5% and population below poverty line at 14 % or less • National unity under democratization • Rule of law and good governance • Economic system for the people • Economic development in line with globalization and decentralization	Seven programs: 1.Poverty reduction 2.SMEs 3.Financial and economic stabilization and export expansion 4.Competitiveness in non-oil & gas sectors 5.Capital market development to attract FDIs 6.Infrasturcture development 7.Management of environment and natural resources
RPJM 2005-09	Economy is growing, but problems remained in efficient and rational resource allocation: • Intensifying disparities • Limited resilience against external and internal shocks due to weakness in coordinated policy management • Need to explore new sources of growth	• Quality of education and life • Reduction of regional disparity • De-bottlenecking process of infrastructure development	• Poverty reduction • Investment abroad • Export expansion • Industrial competitiveness • Agriculture development • Macro-economic stabilization

1.1.3. Nation Building in Different Periods

We understand that the nation building process of Indonesia consists of the following periods:

- The 1960s: Nation building
- The 1970s to the earlys1980s: Development
- The late 1980s: Adjustment
- The 1990s: Growth until the currency crisis
- The 2000s: Institutional reform

Table 1- 2 Major Events in the World and Japan by Eras

		60s	70s to - early 80s	Late 80s	90s(before currency crisis)	90s (after currency crisis) to 2000s
Global Trend	Politics and Economy	Cold war Vietnam war ASEAN inauguration	Detante Japan-China normalization Oil crisis	Sluggish crude oil prices Plaza Accord	Termination of Cold War Asian financil crisis	September 11 attacks and anti-terrorist measures High resources price period
	Assistance Trend	Infrastructure investments and growth ADB establishment	Sufficiency of BHNs Institutional building Structural adjustment plan	Market-oriented economy	Global environmental issues	MDGs Poverty reduction Stress on governance
Japanese Trend	Asian Policy	Export promotion	Inroading into Southeast Asian markets Developmental import	Formation of manufacturing base for exporting to advanced nations	Formation of regional division of labor	East Asian community framework
	ODA policies	From postwar compensation to reciprocal cooperation	Expansion tone Stress on infrastructure and ASEAN	World largest donor	ODA Charter	Continuous reduction tone Increase of soft component Stress on Middle East and Africa

(1) The 1960s: Nation building: Toward collaboration with the international community

Upon independence, the Sukarno administration started with nationalization of colonial enterprises. However the lack of managerial capacity in the country resulted in a large budget deficit, uncontrolled money supply and a sharp inflation. The Sukarno administration collapsed and was taken over by Suharto administration.

The Suharto administration started with ensuring commitment of international community to support Indonesia in recovering the national economy. In 1966, International Governmental Group for Indonesia was established to settle foreign debts and promote development assistance. At the same time, the Indonesian government established National Development and Planning Agency (BAPPENAS) as a centralized policy making body. Development under the regime was guided to a large extent by a series of five-year development plans prepared by BAPPENAS.

(2) The 1970 to the earlys1980: Accelerated economic development aided by international oil price hike

Based on the landslide victory at the general election in 1971, the Suharto administration embarked on the continuous planning and implementation of programs and projects, including those for infrastructure development. Increasing oil revenue together with development assistance was a major financial input to infrastructure development and the grant-in-aid programs for local governments, i.e. a variety of INPRES (Presidential Instruction) programs. In turn, foreign investments increased. National economy grew at 6.3 % a year on average. Rice self-sufficiency was attained in 1984.

High oil prices, however, gave rise to large dependence of the economy on oil and swelling of the government sector. Due to high levels of Rupiah, primary commodities other than oil & gas reduced competitiveness. Likewise, manufacturing industries could compete in the international market only to a limited extent. Consequently the policies to protect the domestic market encouraged exclusive business groups with vested interests to grow.

(3) The late 1980s: Adjustment: Change for less oil-dependent economy through deregulations

International oil prices dropped in 1983 and, in 1986, reached 40 % as the highest record. The oil glut gave a large negative impact over balance of payment and fiscal balance. Economic growth rate declined to 2.1 %. For economic recovery, the government, thus, took drastic policies for deregulation and privatization. As a result, proportion of the oil & gas sector in GDP declined from 24 % to 13 % during the period between 1981 and 1992.

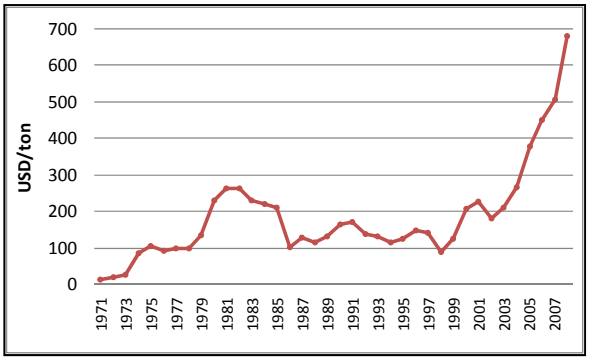


Figure 1-13 Crude Oil Price

(4) The 1990s: Growth until the currency crisis: Financial liberalization leading to investment boom and eventual financial crisis

National economy recovered through structural adjustment policies and expanded foreign direct investments. Financial liberalization policies attracted a large amount of foreign capitals, including those of short-term. At that time, economic globalization was

accelerated with the end of the Cold War and capitals began to move across borders.

Asian currency crisis started in Thailand spilled over Indonesia in 1997. The crisis caused a sharp drop in Rupiah, weak banking sector, inflation and insurgencies.

Under the crisis, the International Monetary Fund (IMF) offered liquidity supply on a range of policy conditionality. The Suharto administration did not accept the conditionality and thus created mistrust partly due to people's dissatisfaction toward the intermingling of public policy and private interest by a few privileged groups. Thus the administration regime collapsed.

In 1998, Habibie administration started. It actively initiated democratization policies and pursed the governance by law. It also initiated administrative and financial decentralization. These initiatives were positively responded by the international community, including IMF.

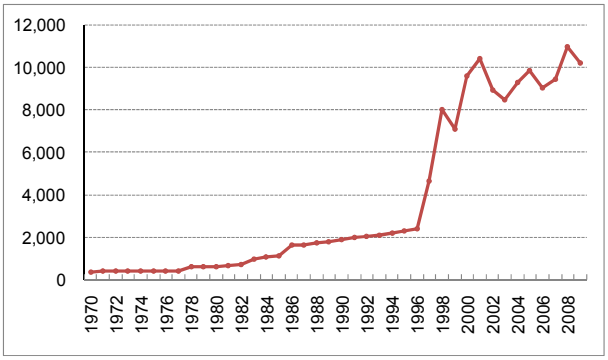


Figure 1-14 Change in Rupiah per US$ Rate: US$

(5) The 2000s: Institutional reform toward a fresh start of the nation

The Habibie administration lost unifying force in the wake of independence war of the East Timor and was taken over by Wahid administration and subsequently Megawati administration. Meanwhile, the national economy gradually recovered.

In 2004, Yudhoyono administration started upon the first-ever direct presidential election. The administration has been implementing the institutional reforms initiated since the Habibie administration.

It completed repayment of IMF borrowings earlier than scheduled. It, then, abolished the IGGI which had been held since1966. In 2009, Jakarta commitment was singed between Indonesian government and international donors in an attempt to change the recipient-donor relations into a partnership.

While many Asian countries suffered from the recent world financial crisis, Indonesia has maintained a steady economic growth, thanks to a high level of international energy prices. The middle-income people emerged through democratization, and improved financial environment.

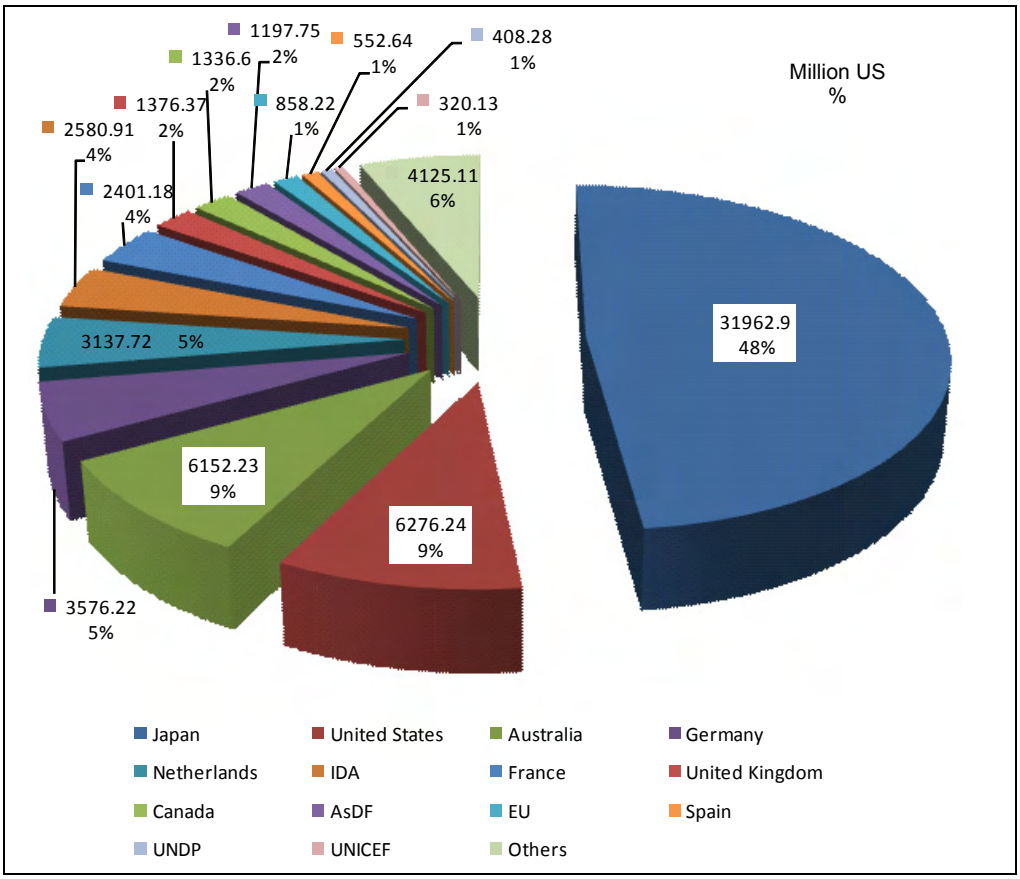
Table 1-3 Economic Recovery in Asian Countries

年	1995	1998	1999	2000	2001	2002	2003
GDP Growth(%)							
Indonesia	8.2	-13.1	0.8	4.9	3.4	3.7	4.1
South Korea	8.9	-6.7	10.9	9.3	3.8	7.0	3.1
Thailand	8.9	-10.5	4.4	4.8	2.1	5.4	6.7
Inflation Rate(%)							
Indonesia	8.6	77.5	2.0	9.4	12.6	10.0	5.1
South Korea	4.5	7.5	0.8	2.3	4.1	2.7	3.6
Thailand	5.8	8.1	0.3	1.6	1.6	0.7	1.8

Source: Indonesia's Bureau of Statistics (BPS), Institute of Development Economics, and various sources

1.2. Achievements of Indonesia-Japan Cooperation

Japan has contributed a cumulative total of 4,626.1 billion yen for its ODA to Indonesia until 2008. Japan has been the largest donor country for Indonesia. For Japan, Indonesia has been the largest recipient country. During the period from 1960 to 2008, Japan's ODA to Indonesia was 31.96 US Dollars or 48 % of the total amount of the ODA received by Indonesia



Source: OECD
Note: Figures on amount refer to cumulative total during the period 1960 to 2008

Figure 1-15 ODA to Indonesia : 1960-2008 (gross)

This achievement is based on historically close relations between the two countries. Indonesia-Japan cooperation began when Japan first became a member of Colombo Plan and received 15 trainees from Indonesia in 1954. In 1958, Indonesia and Japan made a peace agreement as well as a war repatriation agreement and subsequently accelerated the official cooperation between the two countries. In 1968, Overseas Economic Cooperation Fund (OECF), or JICA at present, started to provide Japanese ODA Loans to Indonesia and established the office of OECF Representative to Indonesia in Jakarta. In 1969, Overseas Technical Cooperation Agency (OTCA), or the forerunner of JICA. The following figure shows the sector-mix of contribution by JICA in the past 50 years.

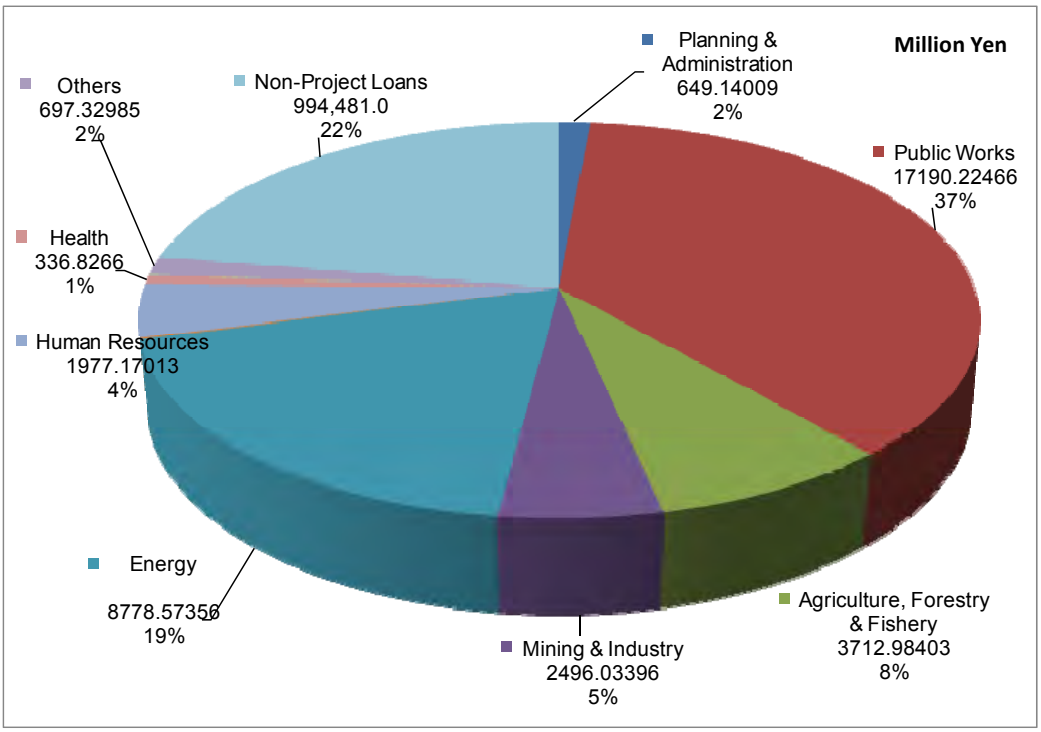


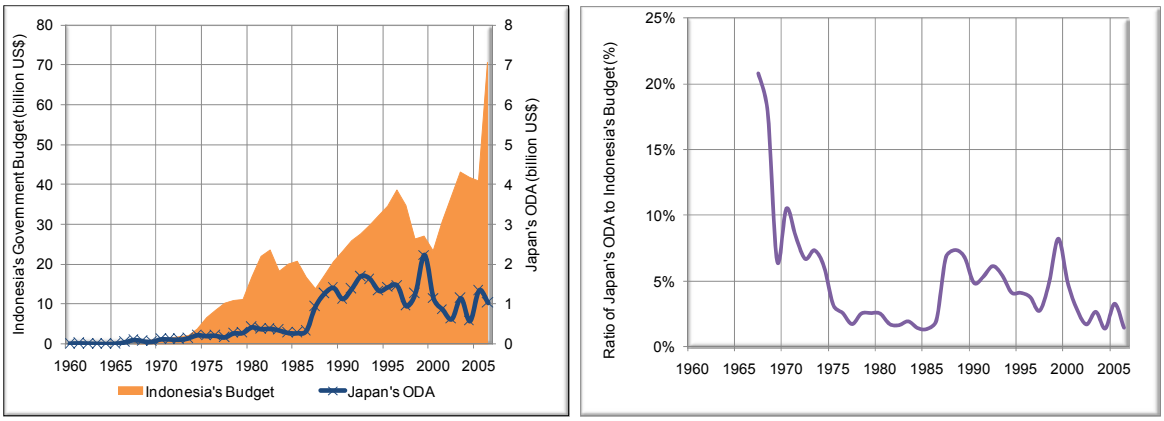
Figure 1-16 Sector-wise Contribution by JICA

Sectors of the contribution by JICA have included public works followed by energy, agriculture and mining & manufacturing. Magnitude of the contribution to these sectors has been 1,719 billion Yen or 37% of the total contribution, 877.9 billion Yen or 19%, 371.3 billion Yen or 8% and 249.6 billion Yen or 5% subsequently.

The economic infrastructures, including transportation and energy are a base of stability and development of the socio-economic activities. Energy and natural resource development, in particular, is an important means to secure foreign exchange. Japan has also contributed in the efforts to attain food security, the largest national issue, and human resource development to support economic diversification.

A substantial amount of non-project ODA loans has been provided. It has mainly comprised of sector program loans to contribute to maintaining the economic and social stability of the country in acute occasions. Such occasions have included the oil glut in the 1980s, deteriorating balance of payment after the Plaza Accord and the Asian currency crisis. Japan has provided intensive assistance for crisis management to Indonesia during the time of crisis, and provided support for nation building when the social and economy are stable.

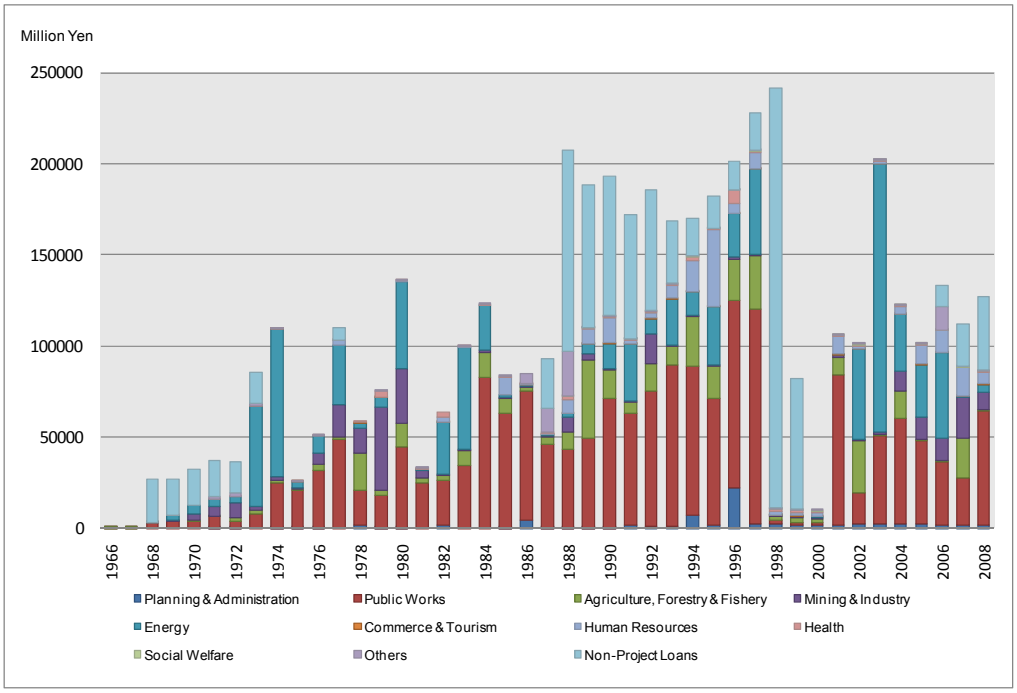
This pattern of cooperation is reflected in the changing relation between the amount of Indonesia's national budget and the amount of Japan's ODA. The amount of Japan's ODA used to be as large as 10 % to 20 % of the Indonesia's state budget in the 1960s, when Indonesia has just joined with the nations of the free world and embarked on a full-fledged economic development. Japan has also made intensive and substantial financial contributions when Indonesia seriously suffered from state budget shortage.



Source: Embassy of Japan in Indonesia

Figure 1-17 Japan's ODA Amount as Compared to Indonesia's State Budget

The following figure shows the trend in Japan's cooperation with Indonesia by sector. The figure indicates a sharp decrease in the amount of ODA except for the non-project ODA loans during the period from 1998 to 2000. The decrease was resulted from a greater emphasis on the financial support for the socio-economic stability of the country than implementing projects that need a substantial amount of local cost expenditures.



Source: JICA

Figure 1-18 Trends in Japan's Cooperation with Indonesia by Sector

1.2.1. Cooperation for the Nation Building

(1) Contributions to Stability of the Country

1) Socio-economic stabilization

Japan supported Indonesia in maintaing the macro economic and financial balance, international balance of payment in particular, when Indonesia was under crisis. A major means of support was a series of commodity loans to support balance of payment in early days and to support sector programs and development policies later. First crisis was the economic turmoil during the period of the transition from Sukarno administration to Suharto administration. Second crisis was the oil glut in the middle of the 1980s. The third was the Asian currency crisis in1997-98.

When the Indonesian government suffered from the Asian currency crisis, JICA sent a policy advisory team headed by Dr. Takashi Shiraishi, Kyoto University at that time, to facilitate dialogues between policy makers in Indonesia and IMF

- ODA loans amounting to 148.4 billion Yen were provided during the late 1980s and the 1990s to cover the foreign currency shortage caused by sharp falls in international oil prices.
- During 1988-1989, ODA loans amounting to 104.9 billion Yen were provided with interest rates at 1-2.7% and payback period being 30 years, in order to reduce a budget imbalance.
- Right after the Asian currency crisis hit Indonesian economy in 1998, three ODA loans amounting to a total of Yen 170 billion were provided for the sake of maintaining international balance of payment, supporting agricultural production and urgently creating employment through labor-intensive public works. In 1999, another ODA loan was provided to finance local currency cost of ongoing projects financed by Asian Development Bank (ADB), Japan and the World Bank and replenish the cost of fuels and electricity.

2) Food security

Japan continuously supported the efforts of Indonesian government to attain food self-sufficiency with a result that rice self-sufficiency was more or less attained though food security has not been ensured.

In addition, Japan responded to Indonesia in meeting short-term food shortage with an increase of food production program through the Kennedy Round.

- A number of irrigation projects encouraged farmland expansion and crop intensification. In parallel, technical cooperation was provided for disease control, post- harvest improvement and seed multiplication and distribution of improved varieties.
- R & D and extension activities were supported in both technical and managerial aspects for animal health, inspection of animal medicines and dairy since the late 1970s. These activities contributed to the provision of quality protein and increase in farm income.
- Continuous cooperation was provided for the development of fishing ports and fishery

market places since the 1970s. Shrimp farming was supported in the 1980s. Technical cooperation was provided to fish juveniles production and fish culture.

- Supports were extended to research institutes, including Bogor Institute of Agriculture (IPB), and for long-term human resource development in agriculture

3)Health

In the 1960s, the infant mortality rate was as high as 145 persons per 1,000 persons and there were infectious diseases spread. The government paid a great attention to the development of medical infrastructure and public health service. At the same time, population pressure was a hard-core issue. Family planning was taken up since the first Five-Year Plan.

Japan has been supporting the health improvement with special reference to sanitation, public health, and maternal and child health.

- Family planning was supported for a long period from 1969 to 1985.
- A maternal and child health (MCH) handbook was developed by Indonesian and Japanese experts. It was then distributed all over the country to cover about 60% of pregnant women. They undergo health checks before childbirth with this handbook. At the same time, efforts are being made to establish a system to provide health services for mothers and children.
- Support was given to Bio Farma Company (BFC), a state enterprise, in developing facilities and equipment of Polio Vaccine production plant. and so that it could contribute to health improvement of the country through provision of low-cost vaccines. In 2009, BFC has produced 100% of polio vaccine in the domestic market and 30% in the world market, thus contributing to foreign currency earnings of the country as well.
- Support was given to the water supply system in Jakarta for 35 years with a result that 3.4 million people were made newly accessible to the piped water. Sanitary and health conditions were improved in Jakarta. Drainage and flood control systems were developed with a result that flood frequency decreased and damages were also reduced. ODA loans were provided for solid waste disposal system, including a final disposal plant, intermediate plants and garbage collecting vehicles.

4) Disaster control

Indonesia is one of the major volcanic countries and has often been hit by earthquakes and tsunami. Flood damages have often taken place due to large rainfall and volcanic ashes. Forest fire is serious, too.

Japan has contributed to reducing damages through not only emergency relief but also the prevention measures based on its inherent experience.

- Long-term cooperation was extended to the development of major river basins, including Brantas, Solo and Jeneberang. The cooperation contributed to substantially reducing flood damages, increasing agricultural production, supplying electric power as well as industrial and urban water.
- Support was given for sand erosion control of Mt. Merapi for 30 years. The support included the construction of a technical institution and the technical training for the sand erosion control in volcanic mountains.

- Cooperation was provided to develop an early detection system of forest fire through satellite information, training programs for initial firefighting and the organizing of firefighting teams in the national parks, or known as Manggala Agni.
- A series of measures were worked out jointly by Indonesian and Japanese experts to strengthen countermeasures again natural disasters; building and houses, early warning system against tsunami, the countermeasures to flood, erosion and volcanic explosion, and the institutional arrangement against forest fires.

(2) Contributions to Strengthening Economic and Social Bases of the Country

1) Infrastructures

Infrastructure networks are essential, particularly to the Indonesian islands, not only as an economic base but also as a means to connect people. Major infrastructures development with Japan's cooperation include the following:

- Cooperation was provided to develop approximately 60% of the total mileage of trunk roads in Sumatra, or around 2,500km, and 20% of the metropolitan highways in Jakarta.
- ODA loans were provided to cover a major part of the railways in Jakarta metropolitan area.
- Support was given to construct and expand airports in Bali, Balikpapan, Padang, Palembang, and Surabaya.
- Also, support was given for the development of Sumatra-Java ferry system, which annually carries 15 million passengers and the cargoes of 18 million tons at present.
- ODA loans were provided to develop power generation plants, which represent nearly 25% of the total generating capacity of the plants developed by PLN as of 2008, according to the OECD / IEA statistics and PLN's data.
- In 1969, ODA loans were provided to develop coastal radio communication system and microwave network to ensure the communications among many islands all over the country. In 1985, marine cables were developed between Java and Kalimantan with ODA loans.

2) Natural Resource Development

Natural resource development was triggered by partly Japan's cooperation. Consequently, Indonesia increased foreign currency earnings and Japan stably purchase oil &gas from Indonesia, with a result of intensified economic interactions between the two countries. It is clear that Japan's official cooperation for natural resource development has been significant in intensifying and diversifying the economic relation between Indonesia and Japan, despite that those proportions of the export to Japan have relatively been declining mainly with the expansion of Indonesia's domestic energy demand.

- During the period from 1973 to 1976, ODA loans amounting to a total of 110 billion Yen were extended to 40 projects for oil and gas exploration under the National Oil Company or Pertamina. Pertamina was successful in oil and gas exploration in

northern Sumatra and east Kalimantan.

- ODA loans were provided for the development of liquefied natural gas (LNG) plants at Arun of Nanggroe Aceh Darussalam Province and Bontang of East Kalimantan province. These plants were major bases of LNG production in Indonesia for more than 30 years. Japan imported about one-third of the oil and gas produced in Indonesia.

3) Creation of Favorable Investment Climate

Development of infrastructure network and natural resources has paved the way to private investments and eventually economic development. The ODA without inducing private investments would have brought about a very limited impact over economic development.

The Japan's cooperation with Indonesia has induced the foreign direct investments (FDIs) from Japan to Indonesia, according to an econometric analysis by Prof. Todo.

In this regard, a key has been the Dialogue on Investment Climate arranged by Jakarta Japan Club. Based on the dialogue, investors from Indonesia and Japan inform their for the investment policies of the Indonesian government as well as the Japanese government.

This initiative has been followed by the periodic dialogues between Indonesian business communities, including the Indonesian Chamber of Commerce or KADIN, and the Consultative Group of Indonesia (CGI).

4) Training at the Practical Level

The nation building requires the establishment of institutional and organizational frameworks. Equally important is to make the institutions and organizations operational through training and managerial improvement at the practical level. Japan has participated in the institutional and organizational development with special attention to making things to be operational through on-the-job training. The following is some of such examples:

- Support was given to construct facility and install equipment for multi –media training. In parallel, training programs were developed and instructors were trained. At present, more than 2,700 graduates from this training programs work actively for radio and TV broadcasting.
- A training institution was established for strengthening water supply and environmental sanitation at the suburb of Jakarta. For 19 years until 2009, it trained 6,419 persons, comprising 3948 persons for water supply and 2,417 persons for environmental sanitation
- The Indonesia Export Training Center (IETC) and the Regional Export Training and Promotion Center established under the Indonesia-Japan cooperation have been contributing to the human resource development of the small and medium enterprises through the training of business skills and information on the international trade. The total number of the trainees in IETC reached 2,462 persons in 2009.
- Support has been provided to Technical Center for Volcanic Sand Erosion Control, a

center for erosion control activities in Indonesia at present. It has trained about 320 technicians. It is now a leading center of erosion control activities in Indonesia. Technical guidelines and manuals have been prepared and distributed among relevant personnel. An integrated approach has been widely understood to control erosions.

Under the Indonesia-Japan cooperation, training has been an indispensable component even in the projects that do not primarily intend for human resource development. Some cooperation projects have resulted in the establishment of new consulting firms and contractors by engineers and specialists fostered through training activities incorporated in the cooperation projects

- Technical cooperation was provided to PT Jasa Marga, a state-owned enterprise in the management, operation and maintenance of highways through the projects for planning and constructing Jakarta toll roads. Technical capability of the enterprise has been so strengthened that it is now internationally competitive. Its technical strength has been shown by the fact that it has received a project order in Bangladesh.
- An emphasis was placed on the technical transfer in making the master plan on optimizing electric power development undertaken during the period from 2002 to 2009. Consequently, Indonesian experts and engineers have been made capable enough to plan power generation plants and transmission lines by themselves.
- In the Trans Sumatra Road Development Project, the local contractors and local consultants have been made capable of designing, implementing and supervising road projects by themselves. In fact, they were indispensable in planning and implementing succeeding projects such as heavy loaded road improvement project and road construction on the east coast of Sumatra.
- In the Brantas river basin development project, Indonesian engineers were dramatically strengthened since the 1960s through technical transfer from Japanese engineers to Indonesian engineers on one-on-one basis. Later, many of them played a central role in developing other river basins. The Brantas project was a sort of breeding ground of Indonesian consulting firms and contractors. Based on the experience in the project, PT Indrakarya was established in 1970, PT Brantas Abipraya established in 1980 and Water Resource Development Corporation was established in 1970.

5) Strengthening of Research & Development and Higher Education

There are a number of cases in which research & development and higher education were strengthened. A typical case has been the R&D for the improvement of forest trees varieties. Partly with the Japanese cooperation this subject has attracted a greater policy attention in sustaining natural resources and contributing to global environmental protection.

- Bogor Institute of Agriculture (IPB) has become a leading agricultural university in Indonesia partly through the Indonesia-Japan cooperation until the 1990s since 1977. It now produces many research outputs, master and doctoral graduates, and hold various international and national seminars, thereby contributing to strengthen other agricultural faculties in Indonesia. It also undertakes training courses for the participants from other countries through the third country training program.
- Electric Engineering Polytechnic Institute of Surabaya (EEPIS) has been supported in an extensive manner since its establishment. The cooperation covers facility development, recruitment and training of teaching staff, development of curriculum and teaching materials and technical training. It is now a top-ranking polytechnic institute in Indonesia. It has always been the top ranking winner in national robot

contest and once being champion in 2001 at a world contest. It produced 5,150 practical technicians from the school by 2009. It engages itself in collaboration with private companies and training of teaching staff of other polytechnic institutes. Number of applicants to the school was 4,050 persons, being 9 times as large as the quota. It has also been accommodating participants from other countries through the Third Country Training Program.

- In 1990, Forest Tree Improvement Research and Development Institute was established in the Ministry of Forestry, under the Indonesia-Japan cooperation. Until then, a limited effort was made to improve forest tree varieties in Indonesia. The varieties improved in this institute carries a survival rate being 20% higher than traditional seeds, and thus now widely used in the country.
- Higher Education Development Support (HEDS) Project was carried out during the period from 1990 to 2002. With the focus on the improvement of eleven engineering faculties in Sumatra and Kalimantan, it encouraged faculty members to obtain degrees, support managerial capability of universities and enhance general level of higher education in the regions. Leading scholars were invited from Japan to participate in research activities in these faculties and encouraged local scholars to embark on state-of -the -art research subjects

(3) Democratization and Decentralization

In the 2000s, Indonesia went through the process of democratization and decentralization in a full-fledged manner. It was a largest-ever shift in development paradigm from a centralized toward a democratic and decentralized institutional system.

Many international organizations and donor countries supported the paradigm shift. Japan gave an emphasis on strengthening the field level capacity in responding to new policy frameworks for democratization and decentralization. Accordingly, it facilitated relevant government officials to change their way of thinking along with democratic and decentralized frameworks.

1) Strengthening the Field Level Capacity in Responding to New Policy Frameworks

With international development support, the government worked out a number of legislations, including the Local Autonomy Act, in line with the major trend toward democracy and decentralization. Some of the legislations were operational to a limited in the begging. In this regard, Japanese cooperation focused on making systems operational and practical. The followings are some of such examples.

- In Indonesia, the police was separated from the military in line with democratization. Main responsibility of the police changed from national security to human safety. On this background, Indonesian police requested the advisory support by Japanese police. Technical cooperation has thus been provided with an emphasis on demonstrating a model of the local police system, in which each police officer is responsible for keeping the community he is in charge of safety.
- Since 1999, Regional Educational Development and Improvement Project (REDIP) has been carried out under Indonesia-Japan cooperation. It has contributed to improving school management at the local level in line with overall decentralization policy.
- Participatory planning at the community level was linked with local financing system in a rural development project for poverty reduction in Sulawesi under

Indonesia-Japan cooperation. In this project, an arrangement was so made that villages prepare development plan to be reviewed by sub-district, technically and financially supported by district, with matching funds from village representing 30% of the cost required.

2) Changing Way of Thinking

Local government officials and community people could not easily adjust themselves to the rapid democratization and decentralization. They also suffered from the lack of personnel that could effectively respond to new policies. Under such circumstances, Indonesia-Japan cooperation encouraged these officials and people to think by themselves about what they can do. The cooperation was aimed at changing their way of thinking through working together.

- Before the decentralization, plans and programs used to be prepared all at the national level. To the contrary, the rural development project in Sulawesi adopted a bottom-up approach to planning and a cost sharing arrangement. Consequently, local governments were encouraged to identify issues and projects by themselves. Process of project preparation was made transparent to the local public as well.
- A project was carried out to strengthen administrative capability of local government officials under Indonesia-Japan cooperation. This project involved discussions among local officials so that they began to identify problems and solutions by themselves.

1.2.2. Cooperation for Capacity Development in Nation Building

(1) Long-/Medium-term and Integrated Approach

1) Continuous Support from Long-/Medium-term Viewpoint

Since the 1970s, continuity has been a key notion of Indonesia-Japan cooperation, particularly in infrastructure development. The continuity has made the Japan's cooperation highly predictable. Partly with the predictability, the Indonesian government has been able to prepare plans and programs from the long and medium terms. In addition, efficiency has been maintained in the implementation of programs and projects, because the cooperation in one project has often been followed by that in another project. This cycle has made it easier for the Indonesian government to continuously have the project personnel and equipment available not only for implementation but also maintenance.

2) Emphasis on Master Planning

A series of development study projects for regional development planning has raised awareness, among Indonesian government planners, about the inter-sectoral planning for a particular region from the long–term point of view.

This idea has been made use of by BAPPENAS in working out programs on the basis of not only sector but also region. It has worked out a national framework for spatial development by delineating seven major planning regions. The first national medium-term development plan 2010-2014 comprises an overall development, sectoral development and regional development.

The master plan approach has been adopted in sector projects under the Indonesia-Japan cooperation. Many cooperation projects were identified based on not individual project planning but master planning from the viewpoint of long-term perspective and inter-sectoral coordination.

- In the Jakarta Toll Roads Development Project (1975-1985), location of ramps were determined from the viewpoint of not only short-term traffic management but also long-term urban development plan.
- In designing the Jakarta Ring Roads, alignment was planned considering population concentration, the capacity of water supply and the flood occurrence rate. In parallel with the preparation of the road plan, the government started land acquisition and development control
- A long-term cooperation for water supply system in Jakarta began with a master plan on a city-wide water supply system prepared by Japanese technical cooperation in 1963. The plan set target year at 1971.
- In 1984, the Minister of Public Works at that time stated in his speech at the inauguration of Lodoyo floodgate that Brantas is the first case in which water resource development was planned in an integrated way and projects were smoothly implemented.

(2) Elaboration of Development Approaches Relevant to Indonesian Situation

Indonesia-Japan cooperation has not intended to one-sidedly introduce Japanese experience or method to Indonesia. It has stressed on working together at the field level. In other words, it has respected the ownership, wisdom and views of Indonesia. Such approach is often replicable to other sectors or regions. In fact, newly developed approaches or method for development are often applied to other projects under the Indonesia-Japan cooperation.

- Regional Education Development and Improvement Project (REDIP) was carried out to cover all the schools in the project areas, but not selected pilot schools. It provided block grant to meet the varying needs identified jointly by local governments, communities and school teachers. This approach is now applied to projects other than REDIP by the Ministry of National Education and provincial governments. REDIP approach is being utilized.
- In the Barru Regency of South Sulawasi Province, members of Junior Experts (JOCVs) initiated seed production for tomato and pepper and a livestock bank. These are sustained even after the JOCVs have left the vegion. Other JOCVs developed a rural water supply system. It has increasingly been used in the regency. In addition, other villages began to introduce the same system.

A number of institutional arrangements have been introduced to Indonesia through Japanese cooperation, in response to the occasion in which officials of the Indonesian government discovered the use of such institutional arrangements in Japan. In these cases, the institutional arrangements have usually been well adapted to the Indonesian situation. Japanese experts do not believe in the Japanese approach to be always appropriate, but they have always supported Indonesian people who envisage the use of Japanese experience as a reference.

- A project to develop and distribute booklets for maternal and child health (MCH) handbooks started with strong initiative by the provincial health personnel who

participated in a health training in Japan and realized that the handbook in Japan is relevant to the situation of maternal health in Indonesia. Demand for the handbooks is high in Indonesia and 60% of the pregnant women have been provided with the handbooks. They carry the handbooks with them when they undergo the healthchecks before childbirth.

- Police posts were introduced in Indonesia with the initiative of a police officer who participated in a training course in Japan on police force reform. The police officer thought that *Koban* in Japan were applicable to Indonesia where police officers could closely take care of community's safety. The Indonesian National Police Force examines a possibility to set up police posts all over the country.
- Volunteer firefighting companies were organized as "Manggala Agni" to prevent forest fire from spreading in national parks, with the endorsement from a Director-General of Natural Conservation who conceived of the volunteer firefighting companies based on the field observation of a Japanese firefighting team. Manggaka Agni has now been organized in almost all the national parks in Indonesia.

1.2.3. Cooperation for Deepening Indonesia-Japan Relationship

(1) Mutual Learning

Mutual learning is important for development. Indonesia-Japan cooperation has provided those who have engaged themselves in cooperation projects with opportunities for them to mutually recognize something new through the difference in socio-cultural background between the two countries. The following is some of such cases.

- In supporting the Indonesian National Police officers sent to Japan for training were assigned to police posts to closely look at the day-to-day activities of Japanese police officers and to directly ask them. This process has enabled Indonesian police officers to realize how Japanese police officers work for the people.
- The head of the Galung village in Barru Regency, South Sulawesi Province told that the activities by Junior Experts (JOCV) members gave impact on the way of thinking of villagers. In this village, communication still continues between villagers and ex-members of JOCV. Some of the ex-members often come back to the village. The village head stated that the village could be activated and grow faster with these ongoing communications.

(2) Exchange of Technology and Research

A number of cooperation projects at higher education institutions and government research institutions have encouraged continuous and broad-based exchanges of technology and research between Indonesia and Japan. The following is some of such examples.

- Under Indonesia-Japan cooperation, the Research Institute of Tropical Rain Forest of the Mulawarman University of East Kalimantan province was supported during the period from 1979 to 1999. Indonesian and Japanese experts collaborated in tropical forest research. Through the research, a number of faculty members of Mulawarman University studied in Japan, and research collaboration expanded to many other researchers. This is an important collaboration for the Japanese experts as well, because there is no tropical forest in Japan.

- Biological Research and Development Center (RCB) was established in the Indonesian Institute of Sciences (LIPI) with Japanese grant aid for the building construct and technical cooperation. During the project period many researchers studied in Japan and obtained doctoral degree. In this center, Japan has been the largest partner for joint research and overseas study.
- Higher Education Development Support Project was carried out during the period from 1992 to 2002. It was a project through Indonesia-Japan cooperation, and was participated by other donors, too. The project has established research networks internally and externally. The University of Northern Sumatra, one of the core universities of the project is active in periodical meetings with universities in Malaysia, international conferences and joint research with external researchers, including those in Japan.

One observes similar technological and research exchanges in private sector.

- Engineers of Indonesia and Japan jointly prepare plans in a project for developing telecommunication network of Jakarta metropolitan area. This process has largely strengthened the technical capabilities of Indonesian engineers and contributed to continuous exchange of information and technical improvement among them.

(3) Improving Approaches to International Cooperation

The continued cooperation has made it possible for the two countries to improve approaches to international cooperation. In fact, Indonesia is one of the first development partners for Japan, where some projects were gradually packaged with other projects so that a program was designed on an incremental basis. A typical example is the First Umbrella Cooperation for agricultural development. In recent years, South Sulawesi Provincial Government and the Japanese Embassy reached an agreement on a long-term cooperation for regional development of the province. This agreement stresses a program approach to support the provincial plan and the district plans.

The experience of improving approaches to the international cooperation could be applied to the cooperation with other developing countries by either Japan or Indonesia.

1.3 Summary

The nation building and development of Indonesia have been realized primarily by untiring efforts and wisdom of the Indonesian people. International cooperation, including the one by Japan has only been significant only when the people of Indonesia commit themselves to the nation building.

This review study reveals that Japan, being a neighbor to Indonesia, has played a significant role in Indonesia's nation building, particularly in the following aspects:

1) Maintaining the unity and stability of the country

2) Strengthening economic and social bases of the country

3) Democratization and decentralization

4) Capacity development in nation building

5) Deepening Indonesia-Japan relationship

Since independence, Indonesia has experienced a continuous nation building process. The process has accompanied the transitions from a centrally managed society to a democratic society and those from a antrally managed society to democratic society and those from a government-led economy to a market-based economy. It is in this context that Japan has continuously, timely and effectively responded to and followed up the nation building process in the past 50 years.

The democratic society of Indonesia has been built, based on these efforts by the Indonesian people together with international cooperation. Indonesia-Japan cooperation has been important in not only Indonesian but international context, since the democracy and development of Indonesia have profound implications for ASEAN economy, Indonesia-Japan bi bilateral relationship and a stable international community.

According to our survey, the cooperation so far has accumulated a plenty of valuable lessons and the trust among the people on both sides. These lessons and trust should be an important asset for a broader cooperation between the two countries.

2. Economic Policy Support and Macro-economic Management

2.1. Areas of Cooperation

We understand that Japan cooperated with Indonesia in two ways; macro economic and financial stabilization, and sector-wise development. This chapter describes the cooperation for macro economic and financial stabilization.

Table 2-1 Cooperation for Economic Policy Formulation and Macro-economic Management

	Short term cooperation for economy stabilization	Long term and continuous cooperation for economic growth
Non-project type of financial cooperation	Commodity loan Sector program loan Debt relief	Development policy loan Sector development program for reforming infrastructure policy
Technical cooperation		Cooperation to BAPPENAS
cooperation economic policy formulation	Policy dialogue	Policy dialogue

2.2. Policy Development and Cooperation in a Historical Perspective

Overview

The following table shows an outline of the cooperation for the above mentioned areas to Indonesia in the past fifty years.

Table 2-2 Issues and Cooperation in Economic Policy and Macroeconomic Management

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Cooperation for economic policy formulation and macroeconomic management	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructuring of from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Reform of National Planning Agency to BAPPENAS (1963) − Start of formulation of PERELITA(1969) − Economic growth rate: 3.5% on average − Per capita GDP: US$ 70 in 1969 − Foreign reserve: less than one month of import	− High economic growth supported by soaring oil price − Increase in FDI for natural resource development − Economic growth rate: 7.3% on average − Per capita GDP: US$608 in 1981 − Public finance : -3.7% of GDP (1981-85)	− Due to oil glut, economic condition deteriorates − Balance of payment position is deteriorated again − Necessity of departure from oil dependent economy is mounting − Economic growth rate: 5.5% on average − Per capita GDP:US$ 505 (1988) − Public finance: -2.7% of GDP (1986-89)	− Overcoming the oil glut, economy returns to growth trend − Inflow of speculative capital − Outflow of capital due to Asian currency crisis − Negative growth rate at 13% in 1998 − Economic growth rate: 4.2% on average − Per capita GDP : US$700 (1995) − Public finance: -2.8% of GDP (1990-98)	− Returning to growth trend, under stabilization of political situation − Power at Ministry of Finance is strengthened under new Public Finance Act , 2003 − Role of BAPPENAS is changed under National Development Planning System Law. In 2003 − Economic growth rate: 4.7% on average (1999-2009) − Per capita GDP: US$ 1,982 (2008) − Public finance :from -3.9% (1999) to-1.1%(2006)
	Priority Development Issues shown in 5-year plan	− Stable balance of payment position for securing stable economic development	− Stable balance of payment position for securing stable economic development	− Transform economic and industrial structure for less dependence on oil and gas	− Poverty reduction − Overcome financial and economic crisis	− Stabilization of economy and finance − Deal with deteriorated public finance
	Japanese Approach for Development Issues	− Cooperation for economic stabilization	− Cooperation for economic stabilization − Cooperation for formulation of National Development Plan	− Cooperation for economic stabilization − Cooperation for formulation of National Development Plan	− Emergency cooperation to overcome difficulties caused by Asian currency crisis − Cooperation for formulation of National Development Plan	− Cooperation for economic policy formulation through policy dialogue − Cooperation for public finance under the package with institutional reform

	Priority Programs/ Projects for Japanese Cooperation	− Non-project type loan	− Non-project type loan − Cooperation to human resources development at BAPPENAS	− Non-project type loan − Cooperation to human resources development at BAPPENAS	− Sector Program Loan − Cooperation for public finance and for poor people damaged by Asian currency crisis − Cooperation to human resources development at BAPPENAS − Cooperation for improvement in population census survey	− Policy dialogue − Development policy Loan − Program loan for mitigating climate changes − Technical assistance: − Improvement in tax administration, in capital market development, in financial operation at Bank Indonesia and improvement in investment climate

The figure below shows trends in non-project ODA loans by type. The loans cover the commodity loans for imports of necessities from Japan, the sector program loan (SPL) and Development policy loans (DPL).

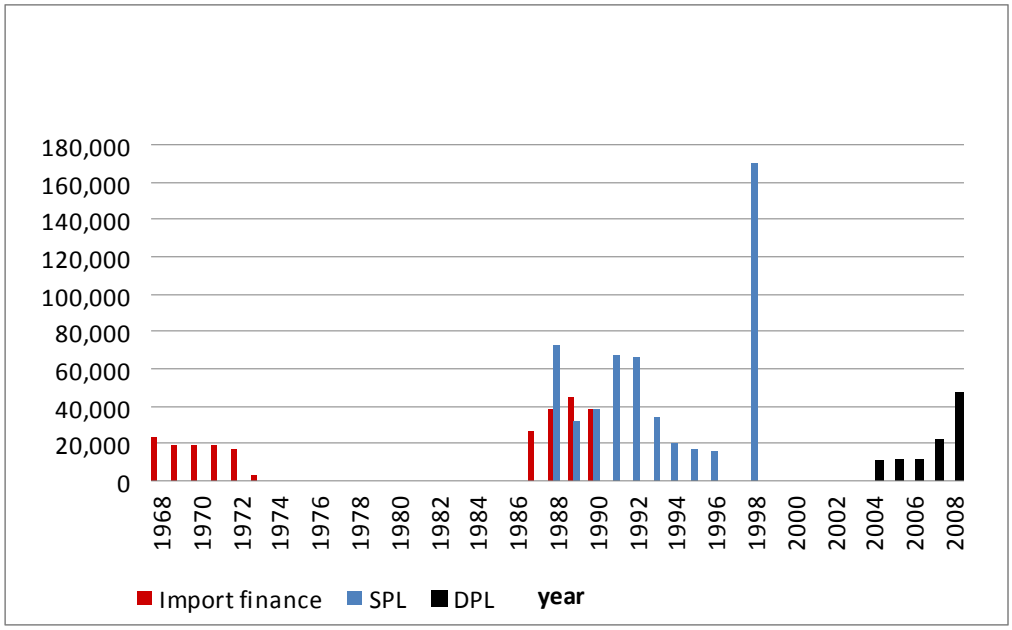


Figure 2-1 Non-project ODA Loans (million Yen)

2.2.2 Policies and Cooperation in Different Periods

(1) The 1960s: Economic development through the cooperation with international society

Since the economy was still unstable, a highest priority in economic policy was given to the recovery of the economic and political stability. For this purpose, the government took policies for economic liberalization, rehabilitation and stabilization. Since the government faced a serious problem of the lack of foreign currencies for these developments, securing international liquidity was a great concern and the government depended on import finance.

(2) The 1970s and the first half of the 1980s : Economic development accelerated by international oil price hike.

Upon overcoming economic turmoil, the government shifted the priority for economic development from stabilization to growth. Expansion in employment opportunity was given the first priority and a stress was given to development of labor-intensive industries. Agricultural sector development was also given a high priority taking into consideration the importance in ensuring food supply, self sufficiency of rice, and poverty reduction in rural areas. Infrastructure development was also accelerated as a basic condition for sustainable economic growth.

Supported by hike in international oil prices in 1973 and 1979, Indonesian economic development was accelerated and real economic growth rate reached 6.5% per year.

Manufacturing sector led the growth with its growth rate at 12% per year. However, due to the increase in labor force, there was little remarkable improvement in unemployment though poverty rate went down. Economic structure changed largely and mining sector increased its magnitude in GDP while the relative magnitude of agricultural sector sharply dropped.

Balance of payment position in Indonesia was still weak and the national economy faced itself to the lack of foreign exchanges to import not only capital goods but also consumer products. The Indonesian government continued to request the Japanese government for the commodity loans for imports of necessary products. After oil price hike, however, the problem disappeared due to a large increase in international reserve.

Commodity loans for imports of necessities from Japan

The commodity loans were provided five times with a total amount of 73.6 billion Yen in this period. Indonesian economic and industrial structure was not diversified as it is now.

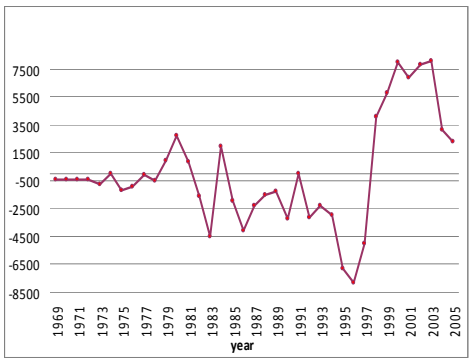


Figure 2-2 Changes in Balance of Payment（million US$）

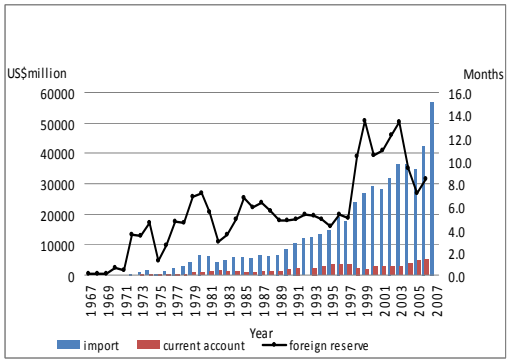


Figure 2-3 Import and Foreign Exchange

Cooperation to BAPPENAS

Cooperation to BAPPENAS started when Dr. Saburo Okita was assigned as an advisor to BAPPENAS in preparing five-year development plans at the national level. Following this advisory work, technical cooperation was extended to BAPPENAS in various fields of development studies and training of staff. The cooperation contributed to the strengthening of planning administration in the government including BAPPENAS.

In the initial stage, a stress was laid on how to work out frameworks for development plan. Later, an increasing emphasis was placed on more analytical subjects. In the 1970-80s 20 experts were dispatched. with a main purpose to help develop the prototype economic models for long- and short-term economic planning. Such models include:

- Fiscal model (Annual macro model for BAPPENAS)
- Finance sector model (Bank Indonesia model)
- Balance of payment model
- Industrial input-output model
- Econometric model

(3) Latter half of the 1980s: Overcoming oil glut through structural changes for attaining less oil-dependent economy

Price of crude oil began to fall sharply in 1983. It was as low as 40% level of the price in 1986. Negative impact was large and many sectors suffered. Real economic growth rate dropped to only 2% in 1986. Unemployment rate increased by 1 point. Balance of payment position was deteriorated and Indonesia faced itself again with the lack of international liquidity. Japan extended the commodity loans for import again. At the same time, it was urgent to support the poor people who suffered most from severe recessions. Thus, Japan extended a series of sector program loans to mitigate the damage on them.

Recognizing that it is imperative to diversify its industrial structure to be less dependent on oil and gas, Indonesian government took the policy to develop the capital and intermediate goods industries including industrial machinery, cement, apparel and urea.

As the changes in economic and industrial policy took favorable effects, economic growth rate recovered to 5-7% in the late 1980s with an increasing proportion of manufacturing sector in the national economy.

Commodity loans for imports of necessities from Japan

From the late 1980s to the early 1990s, Indonesian economy continued to suffer from oil glut. Commodity loans were thus extended again. The total amount reached 148.8 billion Yen under four shots.

Sector Program Loan (SPL)

SPL has been aimed at financing the imports from Japan for specific sectors. The loan was extended twice in 1988 and 1989 with a total amount of 104.9 billion Yen.

Before the SPL was designed, many project loans were extended. However, most of these loans were disbursed for large infrastructure projects and small-scale projects were left behind. SPL was attempted to benefit the underdeveloped areas and socially vulnerable people. The each SPL covers multiple sectors and various regions under the same program. Following is one example.

SPL for improving living condition and electrification in rural areas

Due to the sharp drop in oil price in 1986, Indonesian balance of payment position deteriorated and fiscal condition worsened partly because around 60% of national revenue was from oil and gas sector.. In order to solve the problem, Japanese government extended 72.4 billion Yen to Indonesian government in 1988. The loan was disbursed to the sectors which were important for daily life of the Indonesian people and were considered to be useful to sustain the growth. For the loan, 32 projects in 8 sectors were selected. They include improvement in village condition, drainage and sewage and electrification in rural areas.

Cooperation to BAPPENAS

In this period, three experts were dispatched to BAPPENAS. They contributed to improvement of the economic analysis model which became useful for the government to respond to the changing external economic factors such as oil glut.

(4) From 1990 to 1998: Deregulation, loose financial management and Asian currency crises

After overcoming negative impact of oil glut by structural adjustment, Indonesian economy came back to the orbit of economic growth. For its sustainability, the government advanced further restructuring of the economy. Prioritized economic policies were expansion of secondary and service industries and increase in exports by the sectors other than oil and gas. Manufacturing sector was given the most important role as an engine of growth through export expansion.

The economy achieved annual economic growth rate at 6-8% for the years before Asian currency crisis. However, unemployment rate, which was controlled within 2% level until 1994, began to increase after 1995. Balance of payment recorded red year by year and it was covered by inflow of capital. However, after 1997, due to the Asian currency crisis, it turned to red and, as the result, overall balance turned to be negative.

With the end of the Cold War, capital movement among countries was accelerated and a huge amount of private capital flew into Indonesia. The capital flew out at the outbreak of the Asian currency crisis. It brought about crises to Indonesian economy with a negative rate of economic growth at 13% a year. Both unemployment rate and poverty rate turned to show an upward again. Such economic situation fueled a longstanding discontent among the people with government policies and thus led President Suharto to leave from the president office. In 2000, Habibie took the office of president.

In this disruptive economic development, Japan extended emergency finance especially for the socially vulnerable people. In addition, Japan provided technical advice in economic and financial management.

Sector Program Loan (SPL)

In this period, ten SPLs were extended under deteriorated balance of payment position. Total amount reached 430 billion Yen. Among these ten loans, three loans with 170 billion Yen in total were extended to cope with the financial and economic crises in 1998. The following is an example.

SPL for education, healthcare and social welfare sector
The loan of 20 billion Yen was extended for import of products to improve balance of payment position in 1998. At the same time, the counter balance denominated in Rupiah was extended for improvement in education, health, sanitary and social welfare. The main objective was to contribute to poverty reduction and reducing disparities among regions

Social safety net loan and development loan for health and nutrition sector

These loans were extended to improve balance of payment position in Indonesia and to support reform of economic structure. They were prepared as "New Miyazawa Initiative" and implemented through the cooperation with the World Bank.

Policy dialogue

Japan recognized the need to support the Asian countries which were faced by the Asian currency crises. In October 1998, Japan committed to provide such Asian countries with US$ 15 billion for long-term and med-term finance and US$ 15 billion for short-term finance.

Japan saw the importance of the commitment by the Indonesian government to the economic revival plan that was prepared within a framework of the IMF. However, the Indonesian government reportedly hesitated to commit to it for an understanding that the plan was a political intervention. Fearing that differences between the Indonesian government and the IMF might prolong the solution of the economic crises, Japan tried to encourage closer dialogues to be held between the Indonesian government and the IMF by expressing its idea that the IMF was better to understand an Indonesian style of problem solution, while at the same time convincing the Indonesian government the benefit of international commitment.

Financial support under New Miyazawa Initiative

Japan felt the need to make a plan of overcoming the Asian currency crisis through stabilization of international finance market. For the purpose, the Japanese Finance Minister Mr. Miyazawa expressed to provide US$ 30 billion to meet financial needs in October, 1998.

Cooperation to BAPPENAS

119 experts were dispatched to BAPPENAS. Since prototype models had been already developed, in this period, a priority was given to development of statistical data on national income, trade values, finance, wage and labor. Also, a simulation model was developed. After the middle of the 1990s, efforts were made to improve the existing models rather than develop new models. Further, staff training was undertaken.

(5) The post currency crisis in the 1999s: Reviving the national economy throughdrastic policy reforms

Following the resignation of President Suharto, the government began to work out new political and economic systems. The government had to overcome social unrest, of the weakening national integration, neglect of law and human rights, weak economic recovery, deteriorating welfare and stagnant community development. As a break through, the government laid down the policies toward democratic system, a national unity, a better governance and an economic system for the people, with special reference to globalization and decentralization.

In this connection, seven priority programs were announced. They are poverty reduction, strengthening of micro and small-scale enterprises, stabilization of economy and finance

and strengthening of export, enhancing competitiveness in the sectors other than non-oil and gas, investment promotion through capital market development, infrastructure development, and utilization of natural resources with environmental consideration.

The above policies bore their fruits mainly after President Yudhoyono took presidency seat in 2004. The economy recovered to record a growth rate at 5%. Recovery was limited in unemployment rate and poverty rate. Key to strong economic expansion was the return of foreign direct investment, but FDI has not been so strong as in the past.

Japan decided to support Indonesia's initiative for political and economical reform to realize:

- A sustainable economic growth
- A democratic and fair society
- A peaceful and stabilized society

While Indonesian economy began to attain a sustainable growth and a balance of payment, a new problem appeared. It was deficits in the government finance. Japan decided to help Indonesia in solving the problem. Japan shifted its emphasis in macro economic support from replenishing international liquidity to financing government. Development policy loans were extended under Paris Declaration and Jakarta Commitment.

Program loan: development policy loan (DPL)

1) Background underlying introduction of DPL

The commodity loans for imports of necessities from Japan were less and less important in the 2000s, due to the changes in structures of Indonesian economy and industry and in balance of payment position. In stead, a new scheme became necessary. It is a loan based on policy and institutional improvement support and fiscal policy support. This is categorized as one of the commodity loans but quite different from those for financing the balance of payment.

Indonesian fiscal position deteriorated and the deficit in annual national budget ranged from 1.2-1.4% of GDP in 2003 and 2004. Indonesian budget was highly dependent on oil and gas. The percentage share of the sector in total Government revenue was 68% and 71% in 1980 and 1981. After the period, due to declines in oil prices, the percentage share of the sector in total revenue plunged to 21% in 2003 and 16% in 2004. On the other hand, the needs for poverty reduction were mounting and to secure the necessary fund for the reduction became an urgent issue. This is a background of the change in the emphasis of macro economic support from balance of payment to fiscal policy.

On the other hand, the need for improvement in investment climate is becoming important year by year. This is because foreign direct investment to Indonesia has shown a decline since 1997. Considering the situation, a new scheme was created to support the national economy based on fiscal policy assistance and investment climate improvement support.

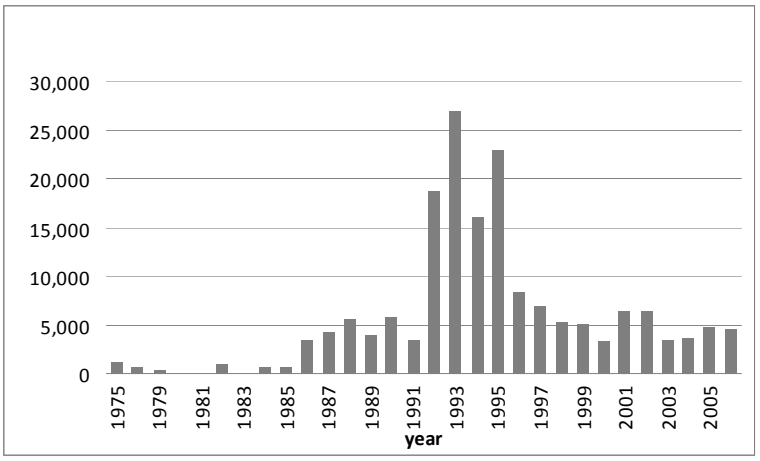


Figure 2-4 Foreign Direct Investment in Manufacturing

2) Past record of DPL

In the past, six loans were extended. The total amount is 103 billion Yen. The following is an example

The fourth DPL in 2008
This is a co-finance with the World Bank and ADB. Total amount was US$1 billion, of which Japan extended US$200 million or 22.08 billion Yen. The loan was allocated to importation of general products. Since macro economy was in a good shape, policy action target was not set in advance. However, considering the necessity of improvement in investment climate, fiscal management and anti- corruption and poverty reduction, target for these areas were set as policy actions.

Policy dialogue

In order for Indonesia to effectively respond to the IMF, the Indonesian government made maximum efforts to vitalize the economy through sustainable fiscal management and further introduction of foreign investment. In the meeting with the Japanese Prime Minister Mr. Koizumi, in September, 2001, President Megawati requested him to send senior level advisors in solving various economic issues. In response to the request, it was decided to hold a series of policy dialogues between Indonesian officials and the senior advisors. The dialogues covered macro economy, banking sector, foreign investment, SMEs development, decentralization and democratization.

The advisors recommended that, in order to overcome the economic crises, it was necessary to enhance productivity in the urban manufacturing sector while maintaining fiscal discipline, rather than spending money in rural areas for social policies. The recommendations were well taken by the Indonesian government as an important reference.

Cooperation to BAPPENAS

After 2000, 15 experts were dispatched. Since human resources within BAPPENAS

were already developed, needs for technology transfer in macro-economic analysis became diminished. BAPPENAS began to realize another need for Japan's cooperation. It is not policy development but planning improvement.

Technical assistance

After 2000, the request for technical assistance for institutional reform increased. Their fields are improvement in financial operation at Bank Indonesia, tax administration improvement, development of capital market, and improvement in investment climate.

1) Dispatch of experts in finance management

Considering that inadequate financial management in banking sector, both of the Central Bank and private banks deepened the wound in financial system, JICA delivered experts for two areas in the improvement of financial management at Bank Indonesia. One is improvement in management for private sector's debt to Bank Indonesia through appropriate data collection of private sectors outstanding for liability to foreign organization. The other was to strengthen capability of analysis in economic situation and of fiscal policy formulation.

2) Dispatch of experts in tax and custom administration

Till the early 1980s, around a half of government revenue came from oil and gas. However, after the 1990s, the proportion has declined sharply and in 2007, about 70% of total revenue was tax and custom. Therefore, it was increasingly important to collect tax and custom in proper and intensive way. In expenditure side, since the need for social and economic development is mounting, it is necessary to secure these funds. For this reason, it was very important to set up efficient tax and custom administration. Further establishment of fair tax system was important to invite investors from foreign countries. In this regard, three projects were implemented

- Tax administration improvement
- Tax administration modernization
- Customs administration improvement

3) Dispatch of experts in development of capital market

One of the causes for the Asian currency crisis in 1997 lied in the lack of capital market and too much dependence on short term finance through banking sector.

It was urgent to develop long-term financial facilities in Indonesia. Development of capital market was one of the ideas.

Technical cooperation for development of capital market goes back to 1996. In the years 2002-2005, capital market development seminars were held under JICA's cooperation. After 2007, experts were dispatched to Indonesia for formulating an effective policy for capital market development.

4) Dispatch of experts in investment climate

Foreign direct investment is indispensable for sustainable growth in Indonesia.

Considering that every country struggles to attract foreign investment, the point is how to create the environment which is attractive to investors. JICA has dispatched 8 experts so far in this regard. Main tasks are to advise Japanese investors on how to advance investment procedure, and to advise BKPM on how to improve investment climate including investment incentives and investment procedures.

2.3. Summary

Two types of economic policy support were provided. One is for stabilization of the national economy in short period and the other is for achievement of sustainable economic growth in long run. The former was realized mainly through non-project finance and related technical assistance, and the latter was technical cooperation for planning and implementation of economic policies.

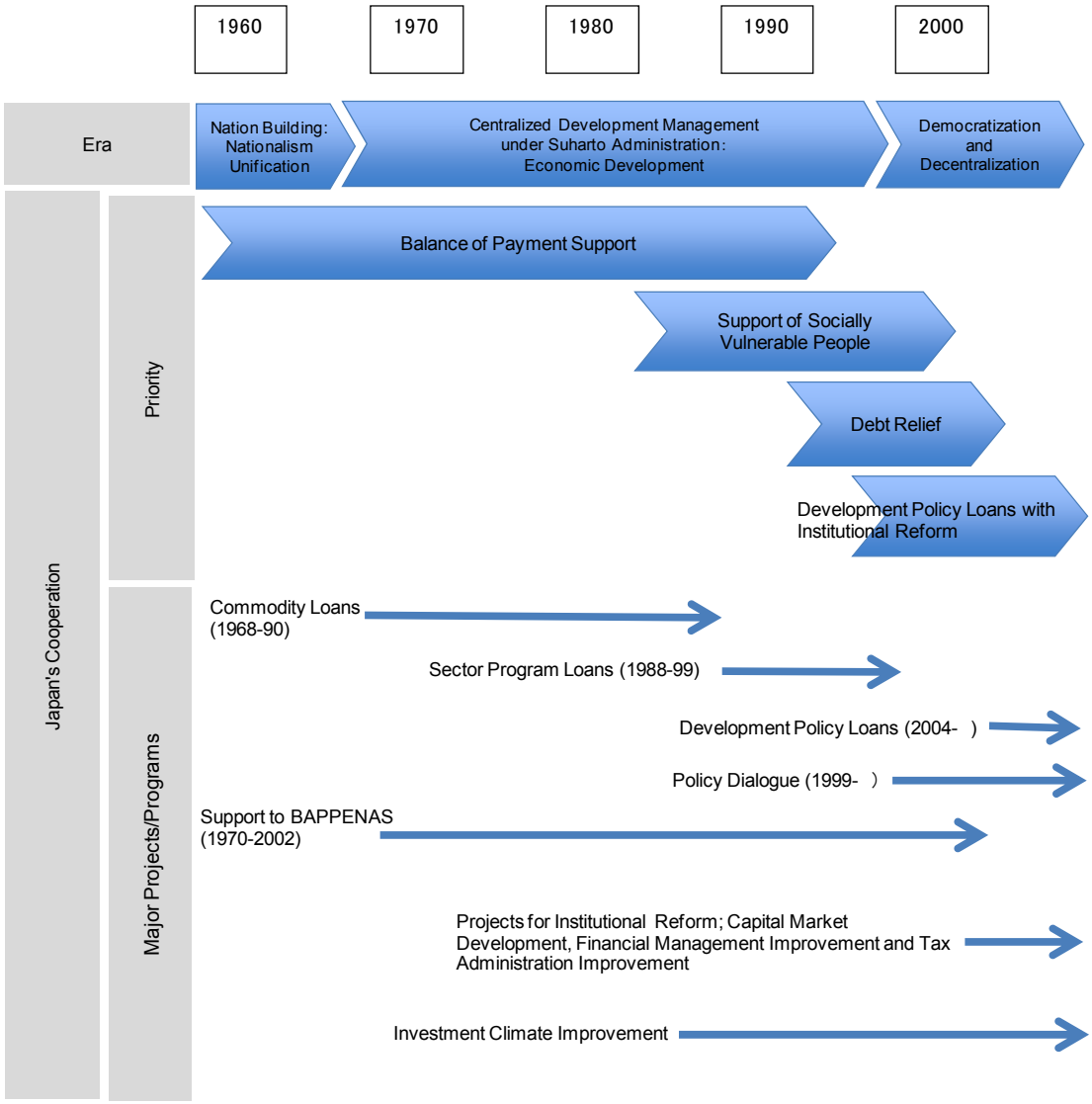


Figure 2-5 Changes of Cooperation in Economic Policy and Macro-economic Management

Non-project finance covers the following three.

- Commodity loans for imports of necessities from Japan under deteriorated balance of payment position in the end of 1960s and the early 1970s
- Finance for accelerating structural change from oil dependent economy to more diversified economy. The finance was accompanied with the ODA loans to the socially vulnerable sector which was damaged by deregulation and abolishment of protection policy

- Emergency financing to help overcoming the Asian currency crisis in 1997-1998, the main objective was to minimize negative impact of the crisis on the poor people through acceleration of social development and job creation. The finance was extended under the co-financing arrangement with the IMF and the World Bank. It amounted to 170 billion Yen.

Long term technical cooperation includes the following three points:

- Since 2004, Japan extended necessary fiscal fund for Indonesia to be able to pursue its stable economic management in line with the spirits of Paris declaration and Jakarta commitment through cooperation with the World Bank and ADB
- Support for the formulation of Indonesian national development plan. It contributed to strengthening of capacity to coordinate various government offices.
- Support for modernizing tax administration, developing capital market and improving in investment climate. These have been indispensable for shaping transparent and fair market economy in Indonesia.

The non-project assistance has been provided not only for short-term but also for long-term activities. The assistance contributed to enhancing planning and projects evaluation capability of the Indonesian governments. The enhanced capacities of the Indonesian government has become a base for it to play a major role in arranging Jakarta Commitment which changed ODA from “donor-driven” to “ownership” and led to integrated utilization of ODA funds.

3. Governance

3.1. Outline of the Sector

Governance sector includes Japanese cooperation to public administration, judiciary, and law making areas. Activities are divided into cooperation strengthening public administration in general including decentralization issues, and concerning human resource development of public servants and security enforcement.

Especially after 2000s', alongside with Indonesian democratization and decentralization progress, there are some cooperation projects aiming at improving effectiveness of the public administration functions which were transferred to local governments from the central government. These projects, for example in education and health sectors, are explained the chapter explaining each subject area.

3.2. Japanese Cooperation in Each Period

Table 3-1 Issues and Cooperation in Governance

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Governance	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Nationalism and State-led Development (to 1966) − National Police was merged to Army (1969)	− Prioritization of Economic Development under Suharto Administration			− Democratization − Decentralization
	Priority Development Issues shown in 5-year plan		− Unification to Single Nation			− Peace & Security − Equality & Democracy − Good Governance
	Japanese Approach for Development Issues					− Legal and Administration System Support − Decentralization Supports
	Priority Programs/ Projects for Japanese Cooperation		− Statistics System	− Statistics System	− Statistics System − Census	− Civilian Police − HRD for Officials

Overviews of the sector and Japanese cooperation in each period are as below.

(1) The 1960s' to the 1990s'

There was no Japanese cooperation in the governance sector in 1960s'. Also, under the President Suharto until 1998, there were a few projects such as installation of computing system to the Central Bureau Statistic. This might be because of the prioritization on economic development than public administration reforms in the era.

(2) The 2000s'

Asian economic crisis in 1998 led to the demise of the Suharto administration on May 21, 1998 and President Habibie was inaugurated at the same day.

President Habibie made policy announcements in his speech on television on the day of inauguration, 1) political reforms, improvements in quality of life, and democratization, 2) eliminations of corruptions and nepotisms, 3) amendments of laws and regulations for general election, 4) amendments of laws and regulations for eliminating monopoly, and 5) responsibilities in international society. This was an important turning point in Indonesian society.

Following the announcements, President Habibie worked on political reforms and democratization and decentralization processes were accelerated.

- June 1998: Repeal of permission system in publication, liberalization of forming labor parties
- October 1998: freedom of speech in public place
- January 1999: three political laws are enacted like general election law
- March 1999: competition law was established
- April 1999: local administration law (22/1999)、central and regional finance balancing law（25/1999）were enacted
- June 1999: the first general election under the new laws
- August 1999: local referendum on East Timor
  →78.5% supported independence. Over 600 people were dead in conflicts
- October 1999: the first Peoples Representative Council (*Dewan Perwakilan Rakyat*: DPR)
- President Wahid was inaugurated by the presidential election on 20th October
- July 2001: Recall of President Wahid and Vice-president Megawati took over to the presidential position
- April 2004: the second general election. Partai Demokrasi Indonesia-Perjuangan lost large number of the seats
- July 2004: President Yudhoyono was elected by direct election
- July 2009: President Yudhoyono was re-elected

Now, President Yudhoyono is in his second administration period.

It is important to mention that Indonesia has proceeded democratization and decentralization processes even under the time of political unrests.

Japanese cooperation of 2000s' is focusing on supports in these democratization and decentralization processes.

1) Supports for Democratization

Regarding democratization supports, Japan supported practical implementation procedures of the first general election in 1999 by providing approximately US$35million in grant and dispatch of 20 short-term experts. Before the second general election, in December 2002, Japan dispatched a project formation study team to prepare comprehensive general election supporting programs. The second general election in 2004 was large-scale and complicated processes because of both central and regional council members' together with president elections. In addition, the first direct election of the presidency was planned. Thus the program aimed at preparing for smooth implementations of the processes. Then from April 2003, a technical cooperation project "Assistance to General Election" was implemented to support Indonesia General Election Commission for smooth election processes. In this project, Japanese experts provided practical supports such as; regional electoral commissions training programs, electoral information systems installation, procurements and distributions of materials.

Japan also has supported juridical reforms. Japan had invited Indonesian juridical experts to seminars in Japan, and from 2007 to 2009, "Project on Improvement of Mediation System" was implemented to amend juridical mediation system, establish training mechanisms for mediators, and publicities on the new mechanism.

In terms of democratization, supports to Indonesian police, which was separated from the National Army in august 2000, is an important cooperation project.

Support for Reforming National Police

As a part of democratization process, in 1999, the Indonesian National Police became independent from the National Army. At that time, Indonesian government requested Britain, USA, Australia and Japan for supporting introductions of "Civilian Police[1]" activities into Indonesia. Japan sent an advisor to the Indonesian national police commissioner, and has implemented pilot projects in Bekasi and Bali.

According to the first and current project leader Mr. Yamazaki, he started his assistance targeting at gaining trusts from people by focusing 'honesty' and 'quickness'.
Honesty means to gather evidences at crime sites, to show their sincere efforts to people around at the sites. Quickness means to respond quickly to citizen's inquiries. Through these two values, he has tried to support Indonesian police to get trusts from Indonesian people.
Later in 2004, the first BKPM was constructed and field police activities are introduced as a third main activity for the pilot project.

In Bekasi pilot project, there are two core ideas: to respond to citizen's crime and accident reporting 1) honestly, and 2) quickly. The project intends to get trust from

[1] According to the first and current project leader Mr. Yamazaki, civilian police implies an emphasis on safety of people whereas military police prioritizes national security.

people by showing these two ideas through policemen's activities. Japanese police provides technical supports in field police activities and scientific identifications.

Field police activities mean to establish quick responding system to citizen's reports and inquiries, and reinforce BKPM [2]and Polpos[3] functions. Before the project, there was no clear statements on are responsibilities and work regulations. In BKPM, each police officer was assigned to a particular area where the officer is in responsible to safety of residents based on the examples of Japanese police boxes, or "*Koban*". Police officers worked around-the-clock in BKPM by shifting work system. Also, in suburban area of Bekasi, Balai Polmas[4], residential police box where police officer and his/her family lives and the officer is in charge of policing activities around like Japanese "Chuzai-syo". This Balai Polmas was established by Indonesian police officer who went Japan for training programs and found the value of chuzai-syo. Indonesian National Police has recognized the effectiveness and adaptability of BKPM system and gave instructions to regional polices all over the Indonesia to establish at least one BKPM to each region.

BKPM

Chart 3-3 BKPM
BKPM constructed by community funding

Community leader and the chief police officer All officers are females.

For scientific identification of evidences, Japanese police officers participate in crime site investigations and provide on the job training to the Indonesian officers as well as trainings in laboratory. As a result, Bekasi identification unit is recognized as the best identification team in Indonesia and the Indonesian National Police asked Bekasi team for trainings of officers in other regions in Bekasi.

In Bali, a project is called as project on "Building a Society with a Sense of Safety in Bali". In this project, tourist police officers are patrolling hotels, restaurants, money exchanges, and souvenir shops to give secure feelings to tourists. The basic philosophy is common to the Bekasi project.

[2] Abbreviation of "Balai Kemitraab Polisi dan Masyarakat" meaning "partnership center between police and citizen"
[3] Polpos are the station post for police officers which has existed long time in Indonesia
[4] POLMAS means Indonesian community policing activities.

In addition to the pilot projects, every year from 2002, Indonesian police officers of young and middle commander level went to Japan for training programs. By 2010, the number of ex-trainees reached to about 600. The number might be small compared to the total of 400 thousand in Indonesian National Police. However, it is expected that these trainees bring sense of responsibility to people's security throughout the police organization especially when they promoted to the commander positions. In this cooperation, pilot project sites received police officers from other regions of Indonesia for trainings and inspections and some of these visitors have tried to introduce Bekasi models of civilian police to their own areas.

Project Approach

In pilot projects, Japanese police officers provide on-the-job-training to Indonesian officers at actual crime sites. Also Japanese officers help Indonesian officers establishing Indonesian-style activities.

Even training programs in Japan, class room lectures are minimized and make Indonesian officers stay and watch Japanese officers' daily activities side by side. Indonesian officers watch Japanese officers' activities and raise questions by themselves. This training methodology creates rather heavy loads to Japanese field officers. However, Japanese side considers giving opportunities to find questions through experience is significantly important.

The effectiveness of community police activities is highly evaluated. Indonesian National Police issued "POLMAS notice[5]" in 2005 by its initiative. This might mean spread out of Indonesian community police activities started from Japanese cooperation.

Five Principles of POLMAS Notice

1) Transparency and accountability
2) Participation and equality
3) Personalization (police officer establishes personal relationships with residents and provide police services.)
4) Long-term assignment(same officers in same places in long-term)
5) Decentralization and autonomy

2) Support for Decentralization

In response to decentralization, several supports are provided in each specific sector for 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 to 2011): improving practical management capacities of watershed management organizations of main rivers in Indonesia
- In water supply sector, Japan provides technical supports for improving management and service provisions of local water authorities
- REDIP: The Study on the Regional Educational Development and Improvement Project(1999 to 2001): Establish school-base management and local participation mechanism through pilot projects

[5] Indonesian National Police Commissioner (SKEP/737/X/2005)

- Improvement of District Health Management Capacity in South Sulawesi Province Project(2007 to 2010): Develop capacity of local governments in planning and implementation of health care

In addition to these specific projects, Japan provided supports to human resource developments of governmental officers. One of the main projects of the area is "Human Resource Development for Local Governance (Phase ： 2002 to 2005, Phase 2： 2005 to 2007)". In addition, there are some trainings of officials such as trainings for council members of *Dewan Perwakilan Daerah*(DPD: Regional Representatives Council).

Human Resource Development for Local Governance (Phase ：2002 to 2005, Phase 2： 2005 to 2007)

As a result of enacted laws in relation to decentralization and local autonomy, there happened several changes.

- Delegation of public administration authorities to cities and regencies except diplomacy, national security, police, and region
- Local branch offices of central governments were transferred to under local governments. Change national government officials to local government officials.
- Transfer revenue resources to local governments
- Local chief executives are elected by local council members (From 2004, elected by local residents)

Local governments have to take autonomous actions after the decentralization and capacity development of local officials were strongly required.

This project is regarded as a support to make local governance working practically when new frameworks were established without practical details. The project focused on the government officer training institution. This was because of the fact that officer trainings before decentralization had been significantly centralized. There was no difference between central and local governmental officer trainings also. This project intended to separate these chains and make local government officers thinking and working autonomous ways.

The basic principles of the project were "never bring in the ideas created before starting the project", and "develop discussions based on the consciousness and awareness of stakeholders". It took nearly a half a year just for discussing with Indonesian counterpart officials on "how to implement local government officer training", "how to foster trainers", "how to create better cooperation among provinces, regencies and cities", and so forth. This long and time consuming discussion process was supported by former vice-minister of Home Affaires, Ms. Siti Nurbaya.

Instead of providing concepts and methodologies from Japanese side only, in this project, Japanese experts and stakeholders discuss all matters to the bottom and activities were designed based on the discussions. In other words, the project intended to take a tailor-made approach.

It is pointed out that intensive discussions on organization and human resource development themselves are the heart of the project. In Suharto administration, highly centralized, the central government planned officer trainings and hold assignment rights. Thus local officials had no intention of thinking and working autonomous ways. This project was considered as leaving a new culture or custom of self-improvement process: considering the core problem, and finding solutions by themselves. After the project, institutional mechanism such as 'ISO9001:2000' was installed to local government in north Sumatra and training guideline was prepared by Ministry of Home Affaires.

3) Reinforcing Project Management Capacity

In terms of capacity development in governance sector, apart from cooperation projects, there have been sincere efforts through daily activities and exchanges between aid agencies and Indonesian counterpart agencies of them. For example, JBIC (currently JICA) worked together with Indonesian counterpart agencies on project formulations, implementations, and monitoring. Through this process, aid agencies tried to transfer and exchange project management experiences.

3.3. Summary

Japanese cooperation has supported establishing practical and workable mechanisms and fostering human resource development under the new paradigms of democratization and decentralization.

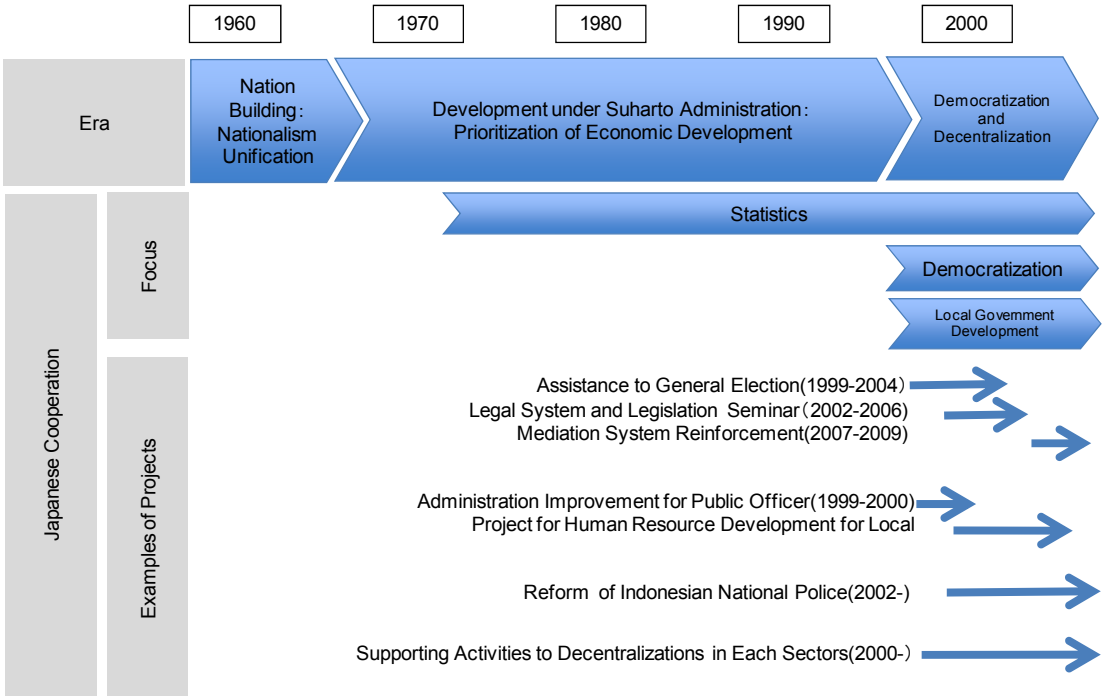


Figure 3-1 Changes of cooperation in Governance

As described above, in Japanese cooperation projects like "Human Resource Development for Local Governance", Japanese experts have tried to support Indonesian own initiatives of establishing Indonesian ways or methodologies based on the intensive

discussions. Regarding police reform activities, Japan Police dispatches active Japanese police officers to the project site and they worked together with Indonesian police officers. Although Japanese police officers provide technical knowledge in OJT to Indonesian officers, they also respect Indonesian initiatives especially when comes to the area deeply concerning culture and society of Indonesia. Even in training programs in Japan, Japanese police show what they are doing but wait for questions raised by Indonesian officers.

In this sector, it seems that Japanese cooperation has tried to support Indonesian people establishing Indonesian ways in practical matters under the new frameworks of democratization and decentralization. Instead of installing Japanese ways as they are to Indonesia, Japan help Indonesian people develop mechanisms suitable to Indonesian reality by providing Japanese experiences as examples for further considerations.

4. Regional Development

4.1. Overview of Regional Development and Cooperation

Regional development is not a specific sector, but a regional approach to development. It is intended to: 1) target specific region, 2) take an integrated and cross-sectoral approach, and 3) aim at specific objective.

The following table shows an overview of regional development in Indonesia and Japan's cooperation.

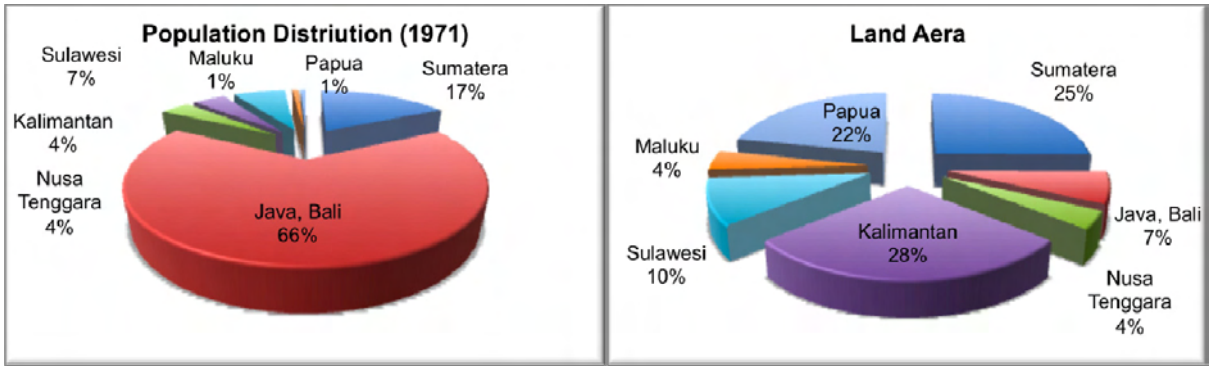
Table 4-1 Issues and Cooperation in Regional Development

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Regional Development	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Concentration of population into Java and Bali		− Disparity	− Regional disparity	− Regional disparity − Decentralization
	Priority Development Issues shown in 5-year plan	− Starting development form Java − Development of outer islands − Migration from Java into outer islands		− Development of outer islands	− East Indonesia Development (1990)	− Reducing regional disparity − Making decentralization operational − Regional development by local initiative − Regional approach in the development
	Japanese Approach for Development Issues	− Regional development master plan		− Integrated regional development master plan	− Reducing disparity	− Program approach to East Indonesia development
	Priority Programs/ Projects for Japanese Cooperation	− Integrated regional development master plan (Java) − East Java province (1975) − Central Java province (1976)		− Integrated regional development master plan (Sumatera) − Northern part of Sumatera (1988)	− East Indonesia development (South Sumatera, West Kalimantan, South Sulawesi) − Community development for poverty alleviation	− East Indonesia development − South Sulawesi Regional Development Program − North-East Indonesia Regional Development Program

Source: JICA Study Team

(1) Regional Development in Indonesia

Issues in regional development have changed overtime. There have been three major issues. 1) Firstly, from the 1960s to the 1980s, major issue was the concentration of population in Java & Bali. 2) Secondly, in the 1990s, regional disparity became a major issue. 3) Thirdly, in the 2000s, a major issue was how to make decentralization operational. The Indonesian government has been faced with the challenges to tackle these issues.



Source: BPS

Figure 4-1 Distribution of Population in 1971 (Left) and Land Area (Right)

(2) Japan's Cooperation

Japan's cooperation has been responding to support Indonesia's challenge in two ways. The first one is the support to the preparation of integrated regional development master plan in the1970s and the 1980s. The second one, after the 1990s, is a support to strengthening capacity for regional development. The cooperation started in Java and continued in Sumatera, Sulawesi and East Indonesia.

Table 4-2 Trend of Regional Development Projects

	Mode of Cooperation				Year				Total
	Development Study	Technical Cooperation	Grant Aid	Loan	1970s	1980s	1990s	2000s	
Master Plan	7	0	0	0	3	1	2	1	7
Capacity Development	0	10	0	0	0	0	4	6	10
Social Development	0	2	0	0	0	0	2	0	2
Administration	0	1	2	0	0	0	0	3	3
Rural Infrastructure	0	4	0	4	0	0	3	5	8
Local Industry	0	1	0	0	0	0	0	1	1
計	7	18	2	4	3	1	11	16	31

Source：JICA Study Team

Regional development in Indonesia and corresponding Japan's cooperation are summarized in the figure below.

4.2. Transition of Regional Development and Cooperation over Periods

(1) From the 1960s to the early 1980s

Regional development in Indonesia started in Java in the 1960s and the 1970s. In those days, the economy of Indonesia was agriculture-based. There was a problem of a limited carrying capacity of lands to sustain a large population. Java had to be developed in the two ways: (1) enhancing agricultural productivity and (2) developing other sectors than agriculture. Increase of food production was still major issue in regional development.

In 1971, approximately two-thirds of the national population lived in Java and Bali, which represented only seven (7) % of the national land area. The concentration of population gave rise in the policy need for population dispersion. Development of outer islands such as Sumatera and Kalimantan also became the major issue of regional development. This was accompanied by migration policy into outer islands.

Japan's cooperation had responded to these initiatives. Support was provided to making of integrated regional development master plans in East Java (1975) and Central Java (1976).

Java Regional Study, East Java (1975)

This study project is the first Japanese support to regional development master plan in Indonesia. The plan aimed at the development from regional perspective and inpartial distribution of development benefit. The Master Plan proposed two strategies: Top-pull strategy in Surabaya and vicinity by industrial development, and Bottom-push strategy in rural area by water resources and rural development. The Master Plan proposed 8 programs and a series of projects. The plan proposed priority programs: 1) Industrial program, 2) Water resources development program (Solo and Brantas river), 3) Agricultural development program in Madura, 4) Sourthern coastal area development program, 5) Rural development program, 6) Community facilities development program. It also proposed supporting programs: 7) Vocational training program, and 8) Strengthening BAPPEDA program.

Many of projects have been implemented. Wonogiri Irrigation and Upper Solo River Project is one of these projects. Southern Coast Development Plan, East Java conducted in 1978 was also selected for implemention.

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(2) The Late 1980s

Major issue was development of outer islands, and Japan's cooperation responded to it. Support was provided to the preparation of integrated regional development master plans for Northern part of Sumatera (1988) and Southern part of Sumatera (1991).

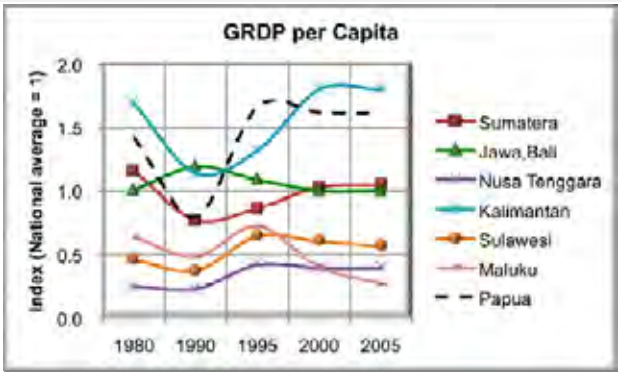
Integrated Regional Development Plan for the Northern Part of Sumatra (1988)

This study prepared a long-term development plan for the period from 1989 to 2008 and proposed priority projects. The plan classified the study area into 24 development areas, assessed their potentials, and proposed 11 priority areas. In each priority area, an integrated development program was proposed. The plan also proposed 430 projects in each sector. Many of the proposed projects have been fundeded by national budget, JICA and OECF (presently JICA).

Utilizing the results of the study, the government of Indonesia prepared the national development plan. An integrated development program was regareded as supplement to the weakness of the convensitonal sector approach in the national development plan. The master plan was translated into Indonesian language and distributied to state minisitries and provincieal government. The master plan was utilized as a prototype in the process of preparation of a national spational plan.

(3) The 1990s

In the 1970s and the 1980s, Indonesia enjoyed rapid economic growth. The sectors other than agriculture grew rapidly. At the same time, economic wealth concentrated in developed areas, that is, Java. This brought about income disparity among regions. In the 1990s, the income disparity between East and West Indonesia came to the central issue; East Indonesia was left behind. The president announced "East Indonesia Development" policy in 1990. In the late 1990s, with the change of the government, Indonesia had started to accelerate decentralization.



Source: BPS

Figure 4-2 Trends of GRDP per Capita

Japanese cooperation supported their initiatives in three ways.

Firstly, cooperation was targeted at East Indonesia. Support was given to Comprehensive Development Plan for the Western Part of Kalimantan in 1997.

Secondly, a field level approach was commenced targeting the areas left behind. These projects included "Integrated Regional Development Project in Baru District (1995-2001)" in Sulawesi and "Participatory Rural Community Development Project in Sulawesi (1997-2002)"[6].

Thirdly, support was given at the policy level. Such support included "Policy Support for East Indonesia Development (1995-98)".

[6] Project on Strengthening Sulawesi Rural Community Development to Support Poverty Alleviation Programmes implemented from 1997 to 2002.

Project on Strengthening Sulawesi Rural Community Development to Support Poverty Alleviation Programmes implemented (1997-2002)

The project aimed at 1) developing capacities of Takarar District in South Sulawesi province for participatory community development, and 2) disseminating the results to Sulawesi by training program development. The project developed new development program, so-called SISDUK system. This system was internalized into the planning system by introducing the district ordinance in 2002. Under this sisytem, development projects were planned, approved, funded, implemented and managed within the district. By introducing SISDUK, the time period of whole process of project planning was shortened into 3 months from 18 months.

Currently, many projects are initiated by people. Many leaders of community development were fostered. Takarar district attracted many study trips from outside.

（4） The 2000s

A couple of decentralization laws came into effect in 2001, and were amended in 2004. A new planning system was introduced in 2004. It emphasized the local initiatives for planning. In the 2000s, in line with the decentralization policy, a main challenge was capacity development of local authorities and stakeholders for locally initiated development.

Japan’s cooperation accelerated supporting Indonesian initiatives.

At the central and policy level, “Regional Development Policies for Local Government (2001-05)”, and “Project for Human Resources Development for Local Governance (2002-07)” are implemented. These projects gave policy support to the participatory development at the community level.

As a field level approach, “Sulawesi Capacity Development Project (2007-12)” has been implemented.

In addition to these, a program approach was used for East Indonesia Development. Local government, as a main actor of regional development, gained benefit from program approach. They could predict the resources available from Japan for their development.

Sulawesi Capacity Development Project (2007-12)

The project aimed at developing capacities of stakeholders of six provinces of Sulawesi, so that then could promote regional development by their own initiatives. Main focus of the project is strengthening planning capacity of local government and stakeholders. Then, they can identify their issues and problems of their regions, and prepare action plans to solve these problems. These activities have made new planning system operational. Currently, many districts have prepared planning documents that include midium term development plan.

Planning documents in Longa Village, Wakatobi Regency, South East Sulawesi Province

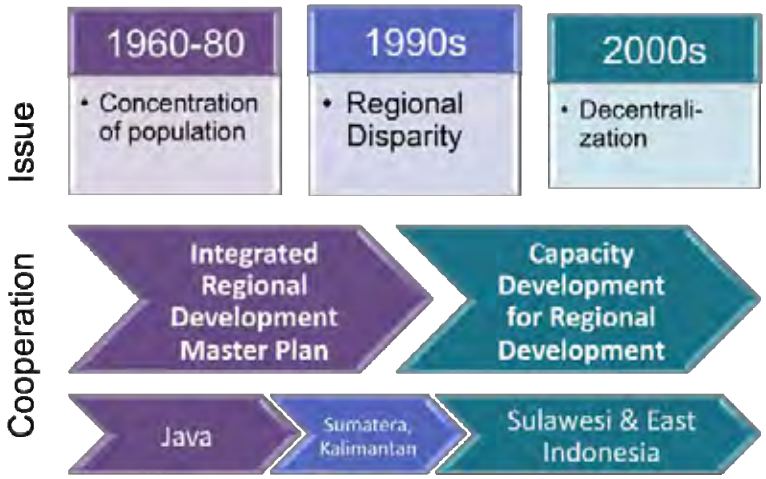
4.3. Summary

Responding to the Indonesian initiatives for regional development, Japan's cooperation supported them in two ways. Firstly, in the 1970s and the 1980s, support was given to the preparation of integrated regional master plan, which brought about regional approach to the planning of the national development plan. Secondly, in the 2000s when decentralization was accelerated, Japan's cooperation supported capacity development of local administration and their stakeholders for locally initiated regional development. It contributed to: 1) strengthening local planning capacity, which give a foundation of regional development by local initiative, 2) making decentralization operational, 3) introducing regional approach into the national development plans, and 4) indirectly, making the society more democratic and more stable at the local level.

(1) Japan's cooperation to regional development was provided in two ways.

1) In the 1970s to the 1990s, support was given to the preparation of integrated regional master plan.

2) After the late 1990s, responding to various emerging issues with the acceleration of the decentralization, cooperation in capacity development has been flexibly extended at central, provincial, district, and village levels for fifteen years.



Source: JICA Study Team

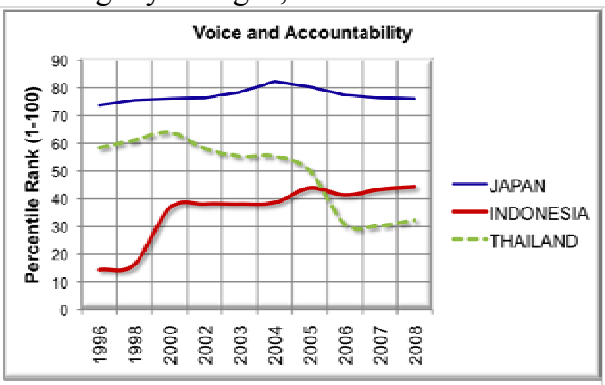
Figure 4-3 Indonesia's Initiative and Japan's Cooperation

(2) The support to making integrated regional development master plan gave policy implications to BAPPENAS. These are: 1) the recognition of the importance of regional approach to make up for the weakness of conventional sectoral approach in the national development plan; 2) giving a prototype of the regional development master plan; and 3) introducing regional approach in the national development plan.

(3) Field-level cooperation in the capacity development of local administration and stakeholders strengthened the capacities of those people and organizations for locally initiated regional development. They have been able to draw a future vision of their region, identify the issues and problems of the region, and prepare action plans to solve these problems. Accordingly, it has been making decentralization operational.

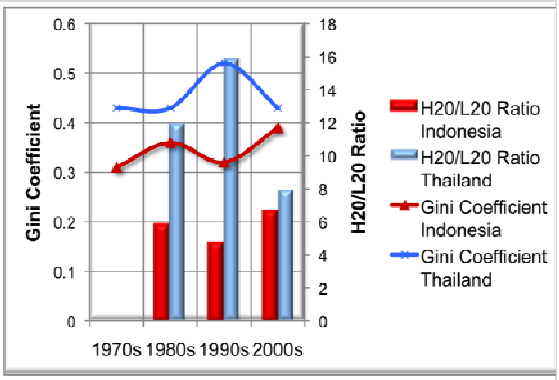
(4) Cooperation in regional development and decentralization contributed to making a regional society more democratic. Governance indicators improved for Indonesia after the late 1990s (Figure 4-4). This is the result of the continuous challenge from the late 1990s. As a result, there has been no social turmoil even in the election. Indonesia is on the right track in the process of creating democratic and stable society.

(5) Indonesia was rather equal society up to the 1990s according to the equity indicators prepared by ADB together with other organizations (Figure 4-8). However, in the 2000s, disparity between rural and urban areas as well as outer islands and Java has been slightly enlarged, which is the current issues to challenge.



Source: World Bank, World Governance Indicators

Figure 4-4 Governance Indicators



Source: ADB and others

Figure 4-5 Equity Indicators

(6) Through development cooperation to the regions, the relationship and mutual trust between people in the region and Japan have been strengthened. People in the region have been outward looking through interaction with Japanese and have been willing to have closer relationship with Japan.

(7) So far, local planning capacities have been strengthened. However, local technical capacities to solve technical problem have still been weak. The division of duties and responsibilities among state and local government has not been streamlined.

(8) Regions have become main actors for making a better society. In globaling societies, there will be many challenges for regions. Regions have to be outward looking. It is a time to envisage new types of cooperation for an interactive

partnership for regional development. These are probably local-to-local, locally initiated, horizontal and interactive, mutually beneficial, and networking. These types of cooperation might strengthen the partnership between the both people; strengthen friendship, mutual benefit, and mutual trust; and eventually contribute to the peace and prosperity of the Asia in the future.

5. Transportation

5.1. Outline of the Sector

Transport sector is basically composed mainly of 4 sub-sectors that are road, railway, aviation, and port/sea transport. National Medium-Term Development Plan (from 2004 to 2009) indicates that transport sector plays an important role for enhancing economic growth and integrating national territory as an island country. The following sentence describes the sub-sectors of transportation.

In Indonesia, total road extension is about 440 thousand kilometer in 2004, and the municipalities called Kota/Kabupaten have jurisdiction more than 80% of the total extension road. After the World War Two, road transportation turned to be main measure of land transportation according to the spread of motorization in Indonesia for the background of less-developed railway system. Road transportation dominated about 90% of passenger traffic and about 50% of cargo traffic in 2008. Upgrading and improving of the road network are considered to be of large significant for economic growth in Indonesia. At this time, the total road extension is about 800 kilometer due to the expressway development invested by private fund concentrating on Java Island. However hard-core traffic jams in urban area and road damage of inter-regional road remained problematical, additionally the capability of road maintenance by the municipalities also has been becoming problematical based on the decentralization trend in Indonesian administration system.

The railroad track was laid in even Madura Island and Sulawesi Island in previous time; the railway operations only in Java Island and Sumatra Island are in business. Railway network in Sumatra Island divided three lines that specialized in cargo transportation. Therefore, only the railway in Java Island keeps railroad network as a matter of fact. Since railway restructuring became a problem in Indonesia, the railway management body has been changed from the state railway to the public corporation in 1991, and the public corporation has been privatized under two-tiered system. Currently the central government owns the railway infrastructure and conducts the railway infrastructure maintenance; meanwhile the railway company called PT.KA wholly owned by the central government owns the railway wagons and facilities and conducts railway operation.

Due to the geographic condition that extensive national territory of Indonesia consists of quite a few islands, the aviation is an important transportation measure. Consequently air traffic demand has been soaring in these days according to economy growth. Through the Asian Currency Crisis in 1997, and then air traffic demand increased more than 20% annual due to reduction of air traffic fare based on the deregulation of aviation industry. Air transportation is supposed to expand worldwide; accordingly the demand of air transport is expected to increase in the future. The government plays a leading part in the maintenance of security system regarding airport and air route, assurance of demand capacity, and the airport development in rural area. At the same time the government takes a course of PPP scheme for development of ground facilities affirmatively.

In Indonesia, the role of sea transportation of both passenger and cargo is very

important. Sea transport has several advantages against the air transportation, e.g., the possible of mass transportation, the possible for alternatives corresponding demand and distance, the possible for establishment of more detail network, cheap price for common, and so on. Consequently the sea transportation became vital mode in Indonesia. However the development levels of seaport and sea transportation are not enough to maintain the standard of sea transport and become problematical points, e.g., port facility improvement for international container handling, local port development with the aim of dissolution of gap among the regions, strengthen of port/ maritime security, and so on.

5.2. Transition of Sector Development and Japan's Cooperation Over Periods

The following table indicates the development efforts in transport sector in Indonesia and Japan's cooperation. The major international assistant scheme in transport sector of our country is ODA loan; total amount of ODA loan amounts to 982.5 billion yen, and total amount of ODA grant amounts to 8.7 billion yen (until 2007).

Table 5-1 Issues and Cooperation in Transportation

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Transportation	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Serious Injured Transport Infrastructure − Limited Domestic Budget − Road Extension; 83,852km(1968) − Railway Passengerl;70,437 thousand(1968) − Air Passenger; 0.382Million(1968) − Damage Rate of National and Provincial Road *(88%)(1968)	− Development of Transport Infrastructure inducing economic growth − Bluebook as candidate project list for international cooperation − Road Extension;198,455km(1984) − Railway Passengerl;43,270 thousand (1984) − Air Passenger; 6.335 million(1983) − Damage Rate of National and Provincial Road (58%)(1973) (17%)(1980)	− Policy Changeover toward Private Investment Enhancement − Road Development through BOT scheme − Road Extension;271,175km(1989) − Railway Passengerl;50,062 thousand(1989) − Air Passenger;9.492 million(1989) − Port Thruoughut;105 million ton(1989) − Damage Rate of National and Provincial Road (7%)(1987)	− Increasing budget of transport infrastructure development − Hardship of adjustment among municipalities under decartelization − Establishment of the Ministry of Residential Infrastructure − Hardship of Land Acquisition − Road Extension;355,363km(1998) − Railway Passenger;169,800thousand(1998) − Air Passenger11.134 million(1998) − Port Thruoughut;185 million ton(1998) − Damage Rate of National and Provincial Road (0%)(1993)	− Window Period of development project due to Economic Crisis − State-owned Company Reform and private &local government participation into infrastructure project due to regal revision of road/land /rail/Air /Sea Transport − Development under decentralization framework − Road Extension;437,760km(2008) − Railway Passenger;203,000 thousand(2008) − Air Passenger;45.540million(2007) − Port Thruoughut;191 million ton(2005)

	Priority Development Issues shown in 5-year plan	− National Security and Rehabilitation of Devastated	− Equal Distribution of development and development benefit from nationwide resource exploitation	− Transport Infrastructure Development by Private Fund (under BOT scheme)	− Transport Infrastructure Development in Rural Area − Eastern Indonesia Development	− Transport Infrastructure Development by PPP Scheme − Ensuring Transport Safety
	Japanese Approach for Development Issues	− Start of ODA loan projects − Technical cooperation from the ground up	− Development of basic transport infrastructure as national framework	− Development Plan and Project proposed in Master Plan supported by ODA	− Development study and ODA loan covering rural area	− Strengthen security and security regime − Comprehensive Urban Transport in Metropolitan Area
	Priority Programs/ Projects for Japanese Cooperation	− Rehabilitation of main road infrastructure concentrating on rural area − Rehabilitation of Java trunk railway − Production of Dredge / ferry boat, Expansion of shipbuilding Plant, Rehabilitation of Sea Transport Infrastructure	− Expressway development of in Jakarta metropolitan area − Railway Development in Jakarta metropolitan area based on Master Plan − Launch of airport infrastructure development assistance (Bali) − Shipbuilding and Navigation System − Development of international and local seaport − Ferry Transport	− Development of General Trunk Road and Bridge − Establishment of Urban Area Master Plan − Railway Development in Jakarta metropolitan Area (efficiency-oriented) − Airport Infrastructure Development (Balikpapan) − Implementation and Establishment of Port Master Plan	− Development and Rehabilitation of urban /Rural Trunk road − Eastern Indonesia Development − Construction of Double Truck of Java trunk railway − Railway Development in Jakarta Metropolitan Area − Airport Infrastructure Development (Surabaya, Padang, Palembang) − Development of non-Petroleum Products Export − Strengthening of Sea Transport in eastern region	− Regional Measures of Eastern Region − Installation of Asset Management Scheme to infrastructure development − Expressway Development by PPP scheme − Construction of Double Truck of Java trunk railway − Jakarta Urban High-Speed Railway Plan (MRT) − Strengthening of Aviation Security System − Long-Term Policy of Aviation Sector − Port Development Plan in Metropolitan − Strengthening of Port and Sea Transport Security System − Development of Domestic Shipping

(1) Japan's Cooperation in the 1960s

In the 1960s Japan's cooperation to Indonesia as postwar reparations started. Project-type ODA loan intended to develop economic infrastructure, which was integral to growth of Indonesian economy started in 1968. The top share of ODA amount is power sector (27%), on the heels of power sector the next is mining and manufacturing sector (25%), and the next is transport sector (18%) consisting of port/sea transport

projects (coastal radio transmission, harbor dredging, etc), road construction, railway rehabilitation and so on.

1)Road

Until the early part of 1970s the covered area of cooperation in the field of road sector concentrated on road rehabilitation/repair projects in Sumatra, Kalimantan, and Sulawesi Island rather than those in Java Island. It considered being important to develop basic infrastructure at national level for keeping of national uniformity after the post-war and post-independence commotion stage. In Sumatra Island, the cooperation covered about 60% with a central focus of southern part of total road extension of main arterial road, total extension is about 2,500 kilometers; the route runs right across the Sumatra Island between southern edge (Bakafuni in Lampung) and northern edge (Banda Aceh).

2）Railway

In this period, the priority of railway development was lower than that of road development respectively. And then Japan's cooperation was implemented without hesitating such as, "Repair/Improvement on North Java railway track and bridges", "Increase of diesel car procurement", and so on.

3）Port and Sea Transport

Since early development phase Japan's cooperation to sea transport sector was implemented much, and many ODA loan projects were also implemented such as "Build of dredge ship", "Build of ferry boat", "expansion of dockyard", and so on in the 1960s -70s.

（2） Japan's Cooperation from the 1970s to the Early 1980s

In the 1980s, the share of Japan's cooperation to transport sector exceeded the power sector share (17%) and took 29% at the largest. In this period, Japan's cooperation took transport infrastructure development as national backbone intensively and combined with economic infrastructure enhancement policy by Soeharto administration.

1)Road

In this period, the main focus of Japan's cooperation in the field of road development placed guard at Jakarta metropolitan area project, e.g., 'Jakarta Inner-City Expressway Development project (1978-1987)'. The flyover projects such as Slipi, Tomang, Cawang (1984), Semangi, Taman Ria (1987), etc and in addition about 20% of the expressway projects in Jakarta metropolitan area were implemented by Japan's cooperation loan in this period.

2）Railway

In the 1980s, the renovation project of Java's northern trunk railway line was carried out by ODA loan. The time-distance between Jakarta and Surabaya was diminished 4 hours

from 16 hours (in the 1960s) to 12 hours (in the 1980s) by the successive projects regarding railway track repair. Furthermore it takes 9 hours to commute the same route due to the appearance of limited express train called “Argo Anggrek” produced by the state-owned company, “PT.INKA”.

In regard to the transport sector, Japan’s cooperation formed new scheme consisting of two phase; the beginning phase is to establish a master plan covering the specific sector and area as a development study; and the later phase is to implement each projects in the master plan by mean of existing scheme, e.g., ODA lone, technical cooperation, and ODA grant. The representative case is “The railway modernization project in Jabotabek area” as a package program consisting of the elevation, the electrification, the double tracking, station upgrading, etc. have implemented based on “The study on railway transportation master plan in Jakarta metropolitan area” has being continued for twenty years.

3）Aviation

In this period, the transport needs not only of sea transport but also of air transport much-expanded as transportation measure between islands in Indonesia. Considering the above background, in the aviation sector, the airport development projects based on the feasibility studies, e.g., “Bali International Airport Development Project”, “Padang airport construction project in Sumatra Island (E/S)”, etc., were started under ODA loan scheme mainly.

4）Port and Sea transport

In this period, the number of projects in port/sea Transport is the largest through the time series of Japan’s cooperation, a variety of ODA loan project in regard to shipbuilding project, marine navigation system development project, etc., whose projects were implemented as well as in Japan. Meanwhile, at the beginning genuine Japan’s cooperation to port/sea transport was promoted with an emphasis on economic infrastructure development that Indonesia government took on the national policy of economic growth, promotion of oil and gas export, and industrialization. The representative projects are such as;

- Palembang Oil Port Renovation Project (1973)
- Balito River Mouth Dredging Project (1974)
- Lampung Roads and Bakauhuni . Merak Ferry Terminal Project (1972-1974)

Furthermore, in the 1980s, Japan’s cooperation to port/sea transport made each port development projects in Java, Sumatra, Kalimantan, and Sulawesi Island, covering a lot of ground, e.g., port development, port repair, dredging, etc. There are many ODA lone projects including not only general port development as basic infrastructure for economic growth, for instance, Semarang international port development, but also the specific objective port development, e.g., Ache port (fertilizer shipment), Domai Port (Oil products shipment), Asahang Port (Aluminum shipment), etc.

(3) Japan's Cooperation in late 1980s

In this period, in the road sector, Indonesian government basically adopted BOT as development scheme of expressway. Accordingly Japan's cooperation was shifted to general arterial road and bridge development projects. With the aim of executing effective and organizing investment to transport sector, the road sector development program was formed that the projects proposed by the road sector master plan which was conducted before the appropriate project selection were implemented by mean by yen-lone, technical cooperation, and ODA grant.

In the aviation sector, the extension project of Balikapan airport including runway construction was started in 1985. In the port and sea transport sector, the development policy was adopted that the port and ferry transport facilities development project was prioritized as necessary basic infrastructure development for economic growth, and the proposed projects by the master plan which was conducted before the appropriate project selection were conducted by means of ODA loan scheme.

(4) Japan's Cooperation in the 1990s

In the 1990s, in Indonesia the share of the total amount of ODA loan to transport sector was 23% and decreased than that of 1980's, on the other hand, non-project type loan increased to 25%, and displace on behalf of transport sector. Indonesia government's development policy to transportation sector brought the development study and ODA loan to rural transport sector to main-stream of Japan's ODA.

1)Road

In the road sector, there were many improvement, maintenance and repair projects of arterial roads not only in urban but also in rural area including Java, Sumatra, Kalimantan, and Sulawesi Island by means of ODA loan scheme.

We could point out the followings of above reasons;

The delegation of authority was carried out from PU (Ministry of Public Works) to Kimpraswil (Ministry of residential infrastructure); many road improvement project focused on national and provincial road produced an excellent result; and BOT scheme was becoming mainstream as expressway construction method.

Rural road improvement project contributed to Eastern Indonesia Development was started in 1996 in Sulawesi and Kalimantan Island.

2) Railway

In the early 1990s, ODA loan projects, e.g., the north-Java railway truck rehabilitation project, and etc., were continued. From right before Asian currency crisis, Japan's cooperation emphasized on the railway infrastructure development in rural area, meanwhile the railway modernization projects in Jakarta metropolitan area were implemented continually under ODA loan scheme.

3）Aviation

Air transport demand in Indonesia increased due to rapid economic growth, and the upgrading and improving airport handling capacity corresponding to passenger & cargo demand became urgent issue. In specific, the passenger traffic demand increased about 43%, meanwhile the cargo traffic demand soared about 170% for ten years (1988–1997).

Japan's ODA loan based on the requests of Indonesian government was carried out, e.g., Balikpapan airport expansion project (as a consecutive project), Surabaya airport development project (1996), Padang airport development project (1996), and Palembang airport development project (1996).

4）Port and Sea Transport

In succession to the 1980s, three mater plans were developed, and then the projects proposed by the master plan were implemented, in addition Semarang port development project as major international port was developed under ODA loan.

'Comprehensive master plan on modernization of sea transport in eastern Indonesia (1993)' is one of the master plans, and the feasibility study proposed in the master plan included 17 transshipment ports and 85 small-medium ports development plan. In specific, Ujungpandang (Makassar) port, Kupang port and Bitung port development as primary period projects were lined up in the master plan with the aim of rural economy development in eastern Indonesia.

In addition, the developments of ferry terminals consisting of 8 maritime routes (including 6 routes in eastern Indonesia) were developed by ODA loan based on the examination result of 'National Ferry network Development Master Plan' conducted in 1992.

The last was the master plan of 'Study on long-term port development policy (1998)'. The master plan established the strategic plan of port and ferry development considering PPP scheme and port development scenario in neighboring countries for integration of neighboring economy as premises for revising the gate-port system (divided port covering territory).

In the sea transport sector, shipman capacity building project, and procurement of disaster prevention ship were implemented by ODA loan commencing with 'Sector Loan of sea transport improvement project in eastern Indonesia (1991, 1992)'.

（5）Japan's cooperation in the 2000s

In the 2000s, the share of ODA loan amount to transport sector remained at high level (19%), next to power sector (34%), irrigation and water control sector (21%). The country assistant program to Indonesia published in April 2009 pointed out the transport sector issues on the basis of Indonesia government objectives regarding transportation sector development such as;

- The transport network formulation for promotion of economic development,

road/port/airport improvement for enhancement in transportation capacity, and railway infrastructure development for increase of competitiveness;
- Tighten security, e.g., accident avoidance action, accident investigation, etc, due to frequent serious accidents during recent years;
- Shifting over railway transport with the aim of reducing the dependency of road transport causing intensive traffic jam and installation of relevant agenda and institution in urban transportation sector; and
- Appropriate operation new legal system and detailed regulation, e.g., land transport law, railway transport law, air transport law and sea transport law, in addition the realization of the new project under PPP scheme.

In particular, considering the possibility of serious accidents with causalities in the aviation/maritime affair/ railway sector as a serious threat, the transport operation safety program was promoted as the tighten security of transport, e.g., reinforcement of legal system regarding transport security, improvement of traffic control system, upgrading of inspection capability, capacity building of accident investigation, etc.

1)Road

In the road sector, there was some amount of blank period between 1999 and 2001 shortly after Asian currency crisis, and then Japan's ODA represented a growing share of rural area, for instance, commencing with 'Bridge construction project in Saturnalia province', bridge construction/repair project under ODA grant scheme. As poverty program in eastern Indonesia since 1990s, the Master Plan of 'road improvement plan for regional development in Sulawesi' was established in 2008, the Japan's ODA to eastern Indonesia have being continued with the aim of economic revitalization and regional development with realization of efficient transport and good distribution system.

On the other hand, Japan's ODA supports the new construction, expansion/repair/rehabilitation, asset management of general road and expressway in the same way of rural development. Asset management regarding road and bridge construction under technical cooperation has started from 2010 on. According to Indonesian government adopted development policy of expressway under PPP, 'Preliminary study on infrastructure development under PPP scheme (2009)' includes the examination of PPP application to road development proposed in 'The Study on Expressway Development in Java Island'. Additionally the primary period project of technical cooperation on PPP scheme had been finished, and the second period project has been stated from 2010 on.

2) Railway

Corresponding to increasing demand by railway and diverting demand from road, Japan's cooperation supports railway enhancement project of railway capacity, new railway construction (double trucking railway), and etc such as;
- Double railway track project of Southern Java railway (2004, 2007);
- Railway electrification and double-double track project of Bukasi line in Jakarta metropolitan (2001); and

- Urban Mass Rapid Transit (MRT) development project in Jakarta (2006, 2009) under ODA loan scheme.

In addition, 'Enhance security project of railway management (2004, 2005)' under technical cooperation was implemented from the aspect of railway accident prevention and safety railway transport, and Japanese second-hand wagon was provided by ODA grant instead of the aging railway wagon from the aspect of increasing capacity for transport by railway.

3) Aviation

In the 2000s, at the first step, 'The Study on Long-term Aviation Sector Policy (2004)' was implemented to establish the comprehensive framework for long-term aviation policy, and next the development of aviation development master plan and supporting program was conducted by Japan'scooperation. From the aspect of security enforcement for peace and stable, 'The Study on Strengthening of Aviation Security System' under development study, meanwhile ODA grant and technical cooperation focusing on airport safety measure and security were conducted in the wake of series of terrorist attacks in US.

4) Port and Sea Transport

In the field of domestic shipping, the comprehensive approach to domestic shipping enhancement, e.g., container berth development and berth extension of strategic 25 domestic ports, 'Master Plan on Domestic Shipping and Domestic Shipping Industry in Indonesia', which was conducted by Japan's cooperation. Furthermore, 'The Study on Port Management under PPP Scheme' was conducted in 2009 on the basis of maritime law reform in 2008 that became the port development and management by private sector and PPP scheme possible.

On the other hand, many development studies, ODA grant and technical cooperation focusing on navigation safety, port security, port maintenance technique, and etc were conducted with the aim of anti-terrorism policy, strengthened systems of ports/sea transport. Likewise, 'Coastal wireless infrastructure development project (IV) ', whose target was to install wireless station at the several key spots of sea transport along the coastal belt, was implemented under ODA loan.

5) Jakarta Metropolitan Area

About 30% of GDP concentrated in Jakarta metropolitan. Jakarta metropolitan area played an important role to enhance economic growth in whole Indonesia, 'Comprehensive Urban Transport Master Plan in Jakarta Metropolitan Area, Phase 2' has been conducted, and then the proposed development project, e.g., public urban transport (MRT, etc), infrastructure (flyover, etc) and of the related policy/institution (traffic demand management, etc) installation were conducted by Japan's ODA. Furthermore, the related technical cooperation projects in regard to betterment of accessibility between each modes and policy integration of each transport were conducted, too.

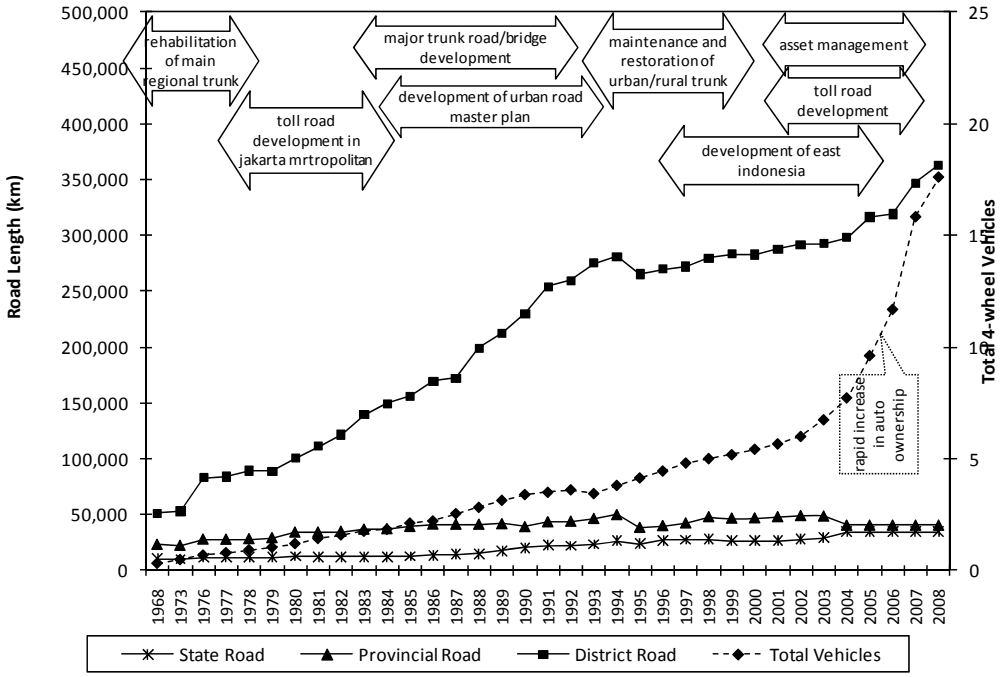
In addition, as the port development project in metropolitan area, the development study, 'The Study on Port Development Plan in Metropolitan Area (2001-2003)' including Tanjung Priok port, was conducted, and then 'Urgent rehabilitation project of Tanjung Priok port' was conducted under ODA loan continually, the trade gateway development considering new port development in the metropolitan area has being implemented. 'Tanjung Priok Access Road Construction Project' was implemented by ODA loan scheme with the aim of support to industrial activity in eastern industrial estate. Japan's ODA continually support transport project in metropolitan area, about 40% of foreign investment to whole Indonesia came in Jakarta metropolitan, the betterment of investment circumstance in Indonesia was the most critical issue in Indonesia.

5.3. Summary

Looking back the past 50 years, except for some periods of stagnant economy, Indonesian economy developed firmly, and the transport sector served as a Basis for Economic Development. Japan's cooperation was in line with Indonesia's development policy in each period. That is, for regional transport infrastructure development, priority was given to the connection of resources & equal distribution of development benefit, while, for metropolitan transport infrastructure development, priority was given to filling the gap between increasing transport demand & supply.

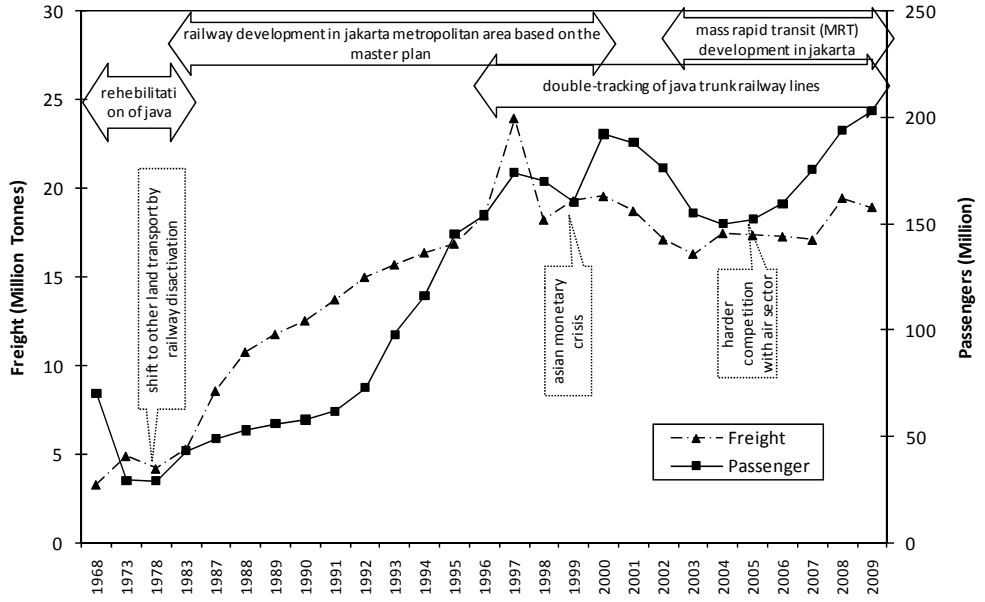
Especially, in the road sector, the highest priority and the largest budget was given in the first 25-year long-term development plan (1969-1994). Japan also continuously assisted Indonesia through rehabilitation of the major arterial roads, development of toll roads in the Jakarta metropolitan area, and improvement of roads and bridges, in accordance with the conditions and development policies in each period. This graph shows the trend of road length by status and the number of vehicles. In response to the situation in the 1990s, in which a quarter century has passed since the development of the road sector, new issues such as rapid increase in auto ownership, have been focused, integrated transport planning and master plans including various transport modes, PPP (public-private partnership) scheme for road development were focused on, and Japan has been assisting Indonesia in those priority issues.

On the other hand, development in the railway sector was slow compared to the road sector. This graph shows the trend of railway freight and passenger volume. The condition of railway transportation in the early 1960s was very poor. At that time, many railway network sections still utilized 40 years of old materials. The similar situation occurred to railway bridges, about 70% of which were erected by Dutch colonial government. Some railway lines were deactivated and substituted for other land transport In order to fill in this gap, Japan has greatly assisted Indonesia in many projects such as Java Trunk Line Double-Tracking Project. In JABOTABEK railway development project that was conducted by Japan from 1980s to 1990s, it is considered that Japan greatly has contributed to the development of the commuter railway system and increase in ridership. The assistance has been continuing even now, Jakarta Mass Rapid Transit project (MRT) is under way. For regional transport infrastructure development, Java Trunk Line Double-Tracking Project has been started and it is ongoing even now.



Footnote: ⇔ in above figure is intensive cooperation of ODA to road sector by time-phase
（Source: Statistics Indonesia 1997, 2002, 2007, 2008）

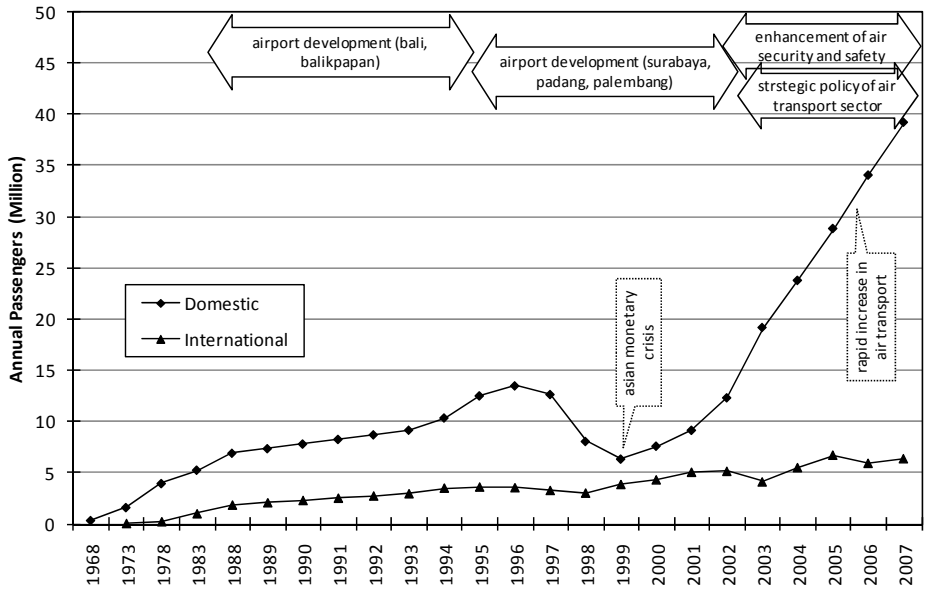
Figure 5-1 Trends of National/Provincial/Rural Road Extension and Registered Vehicles in Indonesia



Footnote: ⇔ in above figure is intensive cooperation of ODA to railway sector by time-phase
（Source: PT. KERETA API (Persero)）

Figure 5-2 Trend of Cargo (left) and Passenger (right) Volume of Indonesian Railway

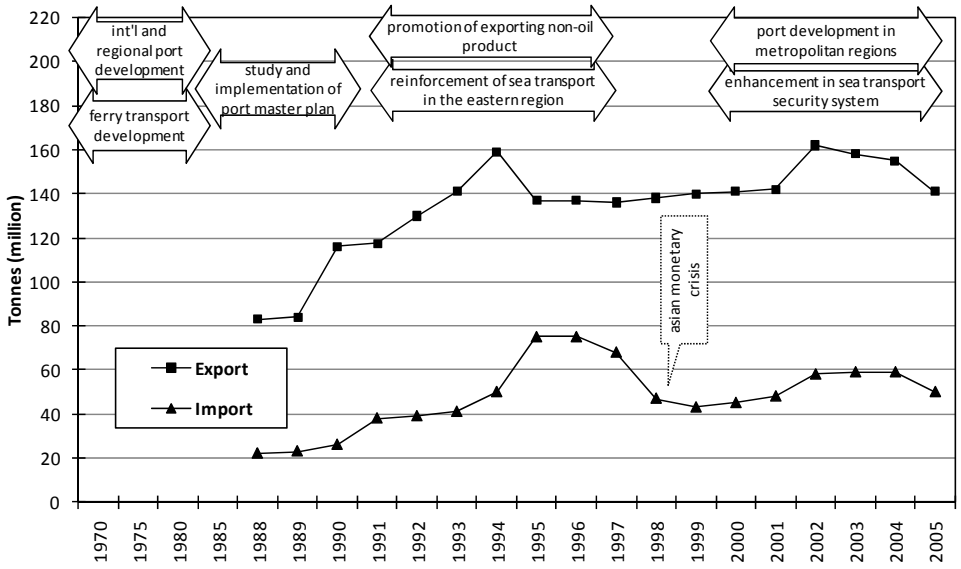
Air transport sector is the most changing sector due to the market deregulation and the following fare reduction. This graph shows the trend of domestic and international air passenger volumes. In Indonesia as an island nation, air transport sector has great potential as an essential mode of transport, and air passengers have been rapidly increasing especially in domestic airlines. Japan has assisted Indonesia in airport development such as Bali and Balikpapan since 1980s. In addition, New Padang Airport, and new terminals of Palembang Airport and Surabaya Airport started the operation in 2000s. In recent years, ODA grant and technical cooperation projects are ongoing for air security and safety system development. Furthermore, the master plan study on the strategic policy of the air transport sector has been implemented.



Footnote: ⇔ in above figure is intensive cooperation of ODA to aviation sector by time-phase
（Source: Aviation Department, Ministry of Transport）

Figure 5-3 Trend of Domestic and International Passenger Volume in Indonesia

Sea transport sector has potential as an important mode of transport, for Indonesia as an island nation. The fundamental problem in sea transport was that satisfactory sea transport services could not be provided due to the lack of port/sea transport facilities. This graph shows the trend of sea transport cargo volumes by import and export. Since the 1960s, Japan has assisted Indonesia in basic infrastructure development such as international and regional port development and ferry transport development, while at the same time Japan has contributed in industrialization and export of oil and gas. In addition, assisted since the 1990s, Japan has also assisted in efficient industrial development such as reinforcement of sea transport in the eastern region, port development in metropolitan regions, and enhancement in sea transport security system.



Footnote: ⇔ in above figure is intensive cooperation of ODA to port/sea transport sector by time-phase
（Source: Marine Transportation Department, Ministry of Transport）

Figure 5-4 Trends of Cargo throughput Volume of Indonesian Seaport

6. Electricity and Energy

6.1. Outline of The Sector

(1) Vicissitude of Indonesian Electricity and Energy Sector

Since its independence, the Indonesian mining industry led by the oil and gas business has been a powerful driving forth behind the economic growth of the country. Despite the high dependency of the financial power and technology of "the oil major", the oil and gas of has been making great contribution to the country's economy. The oil price hikes in the 1970s, which heavily deteriorated the advanced counties' economy, brought increase of the national revenue of Indonesia. A heavy decline of the oil price in the mid 1980s, however, brought about the country's account in red. Therefore, Indonesia extricated itself from the difficult financial situation with the country's new policy "independence from oil" towards the goal of the country's industrialization. The private investors were highly encouraged in investment with the lower customs duty and expected to be the powerful driving force of the country.

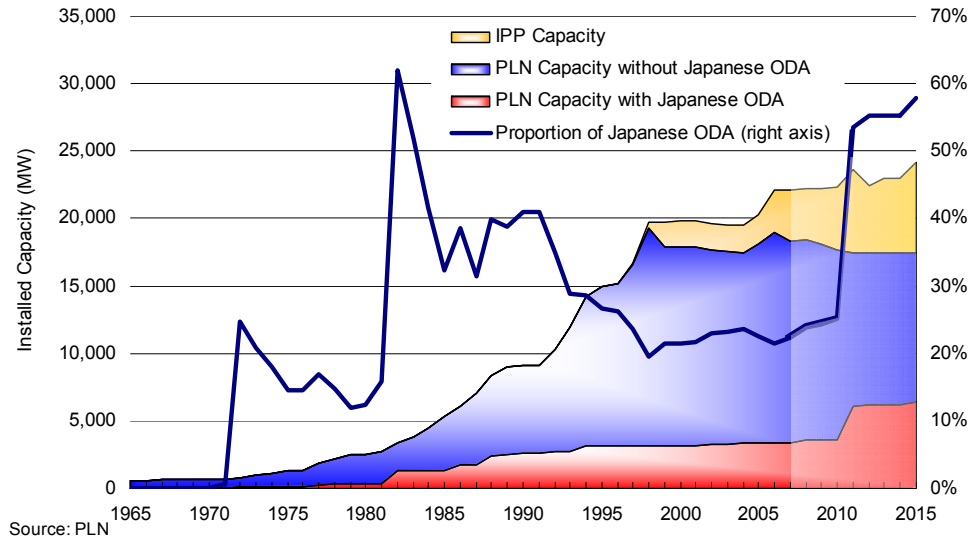
Electricity sector is a crucial element in industrialization. Power development was thus promoted in the country. PT. PLN (the National Power Company) as the public sector made great achievements with the financial and technical assistances from Japan and other international institutions, while IPPs (Independent Power Producers) as the private sector were successful too since the mid 1990s until the Asian currency crisis. An IPP, which is a power plant with private investment when developing and public sector's off-take when operating, was once highly appreciated, because the public sector's liability could be enormously reduced.

As a whole, Indonesia was very successful as of 1997 in its economic growth. The per capita GDP has grown from US$ 70 in 1969 to US$1,100 in 1996. Poverty population has been reduced from 70 million, or 60% of the total to 22 million, or 11% of the total in the period. It was believed by anyone that Indonesian Energy Sector had exceedingly smooth sailing. However, the Asian Currency Crisis revealed the fragility. For example, in the IPP system, the electricity tariff PT. PLN collected from customers was in Indonesian Rupiah, while the power charge PT. PLN needed to pay to IPP companies was basically in US dollars. When the value of the Indonesian Rupiah was quartered[7], therefore, the Indonesian Electricity Sector went straight bankrupt. The real GDP in 1998 was recorded at -13.1% in the previous year for the overall sectors and -14.2% for the non oil and gas sector. In 1999, the national liability was dramatically increased over the GNP value and the liability ratio exceeded 30%.

The Government of Indonesia adopted the Macroeconomic Stabilization Program as well as Institution Restructuring Program advised by IMF with support from the international funding institutions including Japan. With these programs, Indonesia overcame the financial influence of the Asian Currency Crisis in 2003. The country's economy grew by 6% since the previous year and the per capita GDP grew over US$2,000 in 2008. Meanwhile, Indonesia became an oil importer in 2005. This is

[7] The exchange rate had been around Rp. 2,400 per US Dollar at end 1996, while it was nosed down to Rp. 10,000 per US Dollar at end 1998.

because the oil production, which had been the greatest driving force of the country's economy, had been shrinking and the domestic oil demand had been rapidly increasing. Nevertheless the great volume of exports were still remained in natural gas and coal that rapidly grew recently, the Indonesian has had a new era that the economy can less rely on the fossil fuel exports.



Source: PLN

Proportion of Japanese ODA = capacity of power plants by Japanese ODA / PLN capacity

Figure 6-1 Historical Power Generation Capacity in Indonesia

（2） Outline of Japan's Economic Cooperation

The Sector is composed mainly of the oil & gas sub-sector and electricity sub-sector in Indonesia. The cooperation made by the Japanese Government to the Sector counts 196 projects in total, as listed in the attachment. Of these, 46 projects are for the oil & gas and 150 projects are for the electricity.

Table 6-1 Issues and Cooperation in Electricity and Energy Sector

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Electricity & Energy	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Directorate of Oil and Gas established 1961 − Pertamina established 1968	− PLN established 1972 − LNG production started 1977 − Directorate General of Energy established 1978	− Domestic energy demand increased − Electricity Law 1985	− PLN owned by Sate 1992 − IPP started	− New Oil & Gas Law 2001 − New Electricity Law (2002 decided, 2004 cancelled, 2009 re-decided) − Indonesia became an oil importer 2005 − Crash Program issued for 10,100 MW power plants 2006 − Privatization of Pertamina 2006
	Priority Development Issues shown in 5-year plan	− Indonesian socialism embodied	− Natural resources exploration advanced − Use of foreign investment and technology for oil & gas − Oil production increased − Power developments for stable economy	− Infrastructures for domestic energy supply − Structural reforms for energy sector	− Effective use of energy − Power developments to meet demand − Rural electrification advanced	− Urgent power development after crisis − Capacity building − Institutional reform for public services − Considerations to environments − Sustainable development − Electrification rate reached 67.9% 2009 − Expansion of use of gas, coal, and renewable energy
	Japanese Approach for Development Issues		− Oil fields explorations − Expansion of power plants	− Power Developments	− Effective use of electricity	− Urgent Power Development in Java-Bali − Use of renewable energy − Policy suggestions
	Priority Programs/ Projects for Japanese Cooperation	− Tanjung Priok Thermal Plant	− Oil fields developments − Hydro & thermal power plants	− Java-Bali Power Transmission Lines	− Rural Electrification Project in Aceh	− Urgent Power Development in Java-Bali − Electricity Master Plans

6.2. Vicissitudes of the Energy Sector and Japanese Economic Cooperation

(1) 1960s

Notwithstanding many oil and gas fields needed rehabilitations and repairs and investigations for new facilities were demanded in the decade, the oil and gas sector was the largest driving force behind the Indonesian economy. In 1960, the Government of Indonesia decided so-called the Oil & Gas Law and a PSC[8] based operation, which is a joint work between a foreign oil company and the Indonesian State Owned Oil and Gas Company was started. Meanwhile, all of the resources of oil and gas was nationalized. In 1968, three state owned oil and gas companies were merged into PT. Pertamina, and since then PT. Pertamina has been managing all of the business stages of the oil and gas; mining, development, refinery, and sales of the oil and natural gas within the country.

Table 6-2 Economic Indicator of Asian countries: 1960-1980

Country	Ranking in GDP* 1978	Categories of Country	GNP per Capita (US$) 1976	Rate of Inflation 1960-70	Ranking in GDP* 1980	Categories of Country	GNP per Capita (US$) 1980	Rate of Inflation 1970-80
India	18	Low Income	150	7.1%	19	Low Income	240	8.5%
Vietnam	19	Low Income	160	N/A	11	Low Income	170	N/A
Indonesia	31	Low Income	240	180.0%	38	Middle Income	430	30.5%
Philippines	47	Middle Income	410	5.8%	52	Middle Income	690	13.2%
Malaysia	68	Middle Income	860	-0.3%	76	Middle Income	1,620	7.5%
Singapore	90	Middle Income	2,700	1.1%	95	Middle Income	4,430	5.1%
Japan	98	Industrialized	4,910	4.9%	108	Industrialized	9,980	7.5%

* Ranking is given in inverse order: Top ranking country generates the smallest GDP.
Source: World Development Report 1978 and 1982, World Bank

In the Electricity Sector in the era, the demand began enormously increasing, since the full-scale economic growth started. Not only because the power development was under promotion, and because the budget allocation for maintaining and/or repairing the existing facilities was not enough, the country suffered from serious lack of the infrastructures related to electricity. For example, Indonesia was forced to fill the immediate needs in Sulawesi by using the second-hand hydropower machines that were brought in by the former Japanese Army during the World War II. In fact, the total power generation capacity of the country was estimated to be only 3 Watts[9] per person in 1960.

Under such distress, Japan enormously expanded its economic cooperation to the Indonesian Electricity Sector by replacing the hydropower developments through the war preparation by those through the Japanese ODA loans. Japan provided another set of ODA loan for the development of the Tanjung Priok Thermal Power Plant. The total power generation capacity of these power plants was as large as 160 MW. Because the

[8] The Production Sharing Contract. The contract system was invented in 1960s to settle the interests of Caltex USA, who were producing oil on a large scale mainly in Central Sumatra. Today, a PSC has been a common system in the oil and gas business worldwide.

[9] According to Statistic Pocketbook 1968 (Bureau of Statistic, Indonesia), the total installed capacity of power plants of Indonesia is 319 MW in 1960. Meanwhile, the population was reportedly around 94 million in the same year. The power generation capacity per person of Indonesia got dramatically improved from 3.4W in 1960 to 106 W per person in 2008.

existing total capacity at that time was only 670 MW in Indonesia, these project developments were large enough to increase the capacity by a quarter at once.

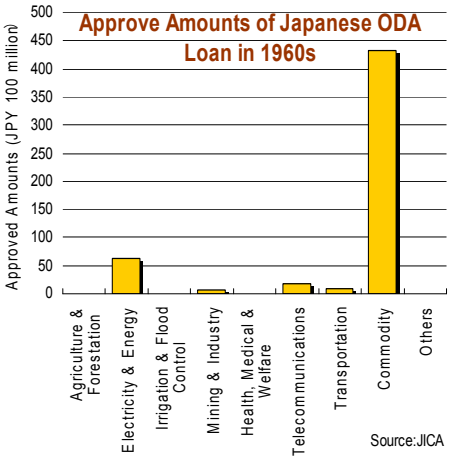


Figure 6-2 Approved Amounts of Japanese ODA Loan in 1960s

Power Projects Developed with Japanese Cooperation in 1960s

The Brantas River Hydros

The Kali Konto (4.5 MW) and Karangkates (105 MW) Hydropower Projects. These two plants are power generation facilities equipped within the multipurpose dam project developed in the Brantas River, East Java. When developed, the Karangkates was the largest hydropower plant in Indonesia. Today it is called "Sutami Dam" for the then Minister for Public Works, who rendered remarkable services to infrastructure development.

Tanjung Priok Thermal Power Plant

A 50 MW oil-fired steam power plant. It is the first power plant built in Indonesia with the Japanese economic cooperation, located near Jakarta, the largest electricity demand center. The plant was rehabilitated and extended in capacity in 1988 and 2004 respectively with the Japanese ODA Loan. It keeps contributing towards electricity supply to the Java-Bali Power network with high efficiency as one of the combined cycle plants.

（2） 1970s to the early 1980s

In the 1970s, resources development in Indonesia advanced greatly. The first oil crisis in 1973 adversely affected economy of advanced countries, while it enabled Indonesia to drastically increase its export of oil and gas. A number of oil fields were developed. Indonesia attempted to steadily acquisition of foreign exchange by oil export. At the same time Japan expected to ensure long-term security of the fossil fuel through the import of oil from Indonesia and elsewhere..

The two countries agreed that Japan supported Indonesia in the oil and gas fields[10] development, in addition to the routine bilateral cooperation scheduled every year in the framework of IGGI. During four years from 1973 to 1976, Japan offered ¥110 billion of the Japanese Yen loan in total to Indonesia owned oil and gas company (PT. Pertamina at present) for developing and/or rehabilitating 40 oil and gas projects. Because of this Yen loan, many existing old facilities were successfully repaired and a great number of potential fields were investigated in Java, Sumatra, and Kalimantan by means of seismic explorations and/or test borings. Nevertheless high risks were attributed in a new field development, PT. Pertamina was successful enough to discover several large scale oil and gas reserves in North Sumatra and East Kalimantan and establish a base of the financial contribution to the country.

[10] The Japanese ODA loans provided for the oil and gas development in 1970s were based on the two countries agreement separately made from the IGGI framework. It was special and exceptional within the Japan's bilateral cooperation to Indonesia. Since IGGI was renamed to CGI, no such special cooperation was exercised.

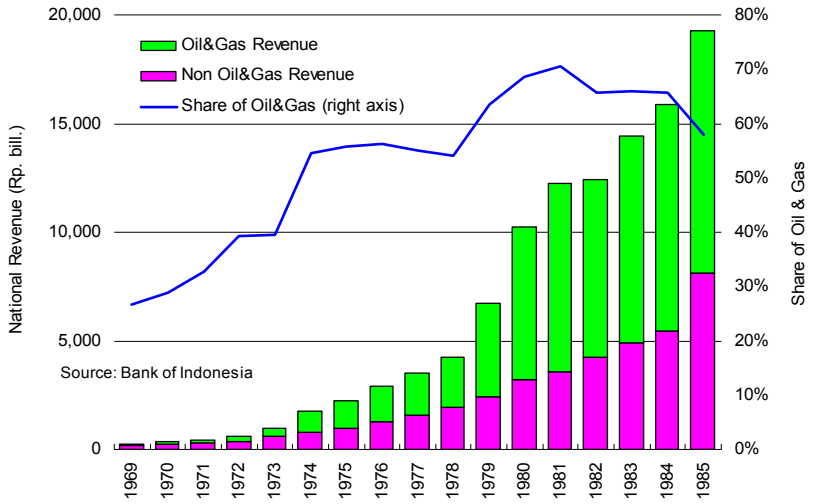


Figure 6-3 Historical Revenue Source of Indonesia

It is in this era that Japan took so-called the national project scheme that looked for oil field ownership abroad led by Japan Oil Corporation. In Indonesia several oil project companies like 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 with Japanese ODA loans. These two plants had been the sole LNG plants in Indonesia for more than three decades since the Tanggu LNG Plant, Irian Jaya started its gas supply in July 2009. Meanwhile, the Japan's lender group helped PT. Pertamina ease its debt service through the Trustee's Borrowing Scheme.

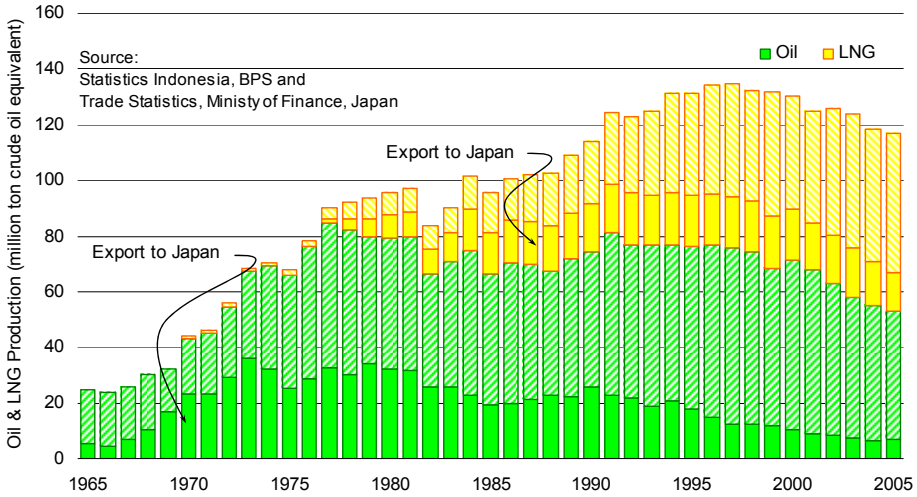


Figure 6-4 roduction of Oil and Gas in Indonesia and Export to Japan

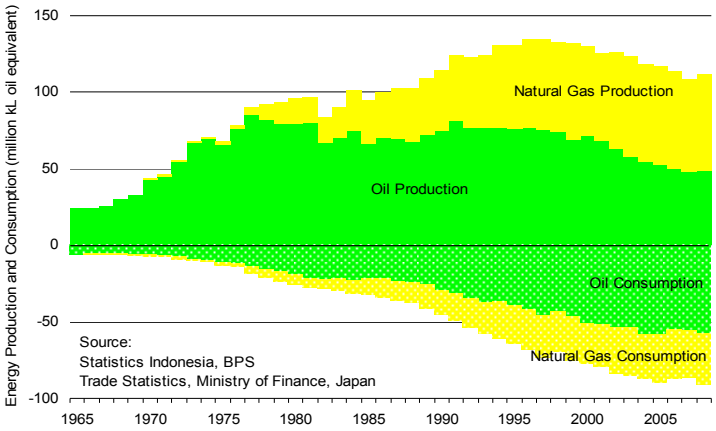


Figure 6-5 Energy Production vs. Consumption, Indonesia

With these Indonesia's initiative and Japan's cooperation in the oil and gas development. Indonesia earned good profit and proceeded for the country's growth. Japan was also successful in acquire a great quantity of oil and gas for decades. The exported oil and gas to Japan became the abutment of the Japan's great strides in economic growth. In fact, a third[11] of the oil produced in Indonesia went to and helped Japan.

In spite of a great success in oil production, its volume was declining from the 1.68 million barrel per day, a peak recorded in 1977. As the domestic demand for oil expanded with the country's growth, Indonesia turned to be an oil importer in 2005.

In the 1970s to the mid-1980s, the Indonesian Electricity Sector has an absolute issue of short of electricity. Therefore, a number of base load power plants were urged to be developed. Examples are the Gresik Thermal Power Plant (100 MW commissioned in 1981) and the East Java Power Transmission and Distribution Project (Phase 1 in 1971 to Phase 4 in 1985).

(3) The Late 1980s before Asian Currency Crisis

In 1985, Indonesia sailed into the structural reform being mainly composed of ease of official restrictions and banks reorganization, aiming at shaking the country free from the oil dependence. It worked well and accordingly foreign direct investments successfully advanced and the country's economy did also. Therefore, the electricity demand in the country also became quickly larger. In 1992, the Government of Indonesia introduced the IPP based power development system, by issuing the new electricity law. The IPP is a sort of the public-private partnership operation with a possible reduction in power generation cost and resource savings by means of competition mechanism in the electricity sector. As the Government of Indonesia estimated the high economic growth lasting long, IPP projects were launched. The plan was that IPPs could increase the PLN power supply capacity by 5 times in 10 years. Thus, PLN made 27 PPAs (power purchase agreements) with respective IPP companies.

[11] According to Bureau of Statistics, Indonesia and the Trading Statistics, Ministry of Finance, Japan, the total oil and gas production in Indonesia is 3.8 billion tons of oil equivalent between 1965 and 2005. Of this, around 1.2 billion tons of oil equivalent was exported to Japan.

These PPAs involved US$ 16.5 billion of investment and assumed 11,260 MW in generation capacity. Among these IPPs, there exist some giant Japanese projects, such as Paiton 1 Coal-fired Plant and Tanjung Jati B Thermal Plant.

Indonesia needed a new institutional framework for privatization, deregulation, financing liberalization, etc, so that private investor could be encouraged and the private projects could be expanded. The Government of Japan and multilateral institutions played an important role to make such liberalization policy of Indonesia advanced. It was in this era that the multilateral development banks and export credit agencies of the advanced countries established their facilities for supporting investors by providing financing, guarantees, and insurance.

Indonesia focused its policy on regional disparities in the 1980s and 1990s. In the Electricity Sector, the IPP based power developments by utilizing private money began functioning. But it was limited to the large cities mostly in Java Island. Therefore, the Japanese economic cooperation as part of the public money towards the power development often needed to go to the hydropower or other power projects within the less developed regions, where high risks were expected. Examples are the Sipansihaporas hydro plant (ODA loans for the project plan in 1987, design in 1992, and construction in 1995), the Diesel Power Plants in Rural Areas (ODA loan in 1984), and the Rural Electrification Projects (ODA loans in 1988, 1993, and 1996). Also, Japan offered the Japanese ODA loan for the 500 kV power transmission trunk lines connecting the east and west Java areas. The trunk line project enabled effective power transmission from the eastern part of Java, where electricity was relatively sufficient, to Jakarta as the largest demand center located the western part of Java.

（4） After Asian Currency Crisis to Today

Although the Indonesian economy continued to grow, it was nosed down due to the Asian Currency Crisis in 1997. The fall in the foreign direct investment was enormous especially in the electricity business. The amount of FDI was only less than 5% of the amount before the crisis. The financial balance of PT. PLN got heavily deteriorated. This is because PLN had many Dollar based contracts with IPP developers, while PLN incomes from customers were all in the heavily depreciated Indonesian Rupiah. As the country’s subsidy to fuel was enormously reduced later, the power generation cost was also rapidly increased. As a result, PLN substantially reached an impasse.

In order to overcome these difficult situations, the Government of Indonesia decided in October 1997 to receive a US$ 4.6 billion of the financial support from IMF and agreed with the Macro Financial Program. It is the Electricity Sector as the basic industry of the country that is the most important target in the program. In 1998, Indonesia drew up the structural reform of the Electricity Sector, aiming at its efficiency increase and cost reduction by introducing the competition mechanism. As long as the electricity sector was concerned, however, some measures in the structural reform were counter-effective to meet pressing needs for electricity supply. The importance of increase of the power generation capacity might have been underestimated, because the electricity demand had been dropped down sharply just after the Asian Currency Crisis.

The New Seventh Five-Year Development Plan (2000-2004) identified electricity supply as an important public service. However, the electricity supply was increasingly overtrained party because fuel supply did not keep up with an increasing demand for thermal power. In fact, the country became an oil importer in 2005. In stead, natural gas was increasingly used for power generation purpose since the 1990s, though it could little more satisfy power demand in the 2000s. Such fuel short was found conspicuous in the Java-Bali system, where lied in the center of the country's industry. In August 2005, a large blackout took place in the Java-Bali system. It was triggered by a simple malfunction happened in the Suralaya thermal plant. The blackout was recognized as a large social problem. Incremental power generation requirement was estimated at 1,500 GW every year after 2008, to meet the electricity demand which was increasing by 6% to 9% a year.

Urgent Power Development in Java-Bali System

The Urgent Power Development Projects in Java-Bali System, together with the 500 kV power transmission trunk lines completed 2006, made a great contribution in stable power supply in recent years. The project components are the Muara Karang Gas Power Plant, Muara Tawar Gas Fired Power Plant Extension, and Tanjung Priok Gas Fired Power Station Extension. The total power generation capacity is as large as 1,800 MW. The loan amount is ¥140 billion. Estimated commissioning date is 2003 to 2012.

Source: Golden Year of Friendship 2008 Indonesia-Japan, Japanese ODA Loans to Indonesia, JICA 2008

In order to let the electricity related issue improved, the Government of Japan made a series of propositions to Indonesia through the JICA Study on the Improvement Measures for Electric Power Generation Facilities in Java-Bali Region (completed in 2006). It proposed effective countermeasures to improve the power plants' efficiency in the region concerned. Meanwhile, the Government of Indonesia requested Japan to cooperate in execution of the urgent power developments in the Java-Bali system. In reply to such request, Japan offered the Japanese ODA loans to four power projects consisting of new construction and existing plants extension, so that the electricity crisis could be overcome. Working together with the 500 kV power transmission trunk lines completed in 2006, the said urgent power development is becoming highly successful as of 2009 in electricity supply to Jakarta and surroundings, the largest demand center of the country. In addition in 2008, Japan started its cooperation to the Java-Sumatra submarine power cable project. It is a ¥200 billion of giant project that will enable

inter-island power transmission from Sumatra, where is very rich in coal resources, to Java, where is very limited for power plants potential sites.

Meanwhile, since 2005, because of the oil price hike worldwide, Indonesia has deducted the fuel subsidy in the domestic market and accordingly the fuel prices have been dramatically raised. Accordingly, PLN becomes suffering high power generation cost; notwithstanding the volume share of oil is only 30 percent among the power plant fuel consumption, its cost share is exaggerated to 70 percent to the same. Therefore, the Government of Indonesia is now attempting to reduce the share of the oil-fired power plants, by issuing the Fast Track Program, or the Crash Program, to develop 10,000 MW power plants) in 2006. As the same program assumed only coal-fired power plants, however, there could be some room for some modification in view of the energy balance and considerations to the environments. Under these situations, the Government of Japan provides the master plan studies and technology transfers towards ideal electricity developments, operations and managements in the country. They are the JICA Optimal Power Development Studies for Java-Bali, Sumatra, and Sulawesi (4 studies in total), as well as the geothermal and hydro master plans. In addition, Japan is now offering its soft loan to PLN for the asset management project for the major power plants to in order to make efficient power supply possible. Further, Japan is paying its extra attentions to the global warming. To effectively utilize the abundant renewable energy in Indonesia, Japan began its cooperation to Indonesia towards the substantial renewable energy utilization in institutional aspects and in facility aspects, such as development of the Lahendong Geothermal Plant (20 MW in North Sulawesi) and the Ulubelu Geothermal Plant (110 MW in Lampung).

Lahendong Geothermal Power Plant, North Sulawesi

Amount of Japanese ODA loan ¥18,182 million, July 2003

The objective of the project is to improve the stability of power supply in the Minahasa power system, North Surawesi by newly constructing a geothermal power generation plant (capacity: 20 MW) in the Lahendong Geothermal Power Plant. The project is due to be completed in 2012.

6.3. Summary

Japan's cooperation to Indonesia, who is the number one development partner for Japan, began the war reparation agreed by the countries in 1958 with ¥80 billion of payment. It was the Electricity Sector that was chosen as the first Japanese ODA Loan to Indonesia in 1968 within the framework of IGGI[12]. The projects first applied for the Japanese ODA Loan for hydropower developments in Brantas river basin, the East Java. The electricity and energy, together with the transportation, is one of the largest infrastructure sectors, of which development with the Japanese ODA loans was focused by Japan. Despite a few variations year by year, the Japanese economic cooperation to the electricity and energy sector accounts for amount to 30 percent of the total amounts of the Japanese ODA Loans to Indonesia.

[12] Inter-Governmental Group on Indonesia (IGGI) which was held every year to decide the cooperation amounts for the next year by delegations from Indonesia, consisted of the multi- and bi-lateral development banks and international funding institutions including Japan. It was renamed to be CGI in 1992.

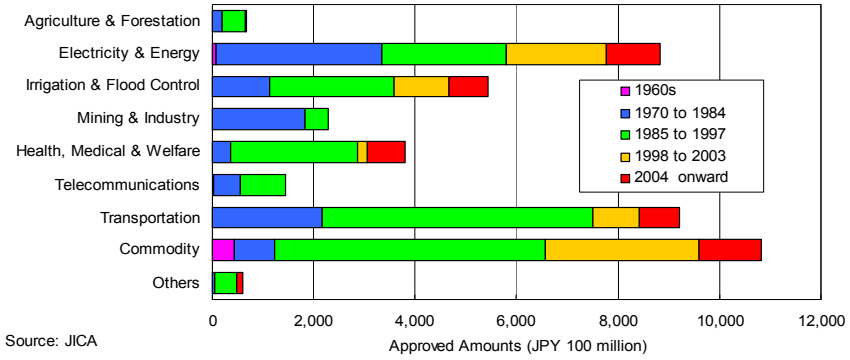
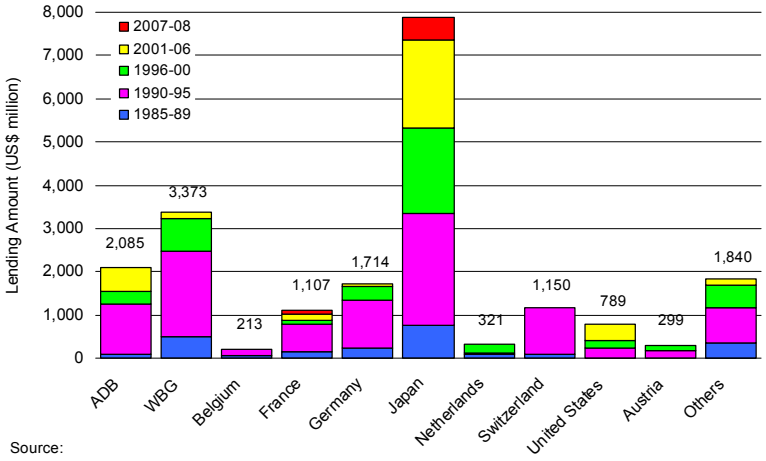


Figure 6-6 Historical Approved Amounts of Japanese ODA Loans by Sector

As the Indonesian infrastructure development was promoted following its five-year rolling national plans, the subjects that Japan offered its economic cooperation changed accordingly. Development of electric power, fiber industries, and oil and gas was the major subject of the Japan's cooperation in 1960s to 1970s and accounted over a half of the loan amounts. In 1980s, as priority of the transportation became high and the non-project type loan was increased as well, the Japan's cooperation to the Indonesian electricity sector got relatively smaller. But the loan amount for the electricity and related projects still remained around 20% to the total. In 1990s, the Japan's cooperation to the electricity sector was further reduced, not only because the capacity building was focused but because the private finance-based power plant development became possible. The Indonesian electricity sector was going well. However, the Asian Currency Crisis happened in 1997 severely hit Indonesia. Japan who suspected potential of the electricity crisis made decision of its additional economic cooperation in 2003. It was 2,500 MW in total of the power development within the Java-Bali system, the largest power demand center of the country. As the result of the Japanese cooperation after the crisis, it could be evaluated that Indonesia was able to minimize the effects of the Asian Currency Crisis and recovered quickly.

The Japan's cooperation to Indonesia is broad; from master planning to capacity building. In terms of the power generation capacity as of 2008, more than a quarter of the power plants owned by the country was developed and/or rehabilitated with the Japanese ODA.



Source:
Proposed Loan and Administration of Loan and Grant Republic of Indonesia:
Java–Bali Electricity Distribution Performance Improvement Project, ADB 2010

Figure 6-7 Lending to Indonesia by International Funding Institutions

Since 2000, as Indonesia has overcome the currency crisis, the Japan's cooperation to the country altered its subjects from the infrastructure development to the intangible services, like policy advice, measures of the anti-global warming, etc. Among the multi- or bilateral funding institutions including the World Bank Group and the Asian Development Bank that are offering the economic cooperation to the country, Japan has the outstanding significance in terms of the cooperation amounts.

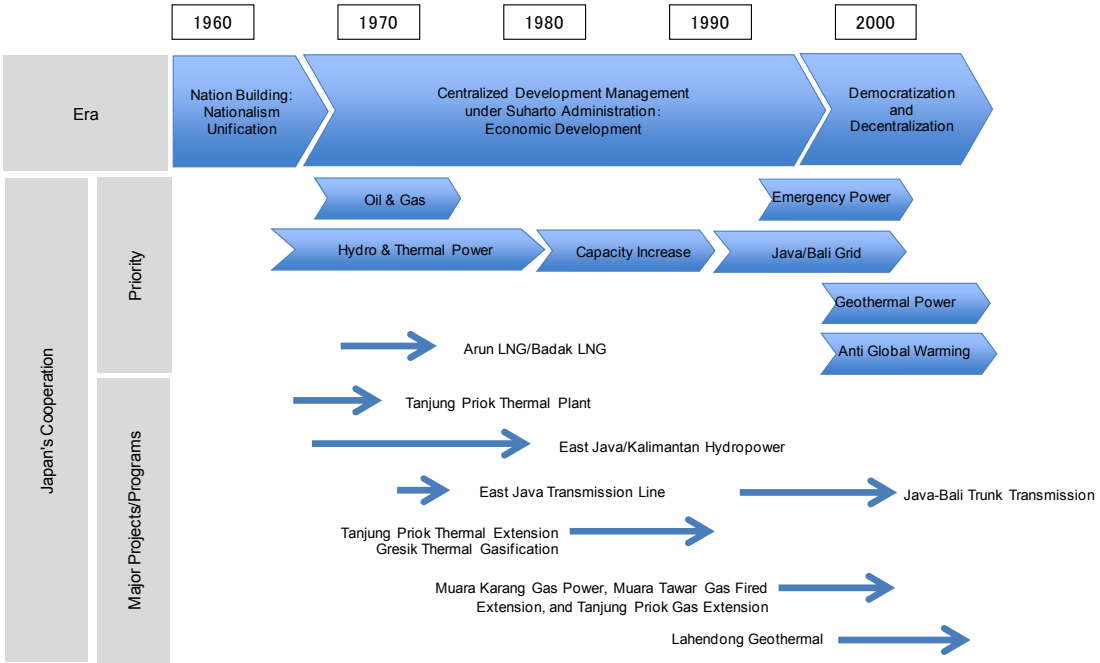


Figure 6-8 Changes of Cooperation in the Electricity and Energy Sector

7. Information and Communications

7.1. Outline of the Sector

The sector is composed mainly of the telecommunications business sub-sector and broadcasting sub-sector. The economic cooperation that Japan have provided to this sector counts 89 projects broken down by 63 for the telecommunications and 26 for the broadcasting, as per given in the attachment.

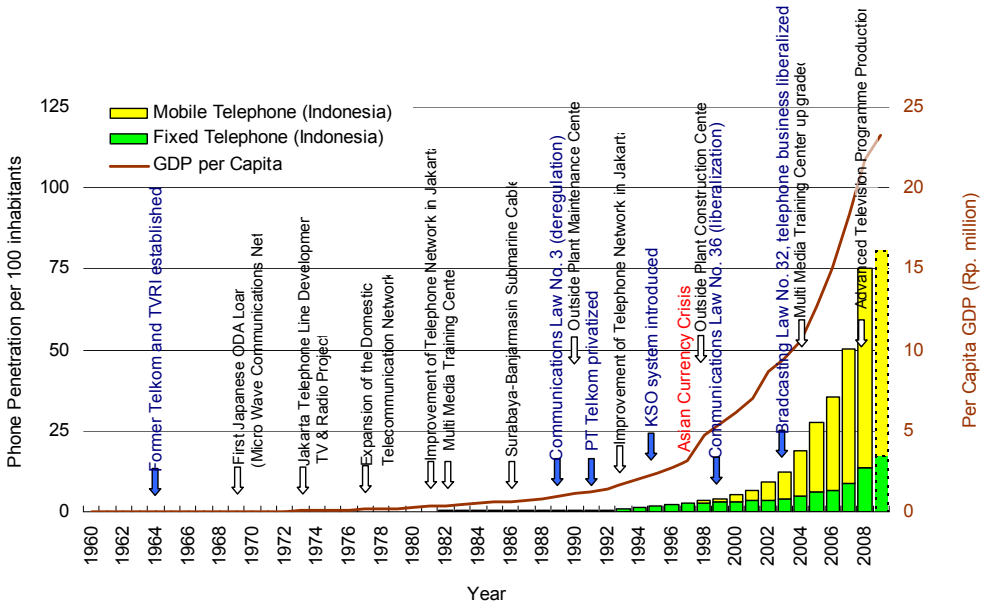


Figure7-1 Vicissitudes of Communications and Broadcasting Sector in Indonesia

【National Enterprise Set Up】 The RRI (the former State-run radio station) started its broadcasting in 1945 immediately after the independence, while it was in 1960s that the TVRI (the former State-run television station) and State-run telephone-telegram stations were established. In the era, there was no economic assistance coming yet to the Indonesian communications and broadcasting sector from the international institutions. Hence, the country did not have enough financial capacity to advance in the infrastructure development for the sector. It was in 1969 when the First Five-year Development Plan was issued by the Suharto administration that a nation-wide telecommunication project was commenced financed by the Japanese ODA loans.

【Urgent Infrastructure Needs】 In the early 1970s, the World Bank Group (WBG) decided to provide its soft loan to the telecommunications project[13], and Japan continued its economic cooperation through ODA loans, the infrastructure development of the country became in large scale. However, the required budget for the infrastructure was far gigantic than such assistance by WBG and Japan. Until 1980s, all of the projects

[13] Telecommunications Project, IDA, Sector Investment and Maintenance Loan. Approved in 1970.

were urged, because existing facilities were far beyond the requirement in terms of quality and quantity. In the era, the land of Indonesia was too broad and islands of Indonesia were too many to speed up its communications developments.

【Plans and Growth】 Since the Third Five-year Development Plan (1979-1984), which targeted expansion of the capital city telephone network and spread of the radio and TV system in the outer islands, Indonesia took prudent tactics for challenging the difficult communications development from the long-term view point. It is introduction of the master planning, which made a great contribution to sector. In these years, a number of long term plans were built up for the trunk cables, telephone network systems, etc. Meanwhile, the Government of Indonesia attempted to ease former restrictions on private investment in this sector by issuing the Telecommunication Law in 1989. This deregulation worked well. A great amount of the private investment came into the telecommunications sub-sector since 1995 in the form of KSO System, which can be translated into the Indonesian BOT[14]. Notwithstanding the severe deterioration caused by the Asian Currency Crisis in 1997, the damage sustained by the telecommunication sub-sector was relatively limited compared with other sectors.

【Independence and Competition】 As the private investment became usable since the deregulation in 1989, the Indonesian telecommunications industry turned financially independent. Indonesia no longer needed to utilize the finance from the multi- and bilateral donor for the infrastructure development purpose. Upon such independence, the Indonesian telecommunications sector sailed into liberalization of the telephone and broadcasting industries with minimal exceptions by enacting the new regulations for the sector. Because of this change, the State owned telephone company had his business monopoly lost and the State owned broadcasting stations turned to the respective public stations. Despite the standpoint difference between telecommunications and broadcasting, the former state-run entities are now demanded to go out to the highly competitive business world. They are supposed to survive the respective business, keeping providing the high quality public services with their own tactics and specialties.

[14] Build-Own-Operate. When developing a public infrastructure, the private sector invests and operates during the limited period agreed. When the agreed period ends, the project asst is transferred to the public sector.

As of 2009, according to the statistics of ITU (the International Telephone Union), the telephone penetration reaches over 150 million persons and ranks sixth[15] in terms of number of the telephone users in the world. So the penetration ratio[16] in 2008 is successful with 13.4% for the fixed telephone and 61.8% for the mobile telephone. Indonesia has already achieved the telecommunications with comparison to other Asian countries. As the telecommunications keeps contributing to the great growth of the Indonesian economy, it has been indispensable and essential to the people's living as well as the economic activities of the country.

Table 7-1 Telephone Penetration of Selected Asian Countries

	Fixed Phones	Mobile Phones
Vietnam	17.1%	86.9%
Philippines	4.4%	76.0%
Malaysia	15.9%	102.7%
Singapore	41.4%	142.0%
Thai	10.4%	92.0%
India	3.2%	44.7%
China	23.6%	56.3%
Indonesia	13.4%	61.8%
Japan	38.0%	87.7%

Source: ITU, as of 2008

7.2. Outline of Japan's Cooperation

In reply to the requests from the Government of Indonesia, Japan has been offering its cooperation to a number of the information and communications sector since 1960s to date in the form of the ODA loan, grant aid, and technical coopertion as well.

[15] The first place is Chine (740 million), the second is India (520 million). Japan ranks seventh (110 million), based on ITU statistics.

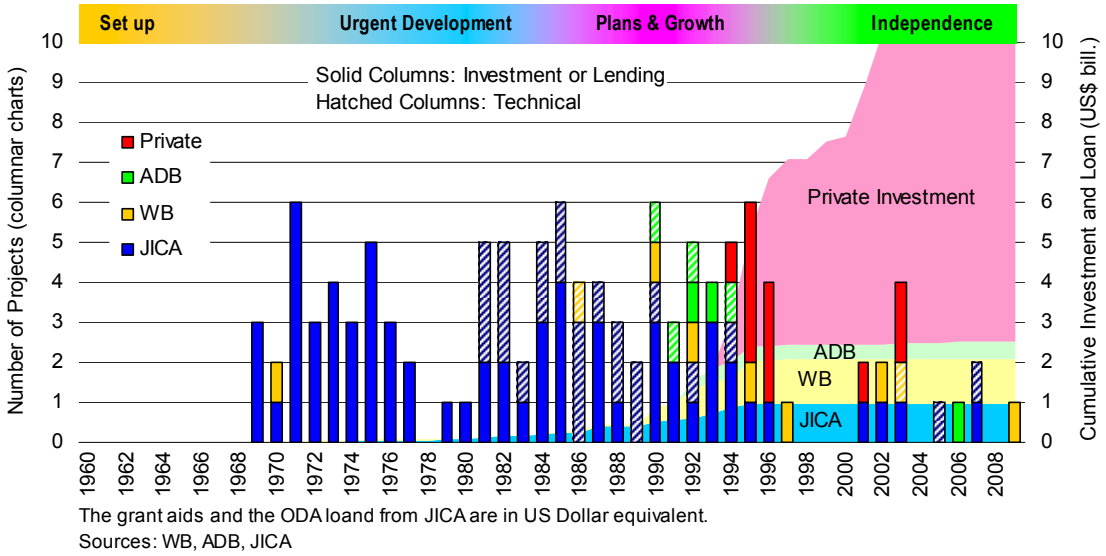
[16] The telephone penetration stands for number of telephones per 100 users.

Tablet7-2 Issues and Cooperation in Communications and Information

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Communications and Information	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Establishment of institution	− WBG followed Japanese ODA	− Introduction of private money	− Liberalization	− Independence
	Priority Development Issues shown in 5-year plan	− Telephone-Telegram, TVRI established − Repair and rehabilitation of old facilities	− Telephone network expansion in capital city − TV and radio system expansion in outer islands	− Expansion of telecommunications network − Improvement of service quality − Achievement of 0.9% of telephone penetration	− Liberalization of telecommunications and broadcasting	− Privatization of PT. Telkom and TVRI reform − Capacity building
	Japanese Approach for Development Issues	− Pioneered with the first Japanese ODA loan	− Institutional set up for the communications and information − Master planning − Capacity building	− Development trunk lines	− Capacity Improvement − Capacity building − Telephone network improve in large cities	− Policy advices − Capacity building
	Priority Programs/ Projects for Japanese Cooperation	− Inter-island telecommunication networks	− Microwave networks − Regional telephone networks − 5-year Integrated Development of Broadcasting	− Java-Kalimantan submarine cable − Telephone Network Improve in Jakarta (1)	− Outside Plant Construction Center − Telephone Network Improve in Jakarta (2) − Outside Plant Maintenance Center	− Multimedia Training Center Upgrade − Broadcasting Strategy formulation and Planning

Japan has been advancing together with the history of the Indonesian Information and Communications Sector as it is providing the various kinds of the cooperation in the telephone system expansions (the infrastructure development) in large cities, regional towns, and outer islands, in preparation of the mid- and long term development plans (the master planning), and in promoting the technical engineers for construction and/or maintenance (the capacity building). It is Japan that first offered the financing to the Indonesian information and communications sector. It is also Japan that first carried out

the master planning therefore. In fact, around 40%[17] of the telecommunication infrastructures of Indonesia are the achievements assisted by Japan. Compared to the cooperation by other multilateral funding institutions like the World Bank Group (WBG) and the Asian Development Bank (ADB), the Japanese presence must be paramount significance in terms of its times and amount.



The grant aids and the ODA loand from JICA are in US Dollar equivalent.
Sources: WB, ADB, JICA

Figure 7-2 Cooperation of JICA and International Institutions to Indonesian Information and Communications Sector

Table 7-3
Information and Communications Projects Developed in 1970s

JICA Projects

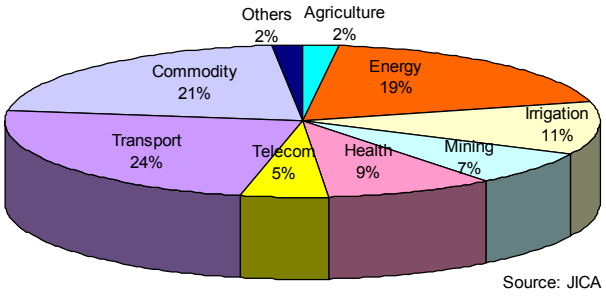
Communications (19 ODA loans and 2 grant aids)	
Coastal radio communications	1970 to 1973
Communications facility improvements (5 lots)	1971, 1972
Microwave communications network	1971, 1974, 1976
Telecommunications facilities (grant)	1972, 1977
Telephone line expansion in Jakarta	1973, 1975, 1976
Long Distance Communications	1973
Mobile Exchanges in Jakarta	1974
Java-Bali Microwave System Expansion	1979
National Radio Frequency Monitoring	1980
Broadcasting (8 ODA loans)	
Medium Wave Radio Network	1973, 1974, 1975
Local Cable Network Improvement	1975
Television Network	1975, 1977
Medium Wave Radio Network	1975, 1976

Source: JICA

WBG Projects

Communications (1 lending)	
Telecommunications Project (IDA)	1970
Broadcasting (none)	

Source: WBG



Source: JICA

Figure 7-3 Approved Amounts for Japanese ODA Loans (up to mid 1980s)

[17] Capacity of the telephone communications is estimated to be 32 million lines as of 2008. Of these, around 14 million lines are achievements coming from the master plans worked with JICA through a number of the Development Studies.

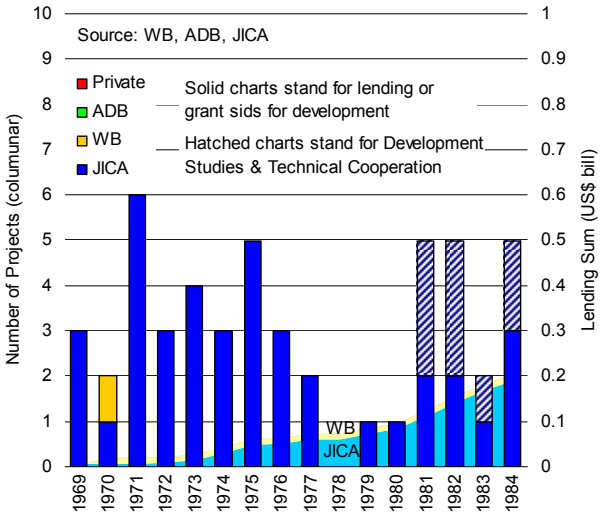
7.3. Vicissitude of Indonesian Information and Communications Sector

(1) The 1960s

In 1960s, it was urged to secure the long distance telecommunications linking many islands. Japan took the first initiative in 1969 for development of the inter-island telecommunications infrastructures. That is provision of the Japanese ODA loans to three telecommunications projects (one coastal communications and two microwave communications) in the first year of the First Five-Year Development Plan. It was the opening of the two-country cooperation in the sector, two years after Suharto regime began. At that time, economic cooperation from the international institutions was not started yet. Therefore, the Japanese ODA loan, of which lending conditions are very affordable, was sole finance source of Indonesia. Also, Indonesia had a good chance to introduce the Japanese technology into the country.

(2) The 1970s to the early 1980s

As the Suharto regime became stable in early 1970s, the national target was gradually shifting to the economy growth. It is imperative for economy growth to have the communications advanced. Thus, the Second Five-Year Development Plan (1974-1979) focused on development of the telecommunications networks connecting islands. The Government of Japan, in reply to the request from Indonesia, decided to advance its economic cooperation to the country by providing its ODA loans for the communications. Examples are installation of microwave communications and rehabilitation of superannuated facilities for the communications, as well as new construction of many TV and radio stations for the broadcasting.



No assistance was provided to the Indonesian Information and Communications Sector from the international institutions until mid 1980s. By contrast, in reply to the request from Indonesia Japan offered 31 information and communications infrastructure projects before 1980. Since 1981, Japan started its development studies aiming at more effective project development.

Figure 7-4 Activities of JICA, International Institutions, and Private Sector (up to early 1980s)

However, Indonesia faced at that time many other issues in the fields of foods, jobs, transportation, electricity, etc. Notwithstanding the Third Five-Year Development Plan (1979-1984), which attempted the telephone lines expansion in the large cities, the radio and TV system expansion in the outer-islands, therefore, the Information and Communications Sector was not able to be the first priority. Cooperation from WBG at that time was not

salient in comparison with other sectors. For example, WBG offered only one[18] telecommunications project in 1970s and ADB did not started its operation yet to the same sector. As the available budget was very limited, the first master planning was commenced in 1981 looking for effective developments. That is, the JICA's Development Study on the Improvement of Telephone Network in the City of Jakarta. It was the first initiative in master planning in the communications sub-sector of the country worked by the Government of Japan.

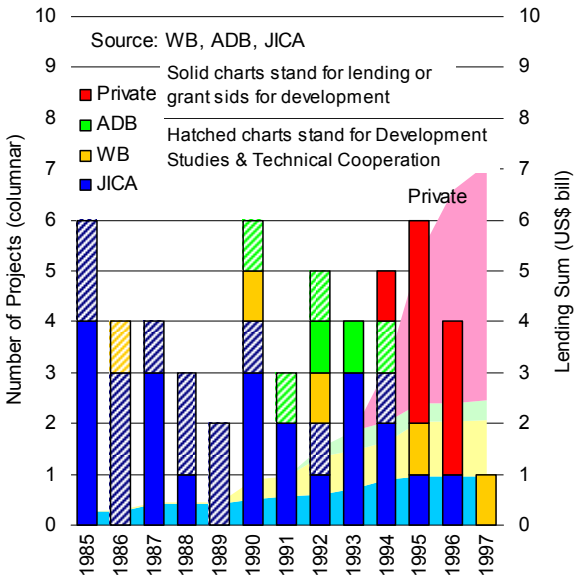
The said master plan showed the specific priority projects and led to the following infrastructure development projects. Examples are, the Telephone Network in Jakarta 1st Phase (ODA loan in 1981), the same 2nd Phase (ODA loan in 1985), as well as the Telecommunications Project Phases III and IV (1990 and 1992 respectively) by WBG. In early 1980s, apart from the telephone lines network expansion, Japan also provided its economic cooperation for six projects in total; the telecommunications network for the eastern regions (1982), the Long Term Development Programs of the International Telecommunications (1983), the Five-Year Plan for the Integrated Development of Radio and Television Broadcasting (1984), etc. The county's target in the information and communications was becoming clear and clear.

In the Japan's master planning projects, technology transfer was highlighted, and therefore, many Indonesian engineers or government officials took training courses in Indonesia or in Japan. In the Information and Communications Sector, the Indonesian trainees count 606 persons in total since the first technical seminar organized in 1976.

[18] The Telecommunications Project, IDA, Sector Investment and Maintenance Loan. Lending approved in 1970.

(3) The late 1980s

Since late 1980s, Japan backed up Indonesia by means of the Technical Cooperation as well as its ODA loans and Grant Aids. It greatly helped Indonesia amass many intangible fortunes of the information and communications.



In addition to the ODA loans and grant aids, since mid 1980s Japan provide Indonesia with the Development Studies to amass many intangible fortunes of the information and communications.

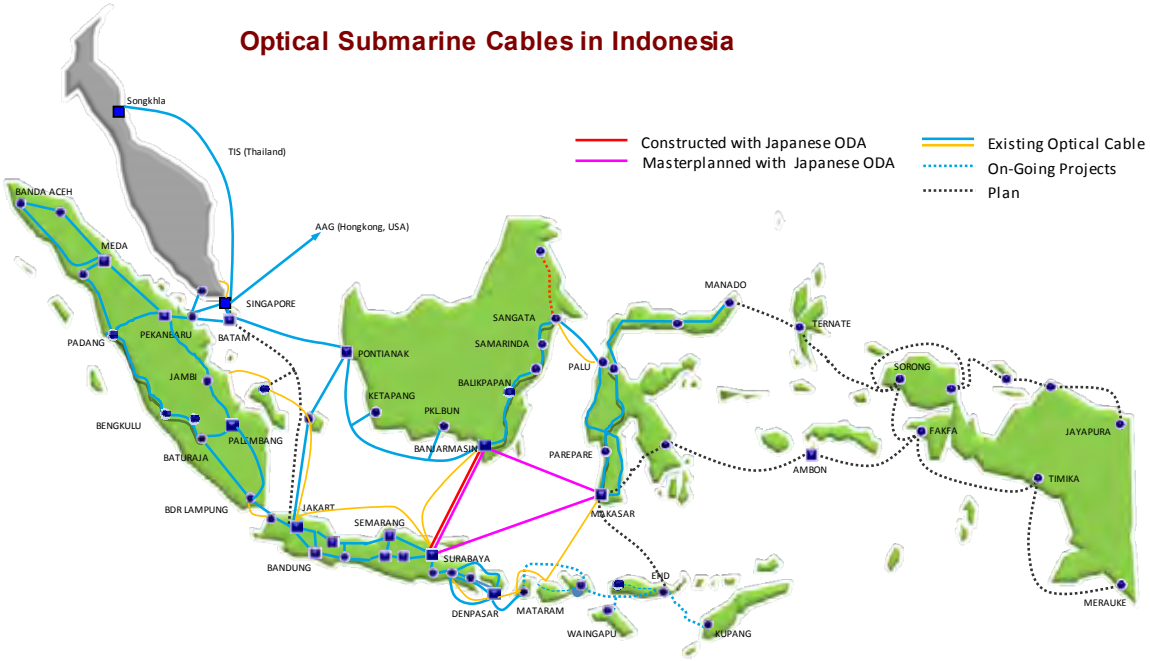
Figure 7-5 Activities of JICA, International Institutions, and Private Sector (1980s to 1997)

According to the statistics of ITU, the telephone penetration of Indonesia was more or less 0.47% in 1988, which was far behind other South-East Asian countries. For instance, it as less as one half of the China's achievement at that time. In the era, the telephone lines could not reach rural areas but large cities, and accordingly non Jakarta residents could hardly expect to have a phone home. In fact, more than 40% of the telephone subscribers reside in Jakarta and its surrounding. This situation urged the Government of Indonesia to establish its policy of the telephone system expansion within the Fifth Five-Year Development Plan (1989-1994). To do this, submarine trunk lines connecting islands first needed to be realized. As a great amount of soft loans from the international institutions were utilized to build the submarine cables in Indonesia, it was Japan that took the first action. In 1985, Japan decided to provide PT. Telkom with its ODA loans to the Java-Kalimantan Submarine Cable Project. The loans were put into the feasibility study (1986), engineering and construction (1987 to 1992), covering the whole process of the project realization. The said submarine project is the first realization of the Indonesian long distance sub-sea cable, which connects Surabaya (East Java) and Banjarmasin (South Kalimantan) by means of the 410 km long sub-sea optical cables with 280 Mbps of data transfer speed. In the on-shore site, a microwave telecommunication system was applied. The cable is now called "SB1" in the sector. As the digital technology was introduced, the SB1 could make contribution to improvement of the telecommunications reliability of the country. It is still working well, as one of the main trunk lines.

The Government of Japan supported Indonesia in 1988 through PT. Telkom for the Kalimantan-Sulawesi Submarine Cable Project, followed by the Java-Kalimantan cable. The Kalimantan-Sulawesi cable is one of the outcomes yielded from the Master Plan Study on the Telecommunications Network Development in the Eastern Region. The project development was later transferred to WBG. Until 1998, the 2,900 km long additional submarine cables were completed as the 2nd Surabaya-Banjarmasin cable (SB2), the Surabaya-Ujung Pandang-Banjarmasin (SUB), and the Pangkal Pinang-Pontianak (PP). Among many international institutions have made assistance to the Indonesian Information and Communications Sector, the Japan's operation must be

evaluated paramount significance, in terms of its number of projects and amount provided.

Surabaya-Banjarmasin Submarine Optical Cable Project
Approved / Reimbursed Amount : ¥7.95 bullion / ¥6.23 billion
Agreed January 1987
Loan conditions : 2.6% p.a. of interest, 30 years of repayment (10 years of grace), Normal Untied
Disbursement completed : December 2001



To build a 400 km long optical submarine cables between Java and Kalimantan islands. To meet the expanding and diversifying telecommunications demands in 1980s, to secure reliability and security, to realize Kalimantan industry advanced, and to smoothen information exchange between the island. The execution agency is PT. Telkom. Japanese ODA loans are provided for the feasibility study, design and construction, with Japanese consulting firm involvement. Because of the project, the telecommunications became advanced not only in quantity, but also in quality by means of the digital data transfer technology. The project is working as one of the telecommunication backbones of the country.

(4) The 1990s

As the submarine cables were in progress, the priority was shifted to the telephone line networks. The Government of Indonesia made its decision of the enterprising capital investment to the large city suburbs where the telecommunication demand was high; Tangerang and Bekasi adjacent to Jakarta and Surabaya suburbs. This investment was to attempt to accelerate the economic growth where it was desired. In collaboration with WBG[19], which had started its preparatory studies since 1986, Japan assisted Indonesia in development and improvement of the telephone line networks, in the form of the Extension and Improvement of Telecommunications Networks in Expanded Jakarta Areas (1993 and 1994) and the Regional Telecommunications Networks in Surabaya and Surrounding Areas Project (1992). These sets of the telephone line network

[19] Telecommunications Technical Assistance Project, IBRD, 1986.

equipment greatly helped PT. Telkom build up the main asset framework. In the project for the Jakarta telephone network expansion, the Indonesian and Japanese engineers jointly worked. This joint work raised professional capability of the Indonesian technical experts. It is noteworthy that since the project human resources exchange has become very active to date. Meanwhile, the maintenance equipment procured by the said project is still in use in good condition, and recognized as a symbol of the two country's friendship.

The Extension and Improvement of Telecommunications Networks in Expanded Jakarta Areas

Amounts Approved/Disbursed : ¥17.35 billion / ¥16.66 billion

ODA Loan Agreed : November 1993, November 1994

Loan Conditions : 2.6% p.a. interest, 30 years of repayment (10 years of grace), Normal Untied

Disbursement completed : December 2000, December 2001

This project newly installed around 360 thousand telephone lines at 111 switching stations in and around Jakarta. Because of this, the telephone line capacity was increased as much as 210 thousand additional subscribers. As the international institutions, like WBG, made their cooperation to the telephone network expansion, the Japan's involvement corresponded to 60% of the total telephone line capacity in Jakarta in early 1990s. The telephone penetration rate was increased to be 10.7% in 2001 from 7.8% in 1998.

A Switching Center Built by the Extension and Improvement of Telecommunications Networks in Expanded Jakarta Areas

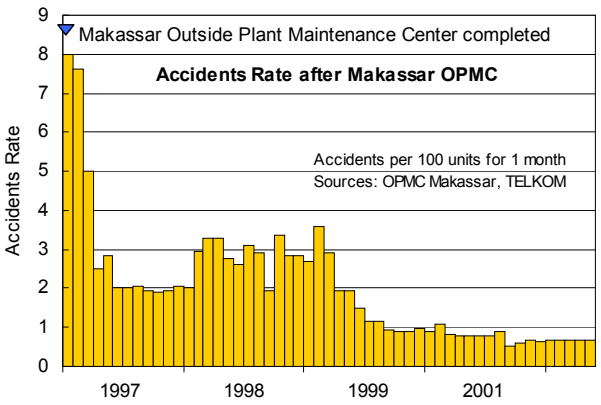
Moreover, the call completion rate was also dramatically improved due to the project; from 32% to 80% for the city calls and 28% to 71% for the long distance calls. (Values are compared between 1993 and 2001.) As the telephone user survey confirmed "satisfaction" of many subscribers in Cikarang Area, where a number of Japanese firms are located, it was evident that the facility of the telephone system was highly improved in and around Jakarta area.

During the project, the technology transfer was also highlighted. A number of the Indonesian engineers many Indonesian engineers or government officials took training courses in Indonesia or in Japan. Also, the joint work was made by the two countries' engineers at the planning and design stages of the project. The joint work raised professional capability of the Indonesian engineers. Since the project, human resources exchange has become very active to date. The maintenance equipment procured by the project is still in use in good condition.

Apart from the Jakarta Telephone Line Extension, Japan made similar cooperation in Surabaya area, too. The Surabaya project was started with its master planning in 1992 and three-phase development was fully completed before 2001.

As PT. Telkom hastened to develop the telecommunications infrastructures, the telephone penetration rate was well improved to be over 1.0% in 1994 from 0.8% in 1993. The Indonesian communications was advancing well in association with Japan and the international institutions, nevertheless another issue came up. That is, the telephone system malfunctioned often. Statistics for 1992 repots that the accidents rate of Indonesia was raised to be 4.1 (accidents per 100 telephones a month), which was in fact 80 times more frequent than that of Japan. To overcome such issues, the Government of Indonesia establishes its new development plan for the

telecommunications sector. The Fifth National 5-year Development Plan (1989 － 1994) purposed to ensure the reliability and high quality services of the telephone system, while the Sixth National 5-year Development Plan (1995－1999) schemed to expand the telephone network by building additional 5 million telephone lines. Under these circumstances, Japan offered its ODA loans to the projects for development of the Outside Plant Maintenance Centers (OPMC) (1990 and 1994) and the Outside Plant Construction Center (1994), which obtained good results in raise the telephone service quality and to expand the network. The Outside Plant Construction Center project, which in practice is a nursery for the Indonesian engineers, attracts a great deal of attention to the Japan's partnership to Indonesia. The center has been enrolling more than 100 trainees, except for a couple of years after the Asian Currency Crisis, and takes the lead of the capacity building in the communications sector of the country. As the center was ISO-9001 certified, it is evident that the Indonesian technology in telephone line networking is advancing toward the international level.



The 15 Outside Plant Maintenance Centers (OPMC) built by the project improves reliability of the telephone system. For example, the accident rate was reduced due to the project to be 0.7 from 8.0 in Makassar Station of PT. Telkom.

Figure 7-6 Accidents Rate Reduced (OPMC Project)

In the broadcasting sub-sector in the era, Japan made its cooperation to Indonesia through JICA in the telecommunications infrastructures and capacity building thereof. Example projects are, the Training for Radio and Television (Technical Assistance and Grant Aid in 1982), the Five-Year Plan for the Integrated Development of Radio and Television Broadcasting (Development Study in 1984), the Equipment Supply to Television Training Center (Grant Aid in 1997).

(5) The 1990s to the 2000s

The KSO Scheme

The KSO Scheme was called the Indonesian version of BOT (build-operate-transfer) It is a business scheme to utilize the funds and power of the private sector for rapid expansion of the fixed telephone business by granting the business rights to manage capital investments and business operations to private companies which share the profits with the state owned company, PT. Telkom. The scheme has been adopted in Sumatra, Western and Central Java, Kalimantan, and Sulawesi. The general view is that the KSO Scheme has failed to expand the telephone service and improve the efficiency of business operations, partly due to the unpredicted impact of the currency crisis. Presently, there is a move to recover granted business rights (repurchase shares in KSO companies).

Since the period from end 1980s to mid 1990s, Indonesia has sailed into use of the private vitality and money. In 1989 the Communication Law No. 3 allowed the private sector participation into the telephone business within some limits. The law attempts to encourage the private investors to be involved in development of the telecommunications, which demands advanced technology and huge investment as well. The practical operation began with the KSO Scheme in 1995. Despite the negative effects of the currency crisis, the KSO Scheme enormously expanded the private investment in the sector. As a result, it is successful in increase of the telephone penetration and financial independence of the Indonesian telecommunication sub-sector. In fact, since KSO Indonesian telecommunications has been able to secure the budgets without taking its own risk and to continuously receive the technology transfer from the advanced private telephone operators.

Japan's cooperation has a relation with the said private participation, which brought the great advance in the Indonesian communications sub-sector. That is, the target of the KSO Scheme was mentioned within the Sixth National 5-year Development Plan (1995-1999), of which concept preparation was supported by ADB and Japan. The cooperation projects are the JICA's Telecommunications Network Development Plan for Repelita-VI (master plan study in 1992), and ADB's Development Plan and Master Plan[20]. These master plans worked by Japan and ADB became not only the base of the Indonesian policy but partly the source of the technical specifications in the KSO tenders.

[20] Integrated National Telecommunication Strategic Development Plan and East Indonesia Strategic Master Plan, 1992, ADB

The country of Indonesia was seriously damaged to the private investment by the Asian Currency Crisis in 1997, nevertheless the Information and Communications Sector survived the disaster. As the private participation policy of Indonesia succeeded, the Information and Communications Sector of the country has been successful in a setup for self development not later than end 1990s. In fact, the Information and Communications Sector in Indonesia outgrew simple lending for asset building by using the international institutions.

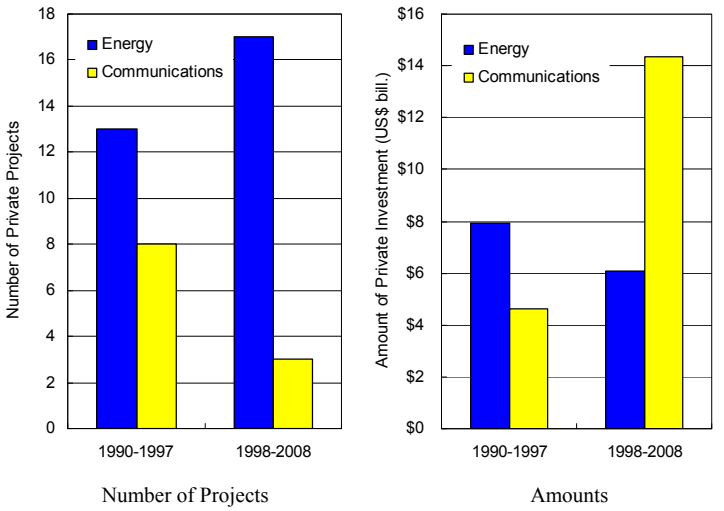
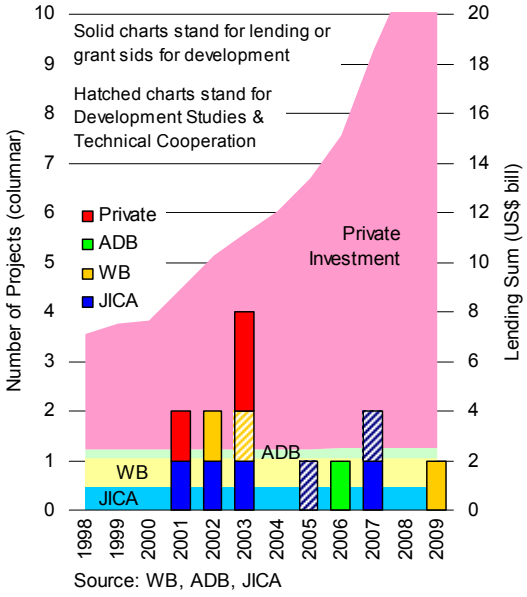


Figure 7-7 Private Investment Before and After the Asian Currency Crisis

As discussed earlier, the Information and Communications Sector becomes independent from the public financing, because it can utilize private money. In response to the independence of the Indonesian Information and Communications Sector, the international institutions accordingly changed their operations from financing for project development to the intangible cooperation, such as technical assistances and/or policy advice. Since 1998 Japan also altered the course of its cooperation to Indonesia toward policies, institutions, and advanced technology. Example projects are the Project for Improvement of Broadcasting Equipment for TVRI Jakarta News Division (Grant Aid in 2001), the Project for Improvement of Training Facilities for Multimedia Training Center (Grant Aid in 2002), the 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), etc. The Multimedia Training Center (MMTC) Project stands out prominently among other Japan's projects. The MMTC was build by the Japanese grant aid (the Training for Radio and Television, a project-type



Since the Asian Currency Crisis, Japan has been providing Indonesia with the policy propositions and advanced technologies through its grant aids or technical cooperation.

Figure 7-8 Activities of JICA, International Institutions, and Private Sector (1998 and onward)

Technical Cooperation in 1982) in order to develop faculties of those Indonesians who work for the broadcasting sector. The center is the sole broadcasting training body and has educated a large number of Indonesian talents. Today, MMTC is not only the sole Indonesian broadcasting specific school, but an international training center for the foreign talents.

7.4. Summary

The telecommunications is represented by the telephone system. According to Prof. Waverman[21], "the impact that mobile phones have on the developing world is as revolutionary as roads, railways and ports, increasing social cohesion and releasing the entrepreneurial spirit that stimulates trade and creates jobs." Despite still on-the-way growing, it can be said that the Indonesian telecommunications sub-sector is successful in telephone penetration and has been making a great contribution to the economy growth of the country. The broadcasting sub-sector represented by television and radio has also contributing to unification and democracy spread of the country, which is composed of multiple races and religions spread widely over a great number of islands. It was evident to everybody that the role played was great because the first television broadcasting was relay of the Independence ceremony in 1962. Both of the telecommunications and broadcasting are business sector that have greatly been influenced by the technology advance and privatization, and its business mode got totally changed in Indonesia, too, as many other counties experienced.

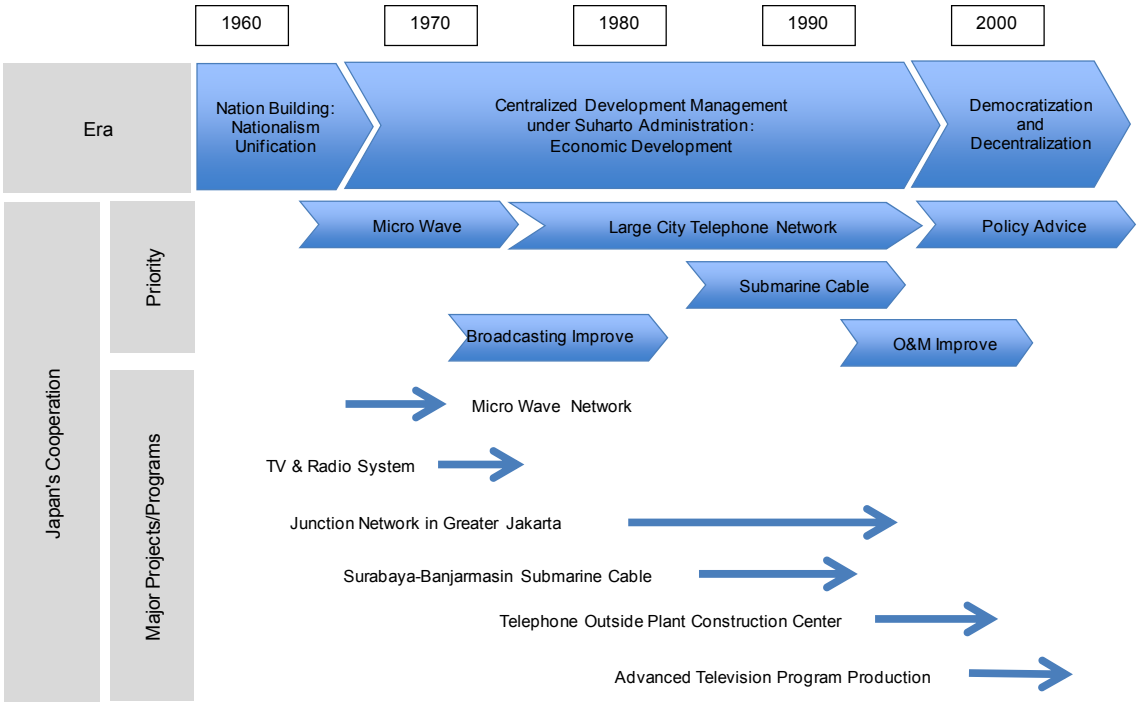


Figure 7-9 Changes of Cooperation in the Information and Communication Sector

[21] Leonard Waverman. Dean of the Haskayne School of Business at the University of Calgary. "Telecommunications Infrastructure and Economic Development" joint with Lars Hendrik Roeller, American Economic Review, Sept 2001. He suggests that in the OECD, the spread of modern fixed-line telecoms networks alone was responsible for one third of output growth between 1970 and 1990.

8. River Basin Development and Management

8.1 Outline of the Sector

8.1.1 General Trend in Japan's Cooperation

With the Neyama Drainage Tunnel Project as the start, the Japanese government has provided Indonesia with the assistances in river basin development and management over 40 years since the end of the 1950's. Indonesia-Japan cooperation has covered development study, grant aid, ODA loan, and technical cooperation.

The amount of the ODA loans steadily increased in four decades of the 1960s through the 1990s, while that in the 2000s decreased. Especially, the amount in the 1990s largely increased from that in the previous decade. The number of projects conducted as the other schemes than loan aid in each decade of the 1970s to the 2000s is constant at 9 to 10.

8.1.2 Characteristics of Japan's Cooperation at Different Periods

Japan's cooperation in water resources development and management is understood to have three periods; i) construction of multipurpose dams (3K project) in the 1960s, ii) planning through development study and implementation of priority projects (the 1970s to the 1990s), and iii) rehabilitation of existing water resources facilities and water resources management (the 2000s):

(1) Construction of multipurpose dams with focus on hydropower development under the War Reparation Agreement (the 1960's)

In water resource development ,too, Japan's cooperation began with the projects under the war reparations agreement. The memorial first project was the Neyama Drainage in the Brantas River basin, which started in the end of 1950. After completion of the project, malaria hardly outbroke and a large agricultural production was attained. in beneficial areas of the project. Consequently, the Japan's cooperation to the project was highly appreciated by the Indonesian government.

Following the policy of the Indonesian government, Japan provided offcicial loans to construct the three multipurpose dam projects referred to as 3K namely, Karangkates and Kali Konto Dams in the Brantas River basin and Riam Kanan Dam in South Kalimantan Province. These were recognized as the representative river basin development projects in the 1960s. These multipurpose dam projects were developed with a focus on hydropower generation, since at that time it was the first priority to reduce power shortage. The projects were completed at the end of the 1960s and in the 1970s.

(2) Development studies and priority projects on flood control and river basin development (the 1970s to the 1990s)

The flood took place and brought about serious damages almost every year in many river basins. It constituted one of the factors for impeding regional development. In addition, Indonesia also needed river basin development fo hydropower generation irrigation and municipal water supply. To meet these needs, the Japanese government carried out the development studies on flood control and river basin (water resources) development and the priority projects identified by the development studies were with Japanese ODA loans.

The multipurpose dams constructed in the period from the 1970s through the 1990s include Wlingi dam, Bening (Widas) dam, Wonorejo dam in the Brantas River basin, and Wonogiri Dam and Bili-Bili dam, which were the core projects in the Solo and Jeneberang River basins, respectively. Out of twelve studies/projects of the river basin development in the 1970s, ten of them are located in the Brantas River and Solo River basins. While, the ten studies/projects concerned with the three representative basins, which include those with ODA loans for construction of Bili-Bili and Wonorejo multi-purpose dams and development study on preparation of 3rd and 4th master plans for the Brantas River basin, were performed in the 1980s and the 1990s. Thus, many schemes concerned with the 3 representative basins were carried out in the period of from the 1970s through the 1990s. In this period, development study on river basin development was carried out for the purpose of development of the river basins other than the three representative basins. These include "Master Plan Study on North Banten Water Resource Development", "The Study on Belawan-Padan Integrated River Basin development" and "The Study on Kampar-Indragiri River Basin Development Project". These studies aimed at promoting the development in lagging regions where the development was behind.

Studies/projects on flood control were carried out in the 1970s and the 1980s. Those concerned with the aforesaid three representative basins and Ular River basin in North Sumatera represented about two thirds of the total number of the projects identified in the studies. In the three representative basins, flood was thus controled by combining reservoir's flood control function with river improvement works for downstream reach. Japan's cooperation in flood control has contributed greatly to the stabilization of people's life and regional economic development in those river basins.

In the 1990s, the number of flood control projects in other river basins than these four basins noticeably increased. During the period of the 1970s through the 1990s, flood control projects for four cities, namely Banda Aceh, Padang, Bandung and Medan, were implemented with the Japanese ODA loans. After completion of the projects, flooding has hardly took place in the four cities. Accordingly, the Japan's cooperation to Indonesia in flood control also contributed greatly to the stabilization of public welfare in major cities.

(3) Strengthening of assistance to rehabilitation of existing facilities and water resources management (the 2000s)

In view of the vast land area of the country and large population, it is continuously necessary to meet increasing water demands through the development of water resources and to take countermeasures against flood damages. Hence, Indonesia is still

in high need of the river basin development and management. Taking the situation into account, the assistance of the Japan's cooperation for river basin development and management including flood control has been continuously provided to Indonesia even in the 2000s. Japan's cooperation in the river basin development and management in the 2000s stressed the following points:

- Rehabilitation of the existing flood control and water resources facilities which were deteriorated in main river basins such as the Brantas, and Bengawan Solo River basins.
- Capacity building for the organizations concerned with river basin management

In the 2000s, the Indonesian government attempted to manage integrated water resources through participation of various stakeholders in respective river basins. To support this attempt, the Japanese government is carrying out the technical cooperation project entitled "Capacity Development Project for River Basin Organizations in Practical Water Resources Management and Technology".

8.2 Major River Basins Development Projects with Japan's Cooperation

It is determined that the river basins satisfying the following conditions are selected as the representative river basin on the Japanese assistances:

i) A multipurpose dam constructed with the Japanese ODA loans is situated on the mainstream, playing a key role of flood control and water resources development in the basin,

ii) Even after completion of the multi-purpose dam, the Japan's cooperation have been continuously provided for the schemes concerned with the basin, and

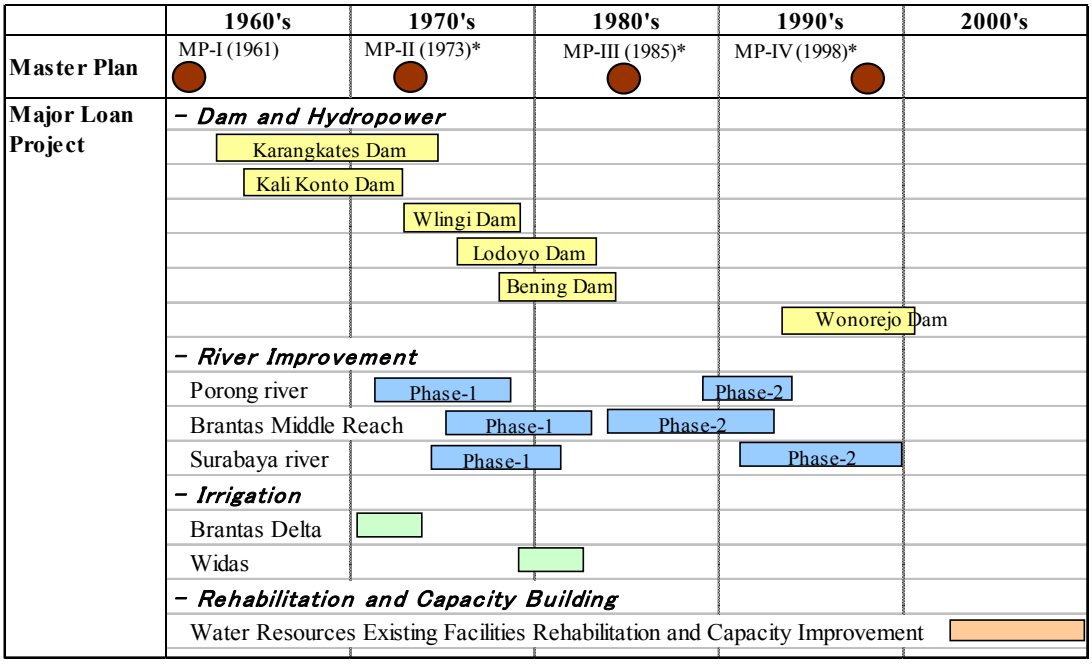
iii) Transfer of knowledge for the Indonesian experts/engineers has been sufficiently performed.

As a result of the examination on the river basin development and management that were implemented with the assistance of the Japanese government, the thee river basins, namely the Brantas, Bengawan Solo, and Jeneberang River basins, are selected as the representative river basins, since these are recognized as the main river basins from the various factors including catchment area and the long-term Japan's cooperation which have been provided to construct the multi-purpose dam on the mainstream .and implement other studies and projects in the basin. Besides, the three multipurpose dams, namely Karangkates Dam, Wonogiri Dam and Bili-Bili Dam in the three representative basins, respectively, are selected as core projects therein, since they play the distinguished role in the flood control and water resources development in each river basin.

8.2.1 Contributions of Japan's Cooperation in Major River Basins Development

(1) Brantas River Basin

As described above, the Japan's cooperation was provided for Brantas River basin development continuously since Neyama Drainage Tunnel project. It has been recognized by both governments as a success of the Japan's cooperation to Indonesia. Most of development projects in the Brantas River basin have been implemented with the Japanese ODA loans based on a master plan prepared at intervals of about years under the assistance of the Japanese Government. In total, eight (8) hydropower stations including the one installed at the end of the Tulungagung drainage tunnel are now in operation in the Brantas River basin. Out of these hydropower stations, the six (6) ones excluding aforesaid Tulungagung hydropower station and Sengguruh hydropower station were constructed with the Japanese ODA loans. Thus, the Japan's cooperation has greatly contributed to meet the increasing power demand in East Java Province.



Note: *: shows the master plan study carried out under JICA.

Figure 8-1 M/P Formulated and Projects Implemented with Japanese Assistances in the Brantas River Basin

In the Brantas River basin, the irrigation development proceeded with water resources development by construction of the multi-purpose dams and the total irrigation area developed by the main irrigation projects amounts to about 118 thousand ha. The irrigation development in the Brantas River basin was proceeded not only under the Japanese assistance, but also with the funds of ADB and the World Bank. With regard to the flood control, the Brantas River basin is protected from flood by combining the reservoir's flood control function of upstream multipurpose dams with flood control works for the middle and downstream reaches to keep the flood control level up to a 50-year probability. The flood control works for the Brantas River, which include those for the middle reach, Surabaya River and Kali Porong River, had been implemented with the Japanese ODA loans. After completion of the flood control works in the Brantas river basin, no flooding from the Brantas River took place in

low-lying areas of Surabaya City with a population of about 3 million, Mojokerto City, and Kediri City, which spread along the Brantas River. In addition, the river water regulated by the upstream multi-purpose dams is also effectively utilized for domestic and industrial water supply. The Brantas River water that is seasonally regulated by the upstream multipurpose dams is being extracted by the downstream regional water supply corporations (PDAMs). In the lowermost reach of the Brantas River, the river water is being extracted by PDAM Surabaya and Karangkates multipurpose dam still plays an important role as a source for the water supply.

Effect of Karangkates dam

Karangkates dam has an effective storage capacity of 282 million m^3 which accounts for about 60% of the total one of all multipurpose dams in the Brantas River basin. Since the dam is situated on the Brantas mainstream, it enables the effective seasonal regulation for the comparatively large inflow to the reservoir. Besides, it has also played a distinguished role in the water supply as the precious water source in the Brantas River basin, in addition to flood control.

Pleasure Boats in Karangkates

Hydropower Waterway Facilities Provided Downstream of Karangkates Multi-Purpose Dam

Transfer of knowledge through Brantas river basin development:

In the early the 1960's, an attempt was commenced to transfer the technology and knowledge on water resources development from the Japanese experts to Indonesian ones in the Brantas River basin. At that time, the Indonesian Government realized the most effectively the transfer of technology and knowledge by means of adopting the measures suiting the objectives through the project management and administrative arrangements in stages. One of the measures in the project implementation is to construct the project works by means of the force account system which was adopted by the Brantas Project Office. The construction cost was reduced by adopting the force account system and technical capability was outstandingly raised up through the man-to-man system between the Japanese and Indonesian engineers in the counterpart system adopted together with the force account system. With regard to the transfer of knowledge, these aspects are highly appreciated by the Indonesian Engineers who participated in construction of projects in the Brantas River basin at that time.

The functions of the Brantas Project Office established in early the 1960s were transferred to the present BBWS office and following three (3) organizations to deliver the experiences and knowledge of the Brantas River Project Office to the whole Indonesia:

i) Consultant; PT. Indra Karya (established in 1970)

ii) Construction company: PT. BRANTAS ABIPRAYA (established in 1980)

iii) Water Resources Public Corporation; PJT 1 (established in 1990)

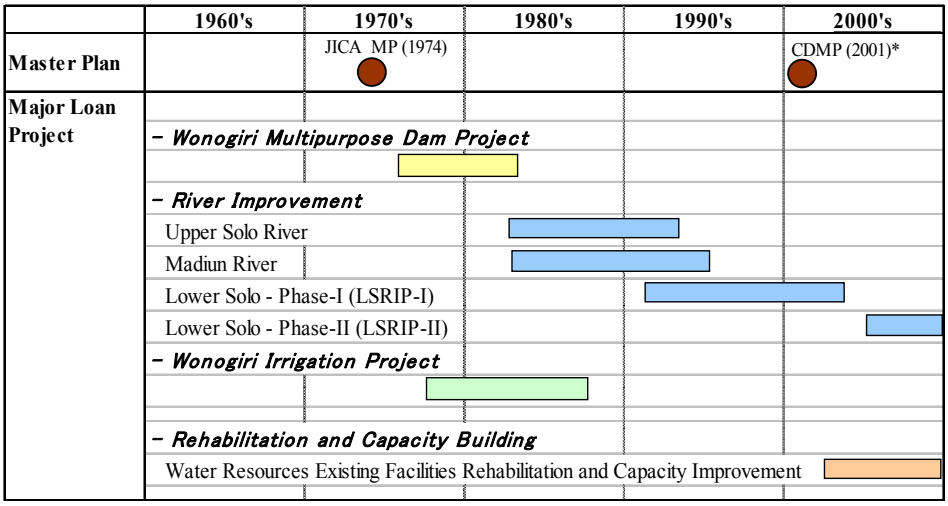
Water resources existing facilities rehabilitation and capacity improvement project

As the latest loan aid project financed by the Japanese Government, the "Water Resources Existing Facilities Rehabilitation and Capacity Improvement Project" 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 PJT 1 that is responsible for operation and maintenance of water resources and flood control facilities in the Brantas River basin.

(2) Bengawan Solo River basin

The Bengawan Solo River which flows down through the Central Java area occupies a catchment area of 16,100 km^2 and is ranked as the largest river in Java Island in terms of the catchment area. As well as the Brantas River basin, the Bengawan Solo River basin where the old city, Surakarta (Solo), is located had suffered from flood damages almost every year since the old times. Especially, in the 1966 flood, the flood discharge of Bengawan Solo inundated in a shot time two third of the city area including the palace area. The flood damages extended to the nearby towns and villages and consequently the flood damage became the largest in the past.

To promote the development of the Bengawan Solo River basin including flood control, the Japanese Government formulated a master plan on the river basin development in 1973 under JICA. While construction of the Lower Solo Improvement Project II is underway with the Japanese loan-aid, the projects concerned with river basin development of the Bengawan Solo have been realized almost in accordance with the aforesaid master plan. After then, in accordance with the official request of the Indonesian Government, the feasibility studies on the Wonogiri multi-purpose dam and development of upper Solo basin, flood control and water resources development plans have been conducted and the priority projects selected through the feasibility studies have been implemented with the Japanese ODA loans.



Note: *; A study on comprehensive Development and management Plan (CDMP) was carried out under LSRIP-I.

Figure 8-2 M/P Formulated and Projects Implemented with Japanese Assistances in the Bengawan Solo River Basin

Contribution of Wonogiri Multi-Purpose Dam

After completion of the Wonogiri multi-purpose dam in 1982 with the Japanese loan-aid, it contributed greatly to power supply, flood control, irrigation and municipal water supply in the region. The Wonogiri hydropower station with an installed capacity of 12.4 MW produces an annual average energy output of $55x10^6$ kWh, constituting the precious power supply source therein. Wonogiri dam and reservoir is contemplated to have a flood control space to mitigate a inflow peak flood of 4,000 m^3/sec to the outflow peak of 400 m^3/sec. As well as the Brantas River basin, the flood control plan for the upper Solo River basin is contemplated to be realized by combining the reservoir flood control effect of the Wonogiri Dam and the river improvement works for the downstream reach. After completion of the Wonogiri multipurpose dam and river improvement works in the upper Solo reach, Surakarta City could keep the flood protection level of a 10-year probability. Consequently, it had hardly suffered from the flood damage and the people' life therein became very stable. Besides, the Solo River water that is released from the Wonogiri Dam after regulation by its reservoir is extracted in the downstream head work to irrigate the paddy field areas (about 30,000ha) of the Wonogiri Irrigation Project.

(3) Jeneberang River Basin Integrated Development

To cope with the issues on flood and water resources (water shortage in the dry season) in the Jeneberang River basin including Makassar City, the flood control plan including development plan of the Bili-Bili multipurpose dam was formulated through the JICA two (2) development studies, namely "Lower Jeneberang River Flood Control Project" and "Jeneberang River Flood Control Project (Phase 2)". In the development studies, the Bili-Bili dam was planned to have a flood control space secured in its reservoir storage capacity. Consequently, the flood control for the downstream reach of the

Jeneberang River was formulated to cope with a 50-year probable flood by combining function of the flood control space of the Bili-Bili multi-purpose dam and river improvement works along the downstream reach of the Jeneberang River. Afterwards, the Japanese loan aid for construction of the Bili-Bili Dam including installation of main water conveyance pipe to the city area was provided to the Indonesian Government three (3) times until its completion in 2001. The facilities for water supply to Makassar City, irrigation water supply and construction of hydropower station located downstream of Bili-Bili Dam, which constitute the components of the Bili-Bili multi-purpose dam project, were realized through the three (3) Japanese loan-aid projects, namely "Ujung Pandang Water Supply Development Project (Stage I)", "Bili-Bili Irrigation Project", and "Multipurpose Dam Hydroelectric Power Plants Project" for development of municipal water supply, irrigation, and hydropower, respectively.

Classification		Title of Study/Project
Development Study		Lower Jeneberang River Flood Control Project(1979-1980)
		Jeneberang River flood Control Project (Phase II) (1981-1982)
		The Study on Capacity Development for Jeneberang River Basin Management (2004-2007)
Loan Aid Project	Dam and flood control	Lower Jeneberang River Urgent Flood Control Project
		Bili-Bili Multipurpose Dam Project, Phase I, II, III
	Municipal water supply	Ujung Pandang Water Supply Development Project (Stage I)
	Irrigation	Bili-Bili Irrigation Project
	Hydropower	Multipurpose Dam Hydroelectric Power Plants Project
	Sabo works	Urgent Disaster Reduction Project for Mt. Merapi/Progo River Basin and Mt. Bawakareng

Table 8-1 Study and Projects on River Basin Development and Management in the Jeneberang River Basin, Implemented with Japanese Assistance

Contribution of Bili-Bili Multi-Purpose Dam

The hydropower station constructed just downstream of Bili-Bili has an installed capacity of 20MW and contributed to suffice the power demand in the region whose center is Makassar City. After completion of Bili-Bili multipurpose dam, the flood control protection level for Makassar City and its surrounding areas with population of about 1.2 million increased from 10-year probability to 50-year probability. Although the habitual flooding from the Jeneberang River frequently took place before completion of the Bili-Bili multipurpose dam, it hardly occurred after completion thereof, leading to establishment of the bases for Makassar City to maintain the functions as the provincial capital and to attain the economic development. After then, the downstream irrigation area had increased to about 24,000ha in 2005. In addition, after completion of the Somba Opu water treatment plant (WTP) with a capacity of 1,000 liter/sec (886,400 ton/day), the service ratio of piped water in Makassar City increased to about 70%. These hydropower, irrigation and municipal water supply projects were constructed with the Japanese loan aids, exhibiting that the development of the Jeneberang River basin has been implemented with the Japanese consecutive assistances.

8.3 Japan's Cooperation in Managing River Basins and Water Resources

As described above, the Indonesian Government has started placing the importance on improvement and enhancement of water resources management system in the 2000s. To support the policy of the Indonesian Government, the Japanese Government assisted the Indonesia Government in the field of water resources management as stated below:

(1) Establishment of water councils in major river basins

With regard to the river basin management or water resources management, there has been a new movement in 2009 that the water council is established in the Brantas and Bengawan Solo River basins in accordance with the Water Resources Law No.7 of the country. The Water Council (WC) adopts the new policy of water resource management with the people's participatory approach.

In April 2010, the Jeneberang BBWS office is carrying out the preparatory works for establishing a new water council for the Jeneberang River basin. Also the preparatory works for establishing a new water council at the national (central government) level is underway under the assistance of the JICA long-term expert.

(2) Water resources management

The Japanese Government has contributed to the capacity building for the river basin (water resources) management in Indonesia by means of performing "The Study on Capacity Development for Jeneberang River Basin Management" and "Capacity Development Project for River Basin organizations" as the development study and technical cooperation project, respectively, as explained hereunder.

Study on capacity development for Jeneberang river basin management

The JICA study has contributed to the enhancement of the technical capabilities of the counterpart personnel by means of training for the office staffs and preparation of many useful manuals in the various fields such us the reservoir operation plan of Bili-Bili dam/reservoir, determination of water allocation to the respective sectors, O&M of mechanical and electrical equipment.

Capacity Development Project for river basin organizations

The technical cooperation project aims to establish the diffusion unit of water resources management technology (DUWRMT) and technical assistance to activities of the unit. In the project, at present, the preparatory works for establishing the DUWRMT have been almost completed.

8.4 Countermeasures against Sedimentation of Dam Reservoirs

To cope with the increasing sediment inflow into Karangkates, Wonogiri and Bili-Bili multipurpose dams in the three representative basins due to the aggravated conditions of their catchments, countermeasures against the reservoir sedimentation are being carried out or are planned to be carried out with ODA loans. Concerning the Karangkates

multipurpose dam, the dredging equipment for removing sediments in reservoir has been procured under the aforesaid loan aid project, called the "Water Resources Existing Facilities Rehabilitation and Capacity Improvement Project". In case of the Bili-Bili multipurpose dam, sabo dams have been built on the Jeneberang River upstream of the Bili-Bili Dam under the loan aid project called the "Urgent Disaster Reduction Project for Mt. Merapi/Progo River Basin and Mt. Bawakaraeng". Besides, in case of the Wonogiri multipurpose dam, the reservoir sedimentation countermeasures including construction of new spillway for flushing the reservoir sediments and watershed conservation for the dam catchment are scheduled to be implemented with ODA loans. It is Wonogiri Reservoir Sedimentation Countermeasure Project I.

8.5 Summary

The overall flow of the Japan's cooperation in the river basin development and management sector is shown in the following figure:

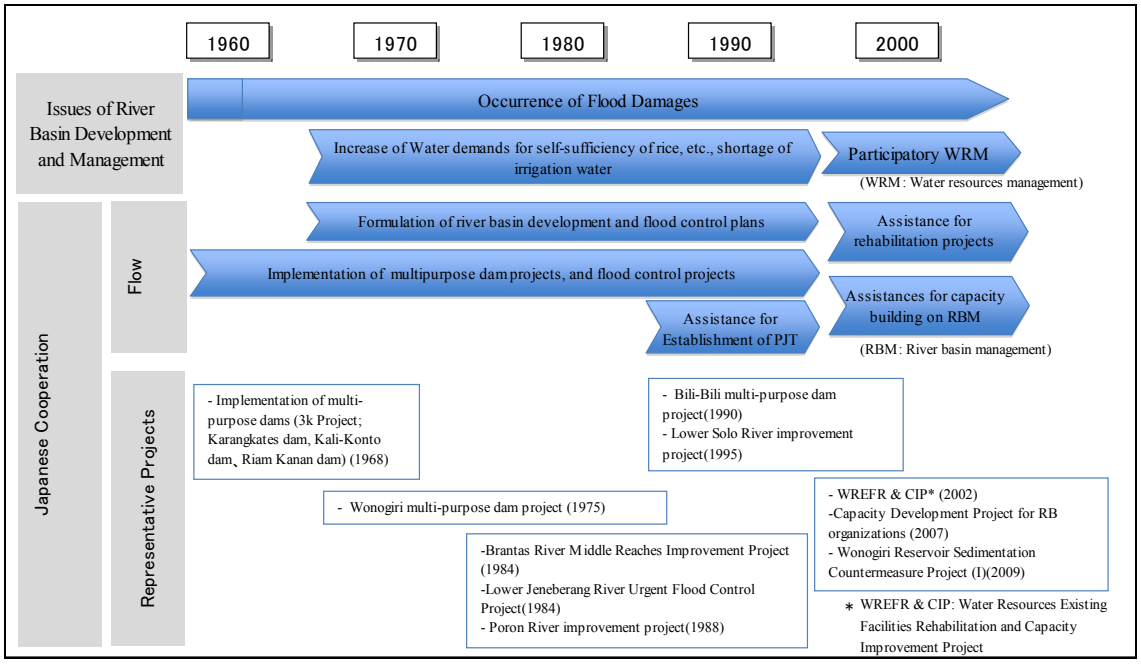


Figure 8-3 Overall Flow of Japanese Assistances to Indonesia in the Sector

We understand that Japan's cooperation has been provided in three periods: i) construction of multipurpose dams (3K project) in the 1960s, ii) planning and project identification through development studies and implementation of the identified projects in the 1970s to the 1990s, and iii) rehabilitation of existing water resources facilities and water resources management in the 2000s.

Following the policy of the Indonesian government, he Japanese government cooperated in the development of three multipurpose dam in the 1960s. They are Karangkates and Kali Konto Dams in the Brantas River basin and Riam Kanan Dam in South Kalimantan Province.

In the past, the flood took place almost every year in a lot of river basins in Indonesia. Also in the 1970's to the 1990s, Indonesia needed river basin development for hydropower generation, irrigation and municipal water supply. Thus Indonesia and Japan cooperated in development studies on flood control and river basin development. The development studies identified priority projects for finance by the Japanese ODA loans.three. In the period from the 1970s to the 1990s, flood control projects were implemented for four cities, namely Banda Aceh, Padang, Bandung and Medan Cities, with the Japanese ODA loans. These Japan's cooperation contributed greatly to stabilization of public welfare and economic development in the regions.

In the 2000s, Japan's cooperation concentrated on i) Rehabilitation of existing flood control and water resources facilities, and ii) capacity building for the organizations concerned with river management. Besides, the Japanese government helped Indonesia to remove and/or reduce sedimentation in existing dams including Karangkates dam, Bili-Bili dam and Wongiri dam.

While the development of the Brantas River basin has been highly appreciated in Indonesia as a successful river basin development. While, the success has been attained by appropriate management and measures taken by the Indonesian govermant. Japan's cooperation contributed to the success in terms of i) consistent cooperation from master plan study to project implementation, ii) continued cooperation, iii) a stress on transfer of technology.

The functions of the Brantas Project Office established in the early 1960's were transferred to the present BBWS office, PT. Indra Karya, a cosultant, PT. ABPRAYA , a construction company and , PJT 1, a water resource public corperation to deliver the experiences and knowledge of the Brantas River Project Office to other parts in Indonesia.

Table 8-2 Issues and Cooperation in the Sector of River Basin Development and Management

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
River Basin Development and Management	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Occurrence of flood damages in the basins where flood control facilities are not improved.				
			− Increase of water demands for self-sufficiency of rice and shortage of irrigation water			− Promotion of participatory water resources management − Law No.7/2004 regarding water resources/elucidation − Establishment of Balai that is under direct control of the central government
					• Government Regulation No.5/1990 regarding establishment of new water public corporation − Drought due to El Nino Phenomenon (1997)	
	Priority Development Issues shown in 5-year plan	− Construction of multipurpose dams for the nation building	− Promotion of water resources development for power supply, flood control, and irrigation and domestic/industrial water supply − Implementation of flood control measures for increasing the agricultural production and stabilization of the public welfare			− Sustainable WR development and management − Efficient water use by enhancing the capability of O&M of WR facilities − Improvement of systems of institution and management on WR.
					− Establishment of new water public corporation (in the Brantas and Citarum River basins)	
	Japanese Approach for Development Issues	− Promotion of development of multipurpose dams for the purpose of irrigation and municipal water supply in addition to flood control	− Assistance on river basin development − Assistance on flood control	− Assistance on river basin development − Assistance on flood control	− Assistance on river basin development − Assistance on flood control	− Assistance on improvement of river basin management − Assistance on flood control
	Priority Programs/ Projects for Japanese Cooperation	− Construction of multi-purpose dams (Kali Konto dam, Riam kanan dam, Karangkates dam)/1	− Construction of Wlingi Dam and Wonogiri Dam in addition to 3 dams in the left-side column − River basin development and flood control (Brantas River, Solo River, and Jeneberang River) − Flood control (formulation of development plans, river improvement works, etc.)	− Construction of multipurpose dams (Bili-Bili dam, Wonorejo Dam) − Multipurpose Dam hydroelectric power plants project − Flood control (formulation of development plans, river improvement works, etc.) − Assistance on establishment of water public corporation		− Assistance on rehabilitation such as reservoir sedimentation countermeasures − Capacity building for organizations concerned with river basin management − Implementation of flood control project with sector loan

Note
/1: The reparation of the Second Worlld War II was also used for the construction.
Abbreviations
1. *; WREFR & CIP: Water Resources Existing Facilities Rehabilitation and Capacity Improvement Project
2. WR: water resources, RB: river basin, develop.: development, manage.: management

9. Disaster Management

The assistances for disaster management can be largely divided into two (2) parts, namely assistances related to disaster protection and those on post-disaster recovery and reconstruction. These are described hereunder.

9.1. Disaster Prevertion

(1) Sabo

1) Background and Feature of Japanese Government's Assistance on Sabo

Indonesia is ranked as one of the world's most prominent volcanic countries, as well as Japan. In Java Island that is the political and economic center of the country, especially, there exist a lot of volcanoes of more than 20. Many people in the island have lived around the volcanoes under the influence thereof. As observed in the surrounding areas of Mount Merapi, people in Java Island have encountered natural disasters attributed to volcanic eruption. It can be said that even now about 120 million people are always faced with disasters related to volcanic eruptions.

Since in Indonesia large-scale disasters due to volcanic products have so frequently taken place so far, the countermeasure for sediment disasters has become the important issues in preservation of the land and economic development in the country. After the Indonesian Government officially requested the Japanese Government to provide the technical assistance on sabo technology in early part of 1970s, the Japanese Government has assisted the country in the sabo disaster in the following manners:

- Execution of development study and loan aid project on countermeasures for volcanic sediment disaster like Mount Merapi
- Execution of technical cooperation project like "Sabo Technical Center", "Improvement of the Volcanic Technology"

2) Technical Cooperation Project by Japanese Government on Sabo

In response to the official request from the Indonesian Government on the technical cooperation for the sabo technology, the Japanese Government dispatched the JICA long-term expert to the country in early part of 1970s. Thereafter, in accordance with the official request on the Volcanic Sabo Technical Project of the Indonesian Government, the Japanese Government has performed the technical cooperation including execution of the following technical cooperation projects over about 30 years in the past.

Sabo Technical Center in Yogyakarta

- Volcanic Sabo Technical Center Project
- Sabo Technical Center Project
- Integrated Sediment-Related Disaster Management Project for Volcanic Area

It is reported that a lot of Indonesian sabo engineers of more than 300 were trained and brought up through the three (3) technical cooperation projects mentioned above. Thus, the Japanese technical cooperation projects related to sabo have much contributed to bringing-up of and capacity building for the sabo and sabo-related engineers in Indonesia.

As a result of the technical assistance of the Japanese Government to Indonesia in the field of sabo which has been performed almost consecutively since early 1970s, it is assessed that the Indonesian sabo engineers raised their technical capabilities concerning the following points:

- Capacity building of the Indonesian sabo engineers through exchange and joint possession of data/information related to sabo technologies of both countries by both Indonesian and Japanese sabo engineers
- Capacity building of the Indonesian sabo engineers through transfer of technology and knowledge on mitigation of sediment-related disaster damage from the Japanese engineer to Indonesian engineer
- Diffusion of idea on pyroclastic flow management and integrated sediment-related disaster management among the Indonesian sabo engineers through preparation of guidelines and manuals on management of pyroclastic flow, as well as the integrated sediment-related disaster management which has been performed with the initiative of the Japanese engineer.

3) Effect of Japanese Government's assistance on sabo including volcanic sabo of Mount Merapi

In Indonesia, the three (3) volcanoes in Java Island, namely Mountain Merapi, Kelud, Semeru, were dealt with by the Japanese loan aid in terms of the volcanic disasters until now. Of these, the Mountain Merapi with a peak of 2,911m which is situated in the Central Java Province is said to be the most active volcano, erupting very frequently until now. People around the mountain have suffered from the disaster caused by the repeated eruptions and the resultant flow of sediments and stones. Concerning Mount Merapi, the development study called "Master Plan Study on Land Erosion and Volcanic Debris Control in the Area of Mt. Merapi" was carried out under JICA in 1980. Thereafter, the following three (3) Japanese loan aid projects were implemented to cope with the volcanic sabo disaster:

- Mt. Merapi Urgent Volcanic Debris Control Project (1985)
- Mt. Merapi and Mt. Semeru Volcanic Disaster Countermeasures Project(II) (1995)
- Urgent Disaster Reduction Project for Mt. Merapi / Progo River Basin and Mt. Bawakaraeng (2004)

(2) Japanese Assistance on Disaster Prevention, Conducted after Latter Part of 2000s

From the latter part of 2000s, the Japanese Government has assisted Indonesia in prevention of disasters like the natural dam disaster called "Banjir-Bandang" disaster and related to the Sumatera Offshore Earthquake in 2004 and the Central Java Earthquake in 2006, and formulation of the natural disaster management plan in Indonesia through execution of the technical cooperation projects and development study mentioned below.

- Enhancement of capability to deal with Banjir-Bandang disaster
- Improvement of seismic resistibility for houses/buildings
- Establishment of tsunami early warning system
- Strengthening of comprehensive disaster prevention system

1) Enhancement of capability to deal with Banjir-Bandang disaster

In response to the official request from the Indonesian Government, the "Project on Integrated Disaster Mitigation Management for Banjir-Bandang" is being carried out as the technical cooperative project under JICA and it is scheduled to be continued for the period from 2008 to 2011. The Banjir-Bandang is divided into some types of flood/sediment, out of which the severest damage is caused by sediment/debris flow associated by creation of natural dam in a gorge. In the technical cooperation project, it is planned to enhance the capability of staffs of the concerned organizations by means of strengthening their capabilities for investigating the disaster areas, as well as establishing the investigation methods and improvement of warning and evacuation system in model areas of the disaster.

2) Improvement of seismic resistibility for houses/buildings

In connection with the JICA's reconstruction aid project for the Central Java Earthquake Disaster which took place in 2006, the "Project on Building capacity and Enforcement Capacity Development for Seismic Resilience" is being carried out as the technical cooperation project under JICA in order to improve the architectural administrative system for improvement of seismic resistibility of houses/building and enhance the capacity to enforce the system over the whole Indonesia. The technical cooperation project is going to be performed for the period from 2007 to 2011. The project aims at; i) preparing and improving the architectural standards, ii) improving the administrative functions to check in the architectural permit system, and iii) diffuse widely the information on appropriate house design and effective method for enhancing the seismic resistibility in the project area. The assisting works for PUCK (the Directorate General of Human Settlement of the Ministry of Public Works) that have been conducted under the project involve the preparation of support system for improving architectural standards and building permit system, development of architectural MIS (Management Information System), and establishing regulation and adequate utilization of architectural permit in the project area.

3) Establishment of tsunami early warning system

With suffering from the severe damage in the 2004 Sumatera Offshore Earthquake, the

administrative preparation for disaster prevention, which includes formulation of disaster prevention action plan and enforcement of fundamental law on disaster prevention, has proceeded rapidly. Especially, the establishment of tsunami early warning system is regarded as one of the main policies on the administration of disaster prevention and the Meteorological, Climatological and Geophysical Agency, Indonesia (BMKG) became in charge of the tasks under the ground scenario prepared toward the establishment. To enhance the capability of staffs of tsunami warning center of BMKG, the "Project on Capacity Development for National Center of Tsunami Early Warning System" was carried out for the period from 2007 to 2009 as the technical cooperation project under JICA.

4) Strengthening of comprehensive disaster prevention system

The Japanese Government and various international organizations performed the urgent aids and assistances of restoration for the 2004 Sumatera Offshore Earthquake. Under such circumstance, a summit meeting of Japan and Indonesia was held in June 2005. In the summit meeting, the top leaders of both countries recognized that the most prioritized issue of Indonesia is to enhance the capability to mitigate the damages due to natural disasters such as earthquake, tsunami. For the purpose of mitigation of the damage, besides, it was decided to establish the disaster joint committee of Japan and Indonesia in order to assist on improvement of the existing disaster prevention system in Indonesia.

In response to the official request from the Indonesian Government, the Japanese Government decided carrying out the "Study on Natural Disaster Management in Indonesia", which aims at preparing the comprehensive disaster prevention plan at national and regional levels, as well as capacity building for organizations and communities concerned with disaster prevention. The JICA study selected Kabupaten Jember in East Java Province and Pariaman city in Kabupaten Padang Pariaman of West Sumatera Province as the model areas and was carried out for the period from 2007 to 2009. The JICA study contributed to formulation of comprehensive disaster prevention plan and strengthening of capability of communities on disaster prevention. The JICA study dealt with the four (4) kinds of disasters, namely earthquake, tsunami, flood and sediment related disasters, and the disaster prevention plan primarily consists of three (3) chapters of; i) disaster prevention, ii) urgent measures, iii) restoration and reconstruction.

In the meantime, the Japanese loan aid on "Disaster Recovery and Management Sector Program Loan" was signed by the Japanese and Indonesian Governments in December 2007. The Japanese loan-aid project aims to assist Indonesia in strengthening comprehensively and fundamentally the capacity to cope with the natural disasters from the aspects of institution, organization and infrastructures.

(3) Establishment of National Disaster Prevention Agency (BNPB)

Although the BAKORNAS was the organization in charge of the disaster prevention at the national level until 2008, it did not function sufficiently in implementing the

post-disaster measures for the 2004 Sumatera offshore earthquake and 2006 Central Java earthquake. Due to the reason, BNPS was established in 2008 through the efforts of the Indonesia Government as the organization to move forward the matters recommended in the aforesaid disaster joint committee of Japan and Indonesia and to implement strongly the recovery and reconstruction plan after occurrence of disaster. Thus, the Japanese Government contributed to strengthening the system of organizations for disaster prevention through the Joint Committee on Disaster.

9.2. Assistance for Post-Disaster Recovery and Reconstruction

Out of earthquakes and tsunamis that so far took place in Indonesia, the three (3) earthquakes, Sumatera Offshore Earthquake in 2004 and Central Java Earthquake in 2005, and Padang Earthquake in 2009 brought about the severer damages. This Paragraph (2) describes the assistances provided by the Japanese Government for these earthquake disasters.

(1) Sumatera Offshore Earthquake and Its Associated Tsunami in 2004

In the Sumatera offshore earthquake that took place in December 2004, the dead and missing persons amounted to more than 200 thousand and houses destructed on a large scale were 81,942.

To cope with the disasters that were brought by the Sumatera offshore earthquake, the Japanese Government carried out the urgent development survey and formulated a master plan on restoration of Banda Aceh City after dispatching urgently the Japan disaster relief team to the disaster area. Based on the master plan, the Japanese Government implemented 12 aid projects for recovery and reconstruction of communities suffering from the disaster, urgent restoration of infrastructure (sewage treatment plant, etc.), and rehabilitation of road, drainage channel, community buildings, etc. with the non-project grant aids. Thus, the Japanese assistances for the Sumatera Offshore Earthquake were conducted in the comprehensive fields of the post-disaster recovery and reconstruction, which covered from the assistances for recovery of communities, social and public services and capacity building for local administrative staff to the assistances for restoration of infrastructures.

Facilities Rehabilitated or Newly Constructed
by Non-project Grant Aid of Japanese Government

Although the community buildings are usually constructed to be utilized as the evacuation facility for the people who suffered from disaster like tsunami, JICA suggested to use it not only at the time of occurrence of the disaster, but also at the ordinary time as the base of communities' activities. Prior to the start of construction of the community buildings, the activities for raising up the level of the nearby people's livelihood took place in the middle of 2006. Concretely, the activities comprise cake-making, processing of dried fish, and traditional handicrafts that were instructed to the people by local facilitators on business operation under the guidance of Japanese consultants.

To expand the outcome on enhancement of livelihood in this region to the other areas of Aceh Province, the "Project on Self-Sustainable Community Empowerment Network Formulation in Nanggroe Aceh Darussalam (NAD) Province" was carried out as the technical cooperation project under JICA for 2 years from 2007. The technical cooperation project dealt with capacity building for the local administrative staff and provision of consultation radio program through dialogue of local people by utilizing radio station diffused by the non-project grant aid in addition to enhancement of livelihood. The radio broadcasting is supported by JICA for more than three (3) years.

(2) Central Java Earthquake

In May 2006, a large-scale earthquake with an epicenter at southern area of the special province of Yogyakarta in Central Java Province took place, causing loss of lives of more than 5,700 persons, wounded persons of more than 360,000, and damages to houses consisting of collapse of 156,664 houses and partial damage to 202,032 houses.

JICA carried out the need assessment on aids for recovery and reconstruction and the "Project for the Reconstruction for the Area Affected by the Earthquake in Yogyakarta and Central Java" to unify the whole projects related to the post-disaster reconstruction projects from the overall viewpoint, eight (8) projects for assisting reconstruction of communities, restoration of the local industry, design for reconstruction of primary and middle schools and health center, and short-term dispatch of Japan Overseas Cooperation Volunteers (JOCV) in the field of health preservation. In addition, the reconstruction of schools and health centers were performed as the grant aid scheme.

With regard to reconstruction of houses that is the most important issue, the Indonesia Government decided to hand over a subsidy for reconstruction of houses directly to families suffering from the damages in the early stage after occurrence of the disaster. The amount of the subsidy was determined to be constant at about 150 thousand Japanese Yen and finally it was paid to 240,000 to 250,000 families. Taking into consideration the subside to be handed over by the Indonesian Government to people suffering from damage to their houses, it was judged that the assistance on the architectural administration is appropriate as the assistance provided by the Japanese Government in the field of reconstruction of houses. As a subproject of architectural administrative assistance for promotion of house reconstruction and improvement of architectural strength, JICA started the assistance to Kabupaten Bantul which suffered from the severest damage out of the disaster affected Kabupatens.

(3) Padang Earthquake

In September 2008, a large-scale earthquake of M 7.6 with an epicenter at offshore of Padang City took place, resulting in loss of lives of about 1,200 persons, injury of about 3,500 persons and collapse of about 130,000 houses and buildings. JICA dispatched to the site the investigation team in October 2008 in order to carry out the need assessment. As a result of the field investigation, the team pointed out the requirement of preventive measures for secondary disaster due to land slide, rehabilitation of irrigation facilities, reconstruction of schools and mental care as the important issues. On the basis of the results of the needs assessment, JICA executed the assistance in preparation of hazard maps to prevent occurrence of secondary disaster by the adviser on water resources policy, short-term dispatch of JOCV for mental care of children, assistance in enhancement of seismic resistibility of houses and construction of safe schools.

9.3. Summary

The overall flow of the Japanese assistances to Indonesia in the disaster management sector is shown in the following figure:

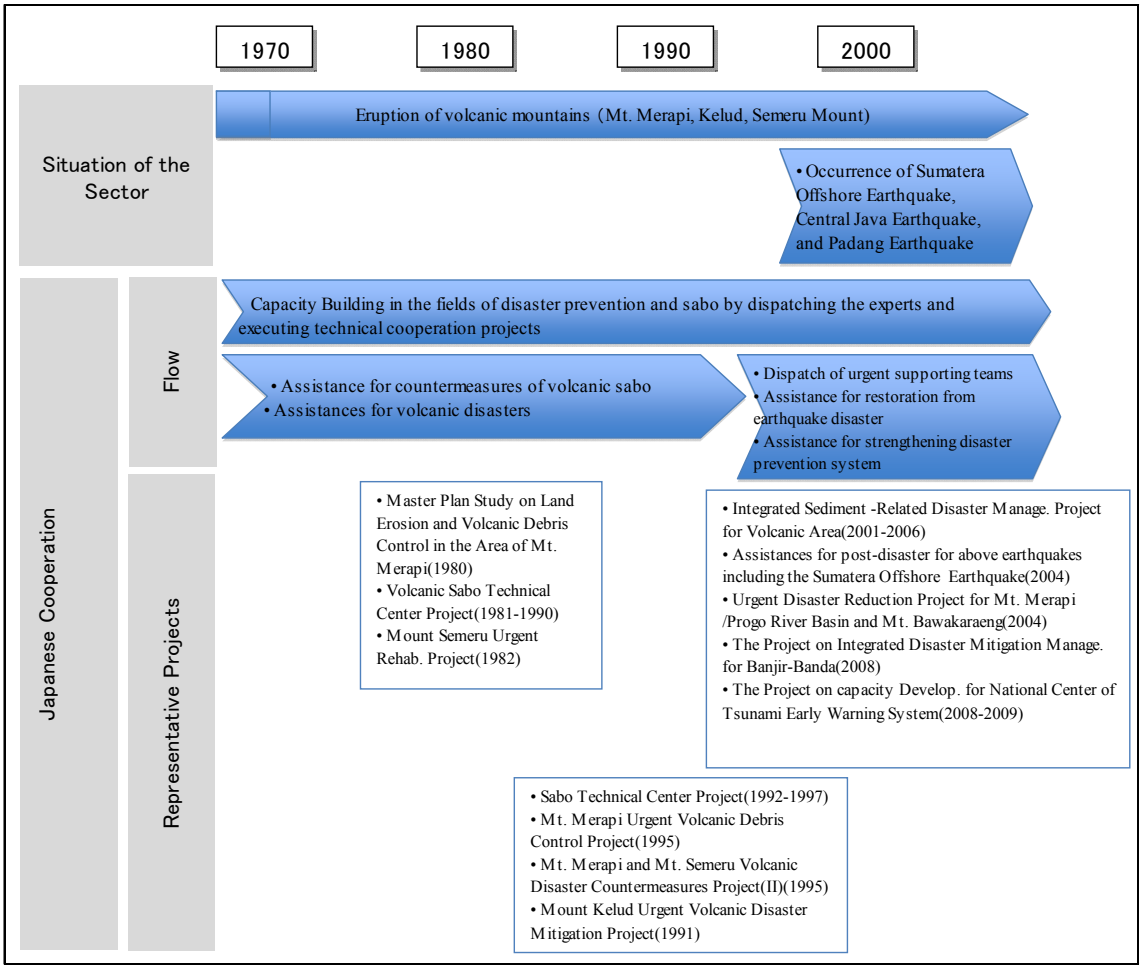


Figure 9.1 Overall Flow of Japanese Assistances to Indonesia in the Sector of Disaster Management

As shown in the figure above, the Japanese assistance to Indonesia on disaster prevention has been performed since dispatch of long-term expert to the country in early 1970s. On the other hand, the Japanese assistance on recovery from disaster has been provided in immediate response to occurrence of disasters as seen in the assistances for the 2004 Sumatera offshore earthquake and tsunami.

Since in Indonesia large-scale disasters due to volcanic products have so frequently taken place so far, the countermeasures for sediment disasters have become the important issues in preservation of the land and economic development in the country. To cope with the issues, the Japanese Government assisted the Indonesian Government mainly through the two (2) schemes, namely development study and implementation of loan-aid projects for volcanic sabo like Mountain Merapi and the technical cooperation projects like “Volcanic Sabo Technical Center Project” and “Sabo Technical Center Project”.

By the aforesaid Japanese Government's assistances in the field, sabo facilities have been constructed in Indonesia applying many sabo technologies and transfer of technology to the Indonesian engineers has also been practiced. The technical assistances of the Japanese Government contributed to the joint possession of data and information related to sabo technologies of both countries, enhancement of technical capability of Indonesian engineers, and diffusion of idea on pyroclastic flow management and integrated sediment related disaster management among the Indonesian engineers.

In the latter part of 2000s, the Japanese Government carried out three (3) technical cooperation projects, namely i) the "Project on Integrated Disaster Mitigation Management for Banjir-Bandang" aiming at mitigation of sediment and flood disaster due to collapse of natural dam and enhancement of capability to deal with the Banjir-Bandang disaster, ii) the "Project on Building capacity and Enforcement Capacity Development for Seismic Resilience" in connection with the 2004 Sumatera Offshore Earthquake, and iii) the "Project on capacity Development for National Center of Tsunami Early Warning System" in connection with the 2006 Central Java Earthquake. Besides, the "Study on Natural Disaster Management in Indonesia" was carried out under JICA to prepare a comprehensive disaster prevention plan at national and regional levels, as well as capacity building for organizations and communities concerned with disaster prevention.

Since Indonesia is volcanic country, earthquake takes place so frequently therein. In recent years, severe damage brought about due to Sumatera Offshore earthquake and Tsunami in May 2006, Central Java Earthquake in May 2005, and Padang Earthquake in September 2009. The Japanese Government provided the prompt assistances for these earthquake disasters, which include restoration of communities, recovery and reconstruction of infrastructures like roads, and schools and health center, etc.

On the basis of the recommendation of the joint committee of Japan and Indonesia on disaster that was established in 2005, besides, the new national disaster agency (BNPB) was set up in 2008 through the efforts of the Indonesian Government. Thus, the Japanese Government also contributed to strengthening of the disaster related organization in the country.

The following table summarizes the assistances of the Japanese Government in the disaster management sector.

Table 9-1 Summary of Japanese Government's assistances on Disaster Management

Description	Assistances by the Japanese Government
I. Disaster Protection	
(1) Sabo	● Diffusion of Japanese sabo technology and bringing-up of Indonesian sabo engineers by implementing the technical cooperation projects like "Volcanic Sabo Technical Center Project" and "Sabo Technical Center Project" and consecutive dispatch of JICA experts ● Mitigation of sediment-related disaster by means of carrying out development study and loan-aid project on volcanic sabo countermeasure
(2) Assistances in latter Part of 2000s	● Enhancement of capability to deal with the Banjir-Bandang disaster ● Improving architectural standards and building permit system, development of architectural MIS (Management Information System), and establishing regulation and adequate utilization of architectural permit ● Enhancement of capability of staffs of tsunami warning center of BMKG for setting up tsunami early warning system ● Preparation of the comprehensive disaster prevention plan at national and regional levels, as well as capacity building for organizations and communities concerned with disaster prevention
II. Post-Disaster Restoration	
(1) Sumatera offshore Earthquake and Tsunami	● Formulation of master plan for restoration of Banda Aceh City（including design of community building） ● Restoration of communities, economic recovery and promotion, rehabilitation of infrastructures, bringing-up of regional staff, regional public service (education)
(2) Central Java Earthquake	● In relation to housing; Architectural administrative assistances ● Other than housing; Restoration of communities, recovery and reconstruction of regional industry, design for reconstruction of primary/middle schools and health center
(3) Padang Earthquake	● Preparation of hazard maps, mental care of children (short-term dispatch of JOCV), enhancement of seismic resistibility of houses, construction of safer schools

Table 9-2 Issues and Cooperation in Disaster Management

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Disaster Management	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto − UN set up 1990s as a decade of international disaster protection	− Democratization − Decentralization
	Sector-wide Issues	− Volcanic sabo facilities in Indonesia, the volcanic country, are insufficient. − The number of the sabo engineers is insufficient.				− Occurrence of Sumatera Offshore Earthquake (2004), Central Java Earthquake (2006), and Padang Earthquake (2010) − Establishment of disaster prevention law (2007) , and improvement of disaster prevention system by establishing BNPB (2008) − Eruption of Mt. Merapi
		− Eruption of Mt. Merapi (1961, 1969) − Eruption of Mt. Kelud (1966)	− Eruption of Mt. Merapi (1971, 1973-1976) − Eruption of Mt. Semeru (1976, 1981)	− Eruption of Mt. Merapi (1986)	− Eruption of Mt. Merapi (1994) − Eruption of Mt. Semeru (1992, 1994) − Eruption of Mt. Kelud (1990) − Flores Earthquake	
	Priority Development Issues shown in 5-year plan	− Enhancement of sabo technology including volcanic sabo − Early restoration of areas suffering from disaster				
					− Development and preservation of the country's lands	
						− Restoration from earthquake disaster − Assistance for strengthening disaster prevention system
	Japanese Approach for Development Issues		− Human resources development in the fields of disaster prevention and sabo by means of dispatching experts to the country and carrying out the technical cooperation projects			
			− Assistance for volcanic sabo countermeasures − Assistance for volcanic disasters − Countermeasures for tsunami			− Dispatching Japan disaster relief team − Assistance for restoration from earthquake disaster − Assistance for strengthening disaster prevention system

	Priority Programs/ Projects for Japanese Cooperation		− Preparation of bases for human resources development and technical cooperation on volcanic sabo − Formulation of volcanic sabo plan and implementation of urgent measures	− Implementation of volcanic sabo projects (Mt. Galunggung, Mt. Kelud, Mt. Merapi, and Mt. Semeru) − Volcanic sabo (human resources development, improvement of facilities) − Development of tsunami forecasting model (in 1990s)	− Formulation of plans on restoration from earthquake disaster and urgent assistance (improvement of infrastructures, schools, etc.) − Technical cooperation on disaster prevention such as early tsunami warning system, strengthening of houses − Technical cooperation on regional comprehensive volcanic disaster prevention, countermeasures of flood and sediment disasters

Abbreviations
1. BNPB: National Disaster Protection Agency
2. develop.: development, manage.: management, rehab.: rehabilitation, Presid.: President

10. Urban Environment, Water Supply and Sewerage

10.1. Outline of the Sector

The projects of this sector consist of 4 sub-sectors, namely, (a) water supply, (b) drainage and sewerage, (c) urban environment and waste management, and (d) housing, urban and regional planning.

The numbers of projects are (a) water supply: 36, (b) drainage and sewerage: 16, (c) urban environment and waste management: 16, and (d) housing, urban and regional planning: 12.

In water supply sub-sector, major projects are ODA loan projects (19 projects) based on the results of development studies until 1990s. However, grant aid projects became major projects in the 2000s instead of ODA loan projects. In the drainage and sewerage sub-sector, major cooperation was development studies to prepare development plans; many of those plans were funded by ODA loan or grant aid. In urban environment and waste management sub-sector, projects were mainly implemented in the 1990s. In this sub-sector, many technical cooperation projects have been carried out, compared with other sub-sectors. In housing, urban and regional planning sub-sector many master plans and feasibility studies were undertaken in the 1980s.

Table 10-1 The Number of Projects in the Urban Environment, Water Supply and Sewerage Sector

		～1970s	1980s	1990s	2000s	Total
Water Supply	Development Study	2	3	2	0	7
	ODA loan	6	9	4	0	19
	Grant Aid	0	1	0	6	7
	Technical Cooperation	0	0	1	2	3
	Total	8	13	7	8	36
Drainage and Sewerage	Development Study	0	3	3	0	6
	ODA loan	0	0	3	2	5
	Grant Aid	0	0	4	1	5
	Technical Cooperation	0	0	0	0	0
	Total	0	3	10	3	16
Urban Environment and Waste Management	Development Study	0	1	3	0	4
	ODA loan	0	0	5	0	5
	Grant Aid	0	0	2	0	2
	Technical Cooperation	0	0	2	3	5
	Total	0	1	12	3	16
Housing, Urban and Regional Planning	Development Study	0	5	1	0	6
	ODA loan	0	0	2	0	2
	Grant Aid	0	1	1	0	2
	Technical Cooperation	0	1	0	1	2
	Total	0	7	4	1	12
Grand Total		8	24	33	15	80

10.2. Transition of the Sector Development over Periods

(1) The 1960s

Water Supply in Jakarta Metropolitan Area

The First Five-Year Development Plan (1969-1974) showed that main issue in this sector was to increase supply of drinking water.

A water supply system in Jakarta had been constructed with assistance of Holland and France since 1922. According to the First Five-Year Development Plan, JICA assisted the preparation of the first Master Plan on Water Supply System in Jakarta in 1963, of which target year was 1971. This Master Plan was the only case of Japan's cooperation in this sector during this period.

(2) The 1970s and the early 1980s

Water supply and drainage in Jakarta, and water supply in other cities

The Second Five-Year Development Plan (1974-1978) also described that main issue in this sector was also to increase supply of drinking water. Therefore, Japan's cooperation in 1970s focused on water supply in Jakarta.

In the 1980s, the Third Five-Year Development Plan (1979-1984) described that main issues are the control of expansion of large-scale cities as well as growth of middle- and small-scale cities. Drainage system and waste management were also recognized as new issues in the Plan. According to the Plan, Japan's cooperation expanded to other sub-sector than water supply such as the improvement of urban living conditions including those in middle and small cities.

Besides water supply in Jakarta, water supply projects were implemented in middle and small cities in Sulawesi and in surrounding area of Surabaya.

Also, Urban Development Plan on Surabaya Metropolitan Area was formulated in 1983 with Japan's cooperation. In addition, flood control project in Jakarta was implemented to secure the safety of the living environment.

As mentioned above, Jakarta was a main area of Japan's cooperation in this period. However, it was expanded other cities like Surabaya from the 1980s. Areas of cooperation were expanded from only water supply to drainage system for flood control in those cities in the 1980s.

(3) The late 1980s and the 1990s

Urban Environment Improvement: Sewerage and Waste Management, and Residential Environment Improvement in Rural Area

The Fourth and Fifth Five-Year Development Plans (1984-1988, 1989-1993) described that the issues were (a) water supply in rural area, (b) training of water supply engineer,

(c) sewerage, drainage, and solid waste management, and (d) environmental problems such as degradation of river water quality.

According to this plan, Japan's cooperation started urban sanitation such as sewerage and waste management, and urban environment like environmental monitoring. Also, it started supporting the improvement of residential environment in small cities and rural areas.

In the sub-sector of water supply, water supply project in Jakarta was implemented continuously. However, it has not conducted since the privatization in 1998. In non-metropolitan areas, water supply system was constructed in Ujung Pandang city (present Makassar city) in the late 1980s.

Environment Management Act was enacted in 1982 to deal with environmental problems. The Fifth Five-Year Development Plan (1989-1993) showed a plan of establishment of Environment Management Center. According to this plan, Environment Management Center was established by Japanese grant aid in 1992 in the suburb of Jakarta. In this center, technical cooperation, Environment Management Center Project, was conducted. This project implemented capacity development for environmental monitoring, study and analysis. Also, Environment Monitoring Project was conducted by ODA loan from 1994 to 2001 in order to establish environmental monitoring system in local area. The project installed monitoring equipment for the 39 local laboratories.

As the mentioned above, in the late 1980s and the 1990s, adjustment period and growth period until the currency crisis, Japan's cooperation are summarized as follows, (a) water supply in Jakarta in the 1970s, and water supply in Makassar city and local small city in Sulawesi island, (b) urban sanitation improvement such as sewerage system and waste management in large city like Jakarta and Denpasar, (c) improvement of comprehensive living conditions in urban and rural areas, and (d) improvement of urban environment such as environmental monitoring capacity development.

(4) The 2000s: Institutional Reform Period

Focus on the non-metropolitan areas and environment

Under the decentralization, the Seventh and Eighth Five-Year Development Plans (2000-2004, 2004-2009) showed the following main issues. These were (a) infrastructure at residential area such as water supply, drainage, sewerage, waste management, and local roads in urban and rural areas , and (b) environmental conservation and management.

According to the Development Plan, Japan's cooperation shifted to (a) construction and management of water supply in local small cities and rural areas, (b) improvement of management and services of PDAM, and (c) capacity development of local government on environment management.

Local water supply projects were implemented by grant aid in Sulawesi Island, and East and West Nusa Tenggara provinces. Japan's cooperation shifted to support water supply

in small cities and rural area. The cause of this shift were (a) privatization of Jakarta water supply in 1998, (b) addressing important issues after economic crisis such as enhancing people's welfare and narrowing regional disparity, and (c) policy shift to decentralization.

In urban sanitation and environment sub-sectors, drainage system improvement in Jakarta (grant aid) and sewerage system improvement in Denpasar (ODA loan) were implemented. Also, because responsibility on environmental monitoring was shifted from Ministry of Environment to local government, it became necessary to develop the organization of local government for environmental management. Therefore, technical cooperation projects, Local Environment Management System Development Project (2002-2006), and Capacity Development Project for Local Government on Environmental Management (2008-2011) were implemented. These projects developed capacities of environmental monitoring and environmental management planning. They also improved organizational capacities of environmental management.

In urban and rural planning sub-sector, Spatial Plan Act enacted in 1992 was amended in 2007 with assistance of Japanese experts. The structure of spatial plan consists of national level, provincial level, district and municipal level. If necessary, metropolitan level can be included. On district and municipal level, both general plan and detail plan are to be formulated. Based on this amended Spatial Plan Act, National Spatial Plan was formulated with Japan's cooperation in 2008. Also, Comprehensive Development Study in Mamminasata Metropolitan Area in South Sulawesi Province was undertaken as a development study. Based of the results of the study, JICA, currently, extend technical cooperation project which assists appropriate enforcement and operation of the spatial planning regulations including the execution of spatial plan.

Table 10-2 Situation and Assistance of Urban Environment, Water Supply and Sewerage Sector

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Urban Environment, Water Supply and Sewerage	Period Background	− East and west cold war − Green revolution − From President. Sukarno to President. Suharto − Oil dependent economic development	− The 1st oil crisis (1973) − Crisis of international balance of payments (1982)	− Plaza agreement (1985) − Finish of east and west cold war − Restructure from the oil dependent economy	− Asia currency crisis (1997) − Resignation of President Suharto	− Democratization − Decentralization
	Sector-wide Issues	− Construction of water treatment plant in Jakarta by French assistance	− Expectation of serious lack of drinking water, and contamination of water source − The ratio of water supply population in Jakarta:25%, 1.2millon people(1970)	− Segmentation of PDAM − Privatization of Jakarta water supply (1998) − Spatial Planning Act (1992) − Urban environment problems − The ratio of water supply population in Jakarta:53%, 4.6millon people(1997)		− Strengthening role and authority of local government on Spatial Plan − Formulation of PDAM Health Program 2007 by PU − The ratio of water supply population in Jakarta:60% (2010)
	Priority Development Issues shown in 5-year plan	− Increase of drinking water supply, especially, construction of water supply system in urban area	− Construction of water supply system in middle and small cities − Control of expansion of large cities and investment to middle and small cities − Drainage system for food control in urban area − Improvement of waste management system	− Construction of water supply in major cities and rural area − Training of water supply engineer − Construction of drainage system for flood control in urban area − Construction of Sewerage system to cope with environmental problems − Improvement of waste management system − Solution for environmental problems		− Construction of infrastructure at residential area in urban and rural area by local government − Environmental conservation and management
	Japanese Approach for Development Issues	− Water Supply in Jakarta	− Water supply system in Jakarta and middle and small cities − Flood control in Jakarta	− Assistance for improvement of water supply services − Assistance for improvement of urban environment such as sewerage system or waste management − Assistance for improvement of rural living environment − Assistance for improvement of urban environment and environmental pollution		− Assistance for local water supply services Assistance for improvement of urban environment Focus on improvement of environmental management capacity
	Priority Programs/ Projects for Japanese Cooperation	− Master plan on water supply in Jakarta	− Water supply in Jakarta − Water supply in local middle and small cities − Flood control in Jakarta	− Water Supply in Jakarta − Water Supply in local cities − Training at Water and Sanitation Training Center − Construction of facilities for urban environment such as sewerage system or waste management − Improvement of living condition in urban and rural area − Training staffs, and establishment of strongholds on urban environment management such as water and air contamination		− Water supply in local small cities and rural area − Improvement of management of PDAM in local area − Sewerage and drainage system − Capacity development for local government on environmental management

10.3. Case Study: Projects for Urban Environment Improvement in Jakarta

Projects for water supply, drainage system, and waste management in Jakarta metropolitan area are highlighted as representing Japan's cooperation.

(1) Water Supply in Jakarta Metropolitan Area

The construction of Jakarta water supply was started in 1922. Holland Government constructed the water supply system by using welling water in Bogor where is 60km south from Jakarta. Under the assistance by French Government, Pejonbongan Treatment Plant (I) was constructed in 1957, and Pejonbongan Treatment Plant (II) was constructed in 1970. Japanese Government started to assist the expansion of Jakarta water supply system in 1962 and the preparation of the first Master Plan in 1963, in which the target year was 1971. And also, Master Plan targeting 2000 was formulated in 1972. Based on these master plans, Pulogadung Treatment Plant was constructed from 1971 to 1986. And upgrading of the existing Pejempongan Treatment Plant (II), and installation of about 550 km of distribution pipelines were implemented with Japanese ODA loan.

When the master plan formulated in 1972, it was estimated that population of Jakarta in 2000 would be 8.3 million. However, the population reached 6.5 million in 1980 by rapid population growth, so that the Indonesian Government estimated that the population would reach 12.0 million in 2005. Therefore, plans such as transportation and housing had to be revised according to the new estimation. Also regarding water supply, the new master plan was formulated in 1985 under Japan's cooperation. This was the plan to supply water for 60% of the population in Jakarta, based on the latest population estimation for 2005.

Based on the master plan in 1985, Buaran Water Treatment Plant (I) was constructed by ODA loan from 1986 to 1993 to solve lack of water, low water pressure, and low water quality. Buaran Water Treatment Plant (II) was constructed by ODA loan from 1987 to 1995 to supply water to eastern part of Jakarta.

The training of water supply was urgent issue for Indonesian Government in 1980s. Therefore, Ministry of Public Works (PU) planned to establish a central training center as well as several local training centers in order to train water supply and sanitation engineers. Indonesian Government requested to Japanese Government for its assistance. Responding to the request, Japanese Government assisted to construct Water and Sanitation Training Center in suburb of Jakarta by grant aid in 1989. To assist the activities of this center, technical cooperation was implemented from 1990 to 1996. As the result of this assistance, 3948 engineers of water supply were trained during 19 years from 1991 to 2009.

Buildings for lecture and Administration

Lecture of training course

In 1998, the water supply services provision of Jakarta was privatized. The water services concessions were given to Suez Lyonnaise (French company) for the western part and Thames Water (English company) for the eastern part of Jakarta. PAM JAYA which was a public water utility owned by the municipal government became a supervisory body for the water services by private sector. Japan's cooperation for water supply in Jakarta had been continued during 35 years since 1963. However, it has not been implemented since the privatization in 1998.

In 1970, the population supplied water in Jakarta was 1.2 million (25% of the population in the water supply area). However, it became 4.6 million (53% of the population in the water supply area) in 1997. During these 27 years, 3.4 million people were newly supplied water. France and Holland assisted Jakarta water supply before 1970, and only Japan assisted it after 1970. Therefore, it can be said that water supply for additional 3.4 million people was attained by efforts of Indonesian Government and Japan's cooperation. In 2010, ratio of water supply population is still 60%. The ratio has not been progressed after privatization.

(2) Flood Control and Drainage System in Jakarta Metropolitan Area

In Jakarta city, floods which exceed drainage capacity of rivers occur chronically, because of topographic condition, increase of flood runoff by urbanization, intensive rainfall, and subsidence of ground level by intake of groundwater.

In order to establish the urban drainage system covering a large part of Jakarta city, the Master Plan for Drainage and Flood Control of Jakarta was formulated by Indonesian Government in 1973, being composed of extension of the existing Western Banjir Canal (WBC, 1920s) the construction of Eastern Banjir Canal (EBC) and improvement of urban drainage system of the area surrounded by the aforementioned two flood diversion canals.

Based on the master plan, various flood control and drainage projects have been implemented with the assistance of the Japanese Government, of which the main projects having been implemented under Japanese ODA loans are:

- Western Jakarta Flood Control System Project I, II (1983, 1984)
- East Jakarta Flood Control Project (1987)
- Ancol Drainage Improvement Project (1991)

In these projects, reconstruction or newly construction of drainage canal, and construction of pump station were implemented to establish flood control system for a 25 years probable flood. As a result of this Japan's cooperation, frequency of flood decreased, and the damage by floods was alleviated. Also, as same as the case of water supply projects, a lot of local engineers were trained through the works with Japanese engineers for the construction.

Reconstructed Western Banjir Canal

Pump Station on Western Banjir Canal

(3) Improvement of Solid Waste Management System in Jakarta Metropolitan Area

In 1985, the population of Jakarta was increasing rapidly because of a flow of population into Jakarta from the surrounding area. It was difficult situation to keep clean and beautiful urban environment by the existing solid waste management system under the rapid population growth. The necessity of improvement of the system was described in the Fourth Five-Year Development Plan (1984-1988), Jabotabek Development Plan, and Jakarta City Master Plan. According to the Plan, the master plan and feasibility study for Solid Waste Management System Improvement Project in the city of Jakarta was formulated in 1987 with the Japan's cooperation.

Based on the master plan and feasibility study, Jakarta Solid Waste Management System Improvement Project was conducted by ODA loan from 1993 to 2000. The improvement of final disposal site in Bekasi city, construction of transfer stations, procurement of 193 collection vehicles, 140 containers and 7 road cleaning vehicles, and construction of vehicles repair shops were implemented. The garbage volume of Jakarta City prior to project implementation was 23,708 ㎥/day, 80% of which was collected by the Jakarta Cleaning Department. Although the volume of garbage increased to 25,600 ㎥/day after project implementation, the rate of collection has also improved to 85.7%. The project contributed to improve clean and beautiful urban environment through improvement on the rate of garbage collection.

At Water and Sanitation Training Center mentioned, trainings on solid waste management and domestic sewage were conducted for 2471 trainees during 19 years from 1991 to 2009. Japan's cooperation contributed to the training through construction of the center and the technical cooperation project for management of the center.

10.4. Summary

Indonesian Government attained water supply to 3.4 million people in Jakarta with Japan's cooperation during 35 years. Also, Indonesian Government improved urban and rural living environment through projects of water supply, sewerage and drainage system, institutional and organizational improvement of environmental monitoring, and suitable solid waste management under Japan's cooperation based on five-years development plans.

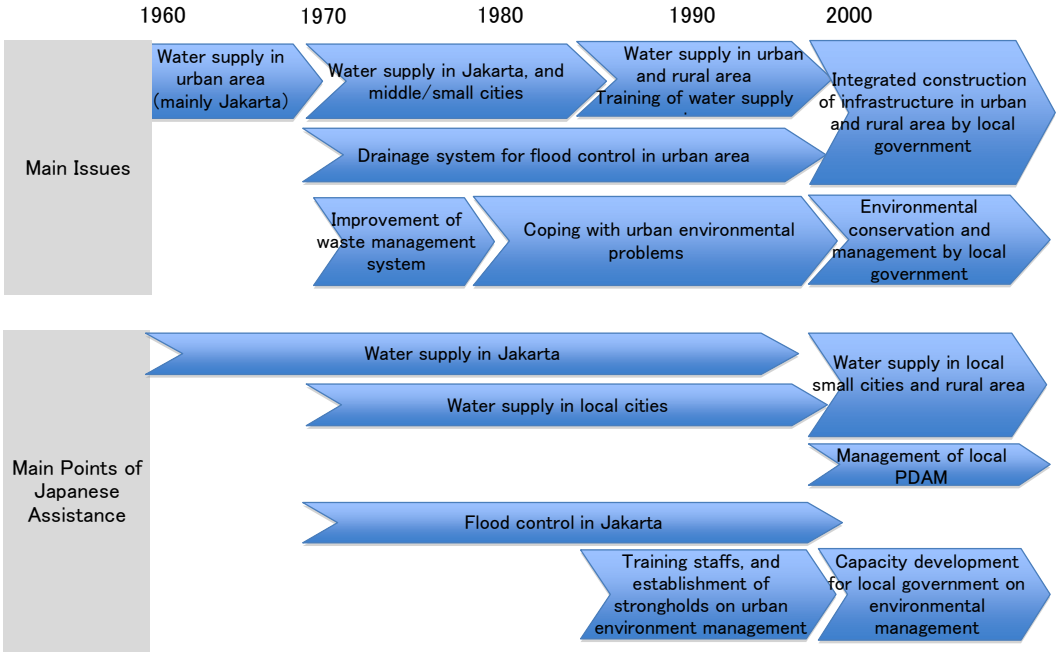


Figure10-1 Transition of Assistance for Urban Environment, Water Supply and Sewerage

Japan's cooperation has been well correspondent to policies in fie-years development plans. It means that Japan's cooperation has conducted according to request from Indonesian Government.

In the 1960s (Nation Building Period), Japanese Government assisted to formulate the master plan on water supply in Jakarta, according to the policies in the First and Second Five-Year Development Plan,

In the 1970s and the early 1980s (Development Period), under the policies of the Third Five-Year Development Plan, which Indonesian Government assisted middle- and small-scale cities, Japan's cooperation expanded to water supply in local cities, not only water supply and drainage system in Jakarta.

In the late 1980s and the 1990s (Adjustment Period and Growth Period until the Currency Crisis), the Fourth and Fifth Five-Year Development Plans showed the policies which Indonesian Government coped with water supply in urban and rural area, sewerage and drainage system, waste management in urban area, and urban environment. In line with the policies, Japanese Government started assistance for urban environment sub-sector such as urban sanitation including sewerage and waste management, and environmental monitoring. From a view point of implementation area,

the areas expanded to local small cities or rural areas, even with large cities. Also, Japanese Government assisted construction of training center and the technical management to develop the capacities of water supply and sanitation engineers.

In the 2000s (Institutional Reform Period), under the national policy of decentralization, the Seventh and Eighth Five-Year Development Plans showed construction of infrastructure at residential areas in urban and rural areas, and conservation and management of environment by local government. In line with these policies, Japan's cooperation focused on local area and environment and assisted capacity building for construction and management of water supply in local small cities and rural area as well as capacity building for environmental management of local government.

Representative projects, "Jakarta Urban Environment Improvement Projects" which are water supply, drainage system, and waste management in Jakarta metropolitan area are focused for case study. The contributions by these projects are shown below.

Japan's cooperation for water supply in Jakarta which continued during 35 years realized water supply for 3.4 million people newly. It contributed sanitation and health of people in Jakarta, embarkation of foreign companies, and capacity building of water supply engineers who were staffs of Direktorat Jenderal Cipta Karya (DG of Human Settlements) in Ministry of Public Works, staffs of PDAM, local consultants, and staffs of local construction companies.

In Jakarta city, floods which exceed drainage capacity of rivers occur chronically, because of topographic condition etc. Therefore Indonesian Government formulated the Master Plan for Drainage and Flood Control of Jakarta in 1973. Based on the master plan, Japanese Government assisted reconstruction or newly construction of drainage canal, and construction of pump station to establish flood control system for a 25 year probable flood. As a result of the Japan's cooperation, frequency of flood decreased, and the damage by floods was alleviated. Also, as same as case of water supply projects, a lot of local engineers were trained through work with Japanese engineers for the construction.

In 1985, the population of Jakarta was increasing rapidly because of a flow of population into Jakarta from the surrounding area. It was difficult situation to keep clean and beautiful urban environment by the existing solid waste management system. Therefore, the master plan for Solid Waste Management System Improvement Project in the City of Jakarta was formulated in 1987 with the Japan's cooperation. Based on the plan, Jakarta Solid Waste Management System Improvement Project was conducted by ODA loan from 1993 to 2000. The rate of garbage collection was improved after project implementation, though garbage volume increased. It can be said that the project contributed to improve clean and beautiful urban environment.

As mentioned above, Jakarta urban environment projects which improved water supply, drainage system, and waste management in Jakarta metropolitan area contributed to the improvement of sanitation and health, safety, and the convenience of the people, and capacity development of engineers.

11. Forest and Natural Environment Conservation

11.1 Outline of the Sector

Forest and natural environment conservation sector consist of (1) Forestry and forest conservation, (2) Natural environment conservation (except Forestry and forest conservation) and (3) Forest related climate change issue and others. Number of projects in each scheme and smaller classification is shown in Table11-1. The characteristics of this sector are that major projects are technical assistance, and corresponding construction.

Table 11-1 No. of project in each scheme

Schemes	Forest & Forestry	Natural Environment	Climate Change
Development Studies	9	2	0
Technical Assistance	20	7	2
Loans	2	1	0
Grant Aids	6(14)	1	0

Period background and sector issue is shown in Chart 11-1.

(1) Outline of forestry and forest conservation

Characteristics of Indonesian forest resources

Land area of Indonesia is 181,150,000ha, including forest area (127,720,000ha, 70.5%), it is the third size of forest area of the world[22]. This "forest area" comes from land use area, so it doesn't mean real forested area[23]. The most feasible data is based on FAO's "Forestland" (including Forested, Shrub, Not forested area) data[24], 119,130,000ha (65.8%, 2006). In Suharto administration, forest resources were seen as an important source of foreign currency revenue next to crude oil and gas. Indonesia also has the largest area of mangrove forest, its area is one forth of whole world's mangrove forest (18,000,000ha). All of the "forested area" of Indonesia is state-owned, it is defined "Land use area" by National Land Agency (BPN).

The factors of deforestation and forest degradation

Indonesia is consisted by large territory with many islands spread 5,100km wide east to west, also with some native forests and other nature without any exploitation. The "forest area" and National Parks are state-owned, people cannot live in that area. However, it is too difficult to observe or maintain their borders because there is no precise map with precise border. In 1967, the Forestry Act had established, logging concession were actively sold to state companies and private companies, and they made many job opportunities. On the other hand, they also made infrastructure, such as road, so that it has made it easier to access to native forest. In 1980s, immigration policy called "Transmigrasi"

[22] JICA Indonesia Office, "Summary on Environment Sector 2008" (in Japanese)
[23] Takeo Toyota 2007, Report on Model Kampung Konservasi Activity (in Japanese)
[24] FAO 2010, Forest Resource Assessment 2010 Country Data

Table11-2 Issues and Cooperation in Forest and Natural Environment Conservation

Decades		1960s	1970s and the Early 1980s	Late 1980s	1990s up to Asian Currency Crisis	After Asian Currency Crisis
Forest and Natural Environment Conservation	Period Background	− Cold War − High economic growth in Japan − Development system had established in Indonesia − Dependent on crude oil production − Suharto administration started (1965)	− First Oil Shock (1973) − High economic growth in Japan − Balance of payment crisis − - Foreign capital act (1974)	− Adjustment from crude oil dependent economy − Broad outline of Japanese ODA (1992)	− United Nations Conference on Environment and Development (1992) − UNFCCC, CBD (1992) − Kyoto Protocol (1997) − - Currency Crisis in Southeast Asia (1997)	− Decentralization − Economic cooperation agreement between Japan and Indonesia (2007)
	Sector-wide Issues	− Import liberalization on woods in Japan − Japan went into forest resource development in Kalimantan (1963) − - Establishment of Forestry Act (1967)	− Forest resource development dependent on foreign investment − Forest degradation in South-east Asia − - Restriction of export timbers in South-east Asian countries	− Acceleration of deforestation and forest degradation − Development of Social Forestry − - Popularization the concept of Biodiversity	− Increasing awareness of environment − Developing the idea of watershed management − Large forest fire (1997-1998) − - Participatory development	− - Participatory resources management
	Priority Development Issues shown in 5-year plan	−	− Improve productivity due to low infrastructure services − Necessity of forest resources survey − Increasing transmigration − - Shifting exportation from round wood to sawn timber	− Implementation of agroforestry, eco-tourism (IV) − - Exportation of Round wood banned (1985)	− Natural resources management and environment conservation (IV) − - same issues after IV	− Natural resources management and environment conservation − Decreasing immigrants − - Establishing Directorate Forest Fire Control (2000)
	Japanese Approach for Development Issues	− None	− Forest resource study − Technical assistance for effective forestry and silviculture − - Wood processing and distribution	− Reforestation by Industrial plantation − - Forest tree breeding study for Industrial plantation	− Reforestation for degraded forest − Biodiversity conservation − National park management − Mangrove conservation − - Forest fire prevention	− Shifting to Program Cooperation − Utilizing satellite image to forest management − - Community-based resources management
	Priority Programs/ Projects for Japanese Cooperation	− None	− Forest development planning study − Study of tropical rain forest in Kalimantan − - Forest land development in Sumatra	− Forest tree breeding project − South Sumatra Industrial Plantation Project − - Mass-reforestation technology development	− Biodiversity Conservation Project − Forest fire prevention project − Tondano watershed management − - Reforestation in national park after forest fire	− Climate Change Program Loan − National Park Management Project − - Community-based forest fire prevention, mangrove management

had increased immigration population from concentrated Java or Bali to sparse Kalimantan or Papua (Irian Jaya). Immigrants didn't have knowledge of indigenous agriculture, so that some of them have been to inside of national parks or preserved forest.
Forest fires sometimes occur in dry season, especially often in peatland because it occurs naturally. Recently, frequency and scale of forest fire is increasing, it is believed that the reason is climate change and increasing people who are going deeply into the large forest. Origins of forest fire are expected that initial firing for agriculture or pastoral grassland. After some times of forest fire, land productivity has decreased and got into poor shrub or alang-alang *(Imperata cylindrical)* grassland. Poor shrub and alang-alang grassland is difficult to be restored to natural forest vegetation spontaneously. It happens same in national parks.

(2) Outline of Natural Environment Conservation

Indonesia has very various vegetation and habitats, such as rainforest in many islands, coral reefs, mangrove forests in Sumatra and Bali, savannah vegetation in Nusa Tunggala, highland vegetation in Papua. And there is Wallace Line between Bali and Lombok, Sulawesi and Borneo, on the east side, Fauna and Flora belongs to Southeast Asia. On the west side, it belongs to Oceania. There are many endemic species because of various geographic conditions in Indonesia, about 20% of wild animals and vegetations in 1.3% of total land area. While Indonesia has world's leading biodiversity, it is decreasing year by year because of economic development activities, increasing living people, commercial and illegal logging, or forest fire.[26]。

＜Biodiversity and Hotspots[4]＞
In Rio de Janeiro Summit, 1992, there was much discussion about importance of biodiversity. Signing to the Convention on Biological Diversity had started at Rio Summit, 193 countries are member of convention and 168 countries have signed.
The definition of "Biodiversity Hotspots" is the important area for conservation which has more than 1,500 endemic species, and it has lost more than 70% of original habitat. Conservation International(CI) had selected 34 "Biological Hotspots" such as Madagascar, Philippines, mid of Chile and Japan, CI is doing conservation activity intensively in these areas. These 34 areas covers 2.3% only in total land area, but there are about 50% of vascular plants and 42% of overland vertebrate animals.

As mentioned above, Indonesia has large territory and various environments. Actual achievements of Japanese natural environment conservation projects were very various, Biodiversity conservation including conservation of endangered species and their habitats, management of species information and environment information, conservation of coastal environment, coral reefs, mangrove forest and so on. Target areas of conservation are also very various, from high population density to primary forest, and culture of people who live in is also various.

[25] EIC-Net "Biodiversity Hotspot" http://www.eic.or.jp (in Japanese)
[26] JICA, 2007, Final Report, Preliminary Study on Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology (in Japanese)

Biodiversity Conservation Project

(West Jawa, Directorate General of Natural Conservation and Forest Preservation, Ministry of Forestry, and Research Center for Biology (RCB), Indonesian Institute of Science (LIPI))

Year	Project Name
1993-1998	Biodiversity Conservation Project Phase 1
1995-1996	Biodiversity Conservation Project (grant)
1998-2003	Biodiversity Conservation Project Phase 2
2004-2009	Gunung Halimun-Salak National Park Management Project
2009-2012	Strategy for Strengthening Biodiversity Conservation through Appropriate National Park Management and Human Resources Development
2009-2011	Natural Resource Management Project in the Gunung Halimun-Sarak National Park, Lebak District Banten Province (Grass-roots)
2004-2006	Project for Support of Facilities for Biodiversity Collection Development (Grant)
2007-2009	Improvement of Collection Management and Biodiversity Research Capacity of the Research Center for Biology

<Background>

Japan and U. S. agreed "Common Agenda", bilateral cooperation for natural resources management and global problems in 1993. In this "Common Agenda", they agreed that it would assign U.S. to establish "Indonesia Biodiversity Fund", and they would help NGO's activities. Japan would be assigned to provide grant construction of RCB and technical assistance for Biodiversity Conservation.

<Main Activities of Biodiversity Conservation Project>

It is very important to have facility for preservation of original type sample because Indonesia has rich in biodiversity. In BCP, Japan provided facility of sample collection in RCB animal section and Gunung Halimun-Salak National Park management office and related research stations. Moreover, there were some specialists from Japan who had assisted as technical assistance for 10 years. After the BCP for 10 years, it divided into 2 parts, maintaining original sample collection and taxonomy and national park management.

<Main activities of national park management projects>

The component of Gunung Halimun-Salak national park management in BCP was continued and rolled out community-based natural resource management activity. The project increased its experience, it had tried to spread management measures throughout all national parks, that made another project, "Strategy for Strengthening Biodiversity Conservation through Appropriate National Park Management and Human Resources Development". Also the experience of community-based management, it continues to Grass-roots project (managed by NGOs)

Chikaniki Research Station in Gunung Halimun-Salak National Park

<Achievements of national park management projects>

In Gunung Halimun-Salak project, they made maps with precise border of national park, so that park officer could understand where he is with GPS and record in patrols. Before making precise maps, officer could not patrol and they didn't have opportunity to meet and talk with people who lived in around the national park. Through this project, officer could see conflicts between people and national park with their own eyes, they could share the awareness.

Microorganism and Botany Section, Research Center for Biology, LIPI

<Main activities of sample collection and taxonomy>

After Japan provided second half of facility of sample collection (botany and microorganism), the new technical assistance for taxonomy, genetic science, and maintenance of collection became in operation. This project goal was decided by bottom-up approach, discussed by researchers.

<Achievements of sample collection and taxonomy>

From BCP, many researchers had been to Japan to take doctor's degree, they have come back to RCB and continued research. There are many joint researches with Japanese researchers, and their many expensive facilities are used to do. And also RCB researchers can get cost for expensive running cost for experiments by proposals they submitted to Indonesian government.

(3) Outline of Forest Related Climate Change Issues and the Other Environmental Issues

Indonesia is the worst green house gas emission country in ASEAN countries, and 12th worst in the world[27] because of stabilization of economic situation. Moreover, Indonesia has large land with tropical rain forests, it is concerned that increasing CO_2 emission by deforestation or forest degradation, Indonesia is one of the main countries of REDD (Reduce Emission from Deforestation and forest degradation in Developing countries) which had started its activity since COP13 of UN Framework Convention on Climate Change (2007).

As the other natural environmental conservation projects, "Eco-labeling Capacity Development Project" (technical assistance) was implemented. Eco-labeling means that the products which use eco-friendly material and production process can be labeled with Eco-label. Ministry of Environment established standard of Eco-labeling in this project.

11.2 Development and Cooperation in Historical Perspective

In this section, Japanese development and cooperation of forestry and natural environmental conservation sector to Indonesia are summarized in a historical perspective.

(1) 1960s (Nation Building period): Forest resource development from Jawa to Kalimantan[28,29]

Japan and Perhutani (Indonesian Government Corporation of forestry) established Kalimantan Forest Development Cooperation Company in 1963, Japan started co-development on forestry. When the government changed from Sukarno to Soeharto, development strategy had drastically changed from mainly with state-owned companies

[27] EDMC, Economic Statistics Directory, 2010 (in Japanese)

[28] Takashi Tachibana, 2000, "Forest Exploitations and Timber Export Restrictions in Southeast Asian Countries" Regional Policy Study (Regional Policy Study Society in Takasaki Keizai University) Vol. 3, No. 1 pp. 49-71 (in Japanese)

[29] Yoshitomo Ando, 1983, "The Development of Development Policy in Southeast Asia and Japanese Economic Assistance, Society of Forestry Economics, Report on Conference, Fall 1983 (in Japanese)

to aggressive inviting of foreign capitals. The Forestry Act was established in 1967 and forest cutting concession (HPH) was started to issue in 1969. The Investment Act was established in 1968, and the Foreign Investment Act was established in 1969, foreign investors could have tax benefits by this act. As a result, round timber production of Indonesia was increased drastically around 1970 (Chart 11-1[30]).

There was no economic cooperation project in this decade.

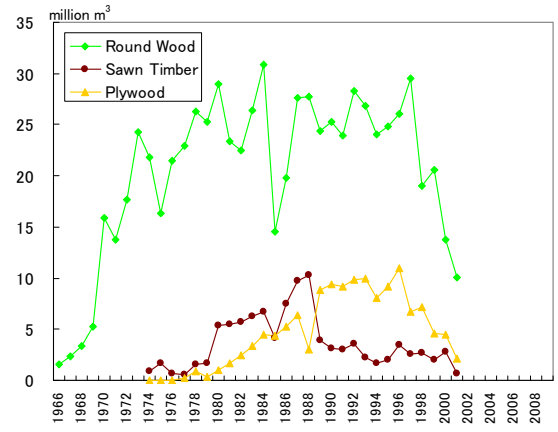


Figure 11-1 Production amount of round wood, sawn timber and plywood (m^3)

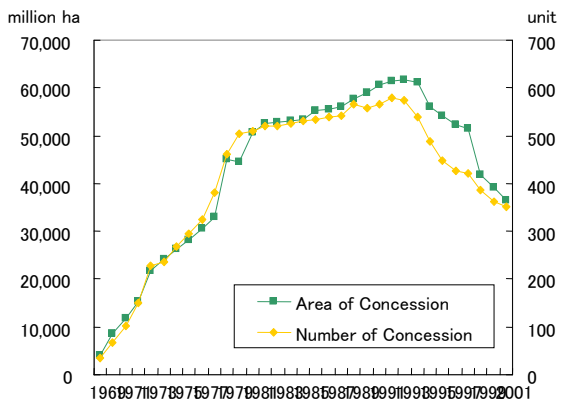


Figure 11-2 Number of issued concession and area of issued concession

(2) 1970s and the Early 1980s (Development period): Shifting from forest development to forest resource management and wood industry development

Major area of forestry sector in 1970s, that was "Verifying Study" (6 projects), which aspire marketing study for increasing private sector investment. As official economic assistance, one of the goal or graduation of one sector is that private sector becomes main actor and less government involvement. Actually, forestry sector needs much longer time to grow than other sector because 8 to 30 years is necessary to yield. Japanese serial projects oriented to "Industrial Plantation Forest" in South Sumatra had started 1975, there were 3 projects with 3 scheme from "Verifying Study", technical assistance and feasibility study to private sector operation. One of the counterparts in Ministry of Forestry became a technical advisor of industrial plantation companies, these long serial technical assistance was effective.

In Suharto's foreign investment leading development policy, wood processing was expected second to crude oil and natural gas for foreign currency revenue. The concession for logging had issued aggressively until 1980, but deforestation and forest degradation became apparent in many islands in Indonesia in 1980s and exportation of round wood was banned in 1985. Indonesian economy had grown up lead by foreign investment, though Indonesian capital formation was disturbed by foreign investment. The immaturity of Indonesian capital formation caused to increase income gap,

[30] Iin Ichwandi et al., 2004, "Studies on the Characteristics of the Indonesian Timber Markets and Governmental Policies to Promote a High Export of Forest Resources, Bulletin of Faculty of Agriculture, University of Ryukyus No. 51, pp. 33-41

unemployment rate, and Indonesian people got frustrated. The riot against Japan in 1974 was caused by these frustration and resource nationalism, it was one of factor of shift from round wood exportation to building domestic wood processing industry. The number of issued concession had been decreasing after 1993 (Chart 11-2).

Most of Japanese development projects are forestry development projects such as "Verifying Study" in 1970s. In the late 1970s, technical assistant projects of forestry sector started, including feasibility study. In early 1980s, technical assistant projects to study rainforest ecology and sustainable natural forestry and development study projects for wood processing infrastructure had started because deforestation and forest degradation became obvious.

(3) Late 1980s (Adjustment): Sustainable management of rainforest and promotion of industrial plantation forest

After the sharp fall of crude oil price, Indonesian economy got worse with decreasing economic growth rate and currency (rupiah) value. Indonesia loosened regulation in 1986 to1989 to get rid of dependent economy on foreign currency by oil and gas exportation. In forestry sector, it was very expected that domestic wood processing industry would grow up to export goods instead of crude oil. Therefore, it was thought that sustainable forest development was important to Indonesian economy.

The tendency of Japanese assistance had not changed since early 1980s, there were "Industrial Plantation Forest Development Plan in South Sumatra Area" and "Reforestation of Tropical Rain Forest".

(4) 1990s to currency crisis (Growth period): Increasing awareness of global environment issue; Biodiversity and Climate change

<u><From forestry development to forest management></u>

In REPELITA V (1989-1994), the orientation of plan had changed from "Sustainable forestry resource management as source of foreign currency" in REPELITA IV to "Sustainable forest resource management and capacity development of organization". The characteristics of 1990s were; approaches like watershed management, which is not only forestry aspect but also social aspects. Project title tended to include "integrated watershed management" or "integrated forest management", these approaches is integrated natural resources management (water, land, agriculture, forest, etc.) and human activities (property rights, culture, etc.).

<Participatory Development>
In 1989, Development Assistance Committee (DAC) of OECD proposed "Participatory Development" as one of the approach. Its characteristics are; the beneficiaries have to participate the process of decision, and beneficiaries can have fairly their benefits. JICA also has introduced participatory development approach such as social forestry into their projects since 1980s

<Mangrove forest management>

In 1990s, Ministry of Forestry tried to plant mangrove trees in abandoned aquaculture pond in Bali. JICA had Verifying Study project of mangrove forest management, but Indonesian government had requested for capacity development of mangrove management staff. Therefore, JICA started technical assistance and grant assistance "Mangrove Information Center Project" from 2001 to 2006, JICA constructed the Mangrove Information Center (MIC) in Bali and Ministry of Forestry established the organization of mangrove management. MIC had changed name to Mangrove Management Center I (MMCI) according to the organization developed to core of promoting and training center of mangrove management. After MIC project, "Sub-sectoral Program on Mangrove Project" was implemented from 2007 to 2010, according to decentralization. MMC staffs are making national strategy of mangrove management with support of JICA and other donors.

<Destroying process and environment conservation function of mangrove forest>

Mangrove forests were cut for making aquaculture pond, and mangrove logs were exported as charcoal. Many charcoals made by mangrove trees exported to Japan. The water quality of aquaculture ponds would be worse which is difficult to continue, people would move another mangrove forest to make another pond. It is almost impossible that mangrove trees regenerate in abandoned ponds with salty water because it is not suitable to live. There were many abandoned ponds which was originally mangrove forest.

Mangrove forest has very important role in coastal ecology, not only keeping biodiversity and ecosystems but also preventing from tidal wave or tsunami. Therefore, mangrove forest conservation is attracted attention as adaptation measure.

<Forest fire>

Forest fire is naturally happens every 4 or 5 years, the frequency of forest fire in Indonesia is increasing, two of the most possible factors are human-induced fire and drying by climate change. Moreover, there is haze problem, for example, health hazard, hazard to aviation and becoming international problem in Borneo island. JICA implemented "Forest Fire Prevention Project" for 13 years (1996-2009). The continuous project according to decentralization is implementing in communities around peatland, where is easy to occur forest fire.

(5) Currency crisis to 2000s: Decentralization and finding measure for climate change

There was no influence for forestry and natural conservation sector by currency crisis in 1997. The most drastic change in Indonesian policy was decentralization. The local administration act was established in 1999 and 2001 in force. By this act, the right to issue concession of national forest was transferred from central government to province or city except protected forest and national parks. Protected forest and national parks are still under management by central government but province or city government has issued concessions in these areas and also in the area which had been issued concession. Having the right to issue concession means not only increasing income also have responsibility of forest management. But it is not capable to manage in that moment,

many illegal activities (clear cutting, not planting after cut and so on) were widespread[31]. Therefore, deforestation and forest degradation is accelerating after the decentralization.

Indonesia played a important role as presidency holder in COP13 of UN Framework Convention on Climate Change (UNFCCC) in Bali, 2007. In COP13, they agreed the discussion of the mechanism of Reduce Reduction from Deforestation and forest degradation in Developing countries (REDD) for next commitment period, Annex I countries work on verifying activities and capacity development in developing countries and operation of "Adaptation Fund".

In same year 2007, Japan has political conversation with Indonesia about climate change, Japan decided to provide "Climate Change Program Loan". This program loan is including economic stimulus and budget support according to "National Action Plan Addressing Climate Change". This loan had provided twice, in 2008 and 2009.

It was used satellite images to establish early detection system since "Forest Fire Prevention Project" (1996-2009), with rapid growing the technology around satellite image and information, JICA implemented new project "Forest Resources Management through Satellite Image Project" in 2008. The mission of this project is utilization satellite images to monitoring forest resources, illegal logging and planning reforestation using Japanese satellite ALOS which can make 3D images with microwave photos.

Forest Fire Prevention Project
(Jambi Province and West Kalimantan Province, Forest Fire Control Section, Ministry of Forestry)

Year	Projects
1996-2001	Forest Fire Prevention Project Phase1
2000	Forest Fire Prevention Facility (Grant)
2001-2006	Forest Fire Prevention Project Phase2
2006-2009	Forest Fire Prevention Project by Initiative of People in Buffer Zone
2010-2015	Program of Community Development of Fire Control in Peatland Area

<Background>
It is difficult to find and early extinguish because Indonesian territory is very large with many islands. The damage of forest fire is not only decreasing forest resources but also hazard to aviation, health hazard in neighboring countries.

<Main Activities and its Achievements>
In Phase 1, it developed early detection system with satellite images, early extinguish training program and community extinguish activity in National Parks. Large forest fire broke out in 1997, early detection system was functioned. Based on this achievement, the forest fire section of Ministry of Forestry was graded up to directorate of forest fire control with 4 sections, and moved from Bogor to Jakarta in 2000. In Phase 2, it was targeted to 4 National Parks and the extinguish command system "Manggala Agni" was established. The idea of this system was conceived by Director General of Forest Protection and Nature Conservation when he went to Japan by JICA study tour. And hotspot (fire point) information by satellite images is everyday updated in website of Ministry of Forestry. It is also available in news paper in dry season. The educational program for junior high school is also introduced by this project in regular curriculum in one prefecture.

[31] Araya, Present situation of deforestation, illegal logging and illegal exportation. http://www.zenmoku.jp/sinrin/japanese.pdf

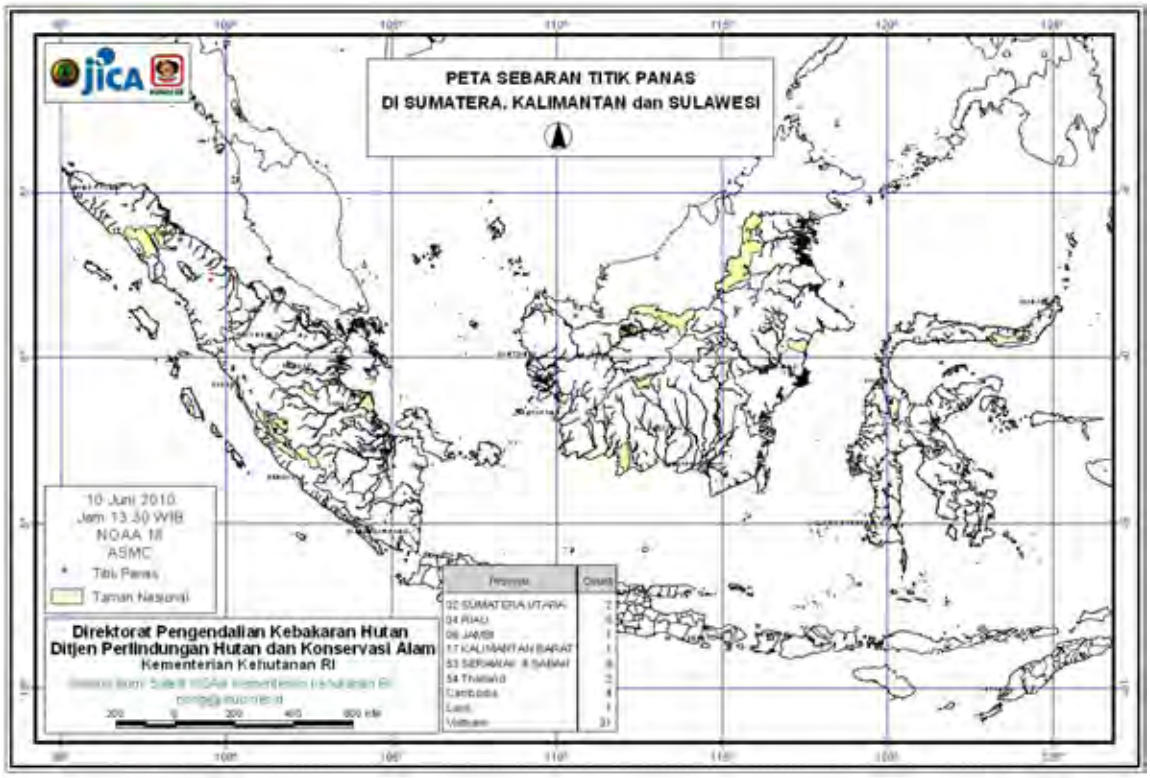


Figure11-3 Hotspot Map everyday updated in website (2010/6/10)[32]

[32] http://www.dephut.go.id/index.php?hid=2280&q=hotspot

11.3. Summary

Indonesia has very various and rich natural environment resources. There are many difficult problems about natural resources and environment struggling with large territory, lack of basic data, various culture and economic development. It seems some characteristics of Japanese assistance as:

Japanese assistance has implemented consistently with systematic approach, not hurried, scoping on important area with long-term and Asian point of view. The projects were feasible with capacity development for longer period.

Japanese specialists had started from scratch, basic research in Indonesia, totally different climate and ecosystem from Japanese ones. Japanese specialists had stayed and worked for a long time in local research station, also with technicians, this attitude and atmosphere affects Indonesian counterparts. Moreover, many counterparts had been to Japan to complete doctoral degree, they had come back to Indonesian research center. They try to submit proposals for research cost, and they get some. These things take time to have obvious effects, but it is very independent for their development.

Japanese assistant for Indonesia has an important role as link between central government and local site which has problem after the decentralization. It is important to keep thinking what is the distinct Japanese assistance by absorbing a lesson from the experience for a long time.

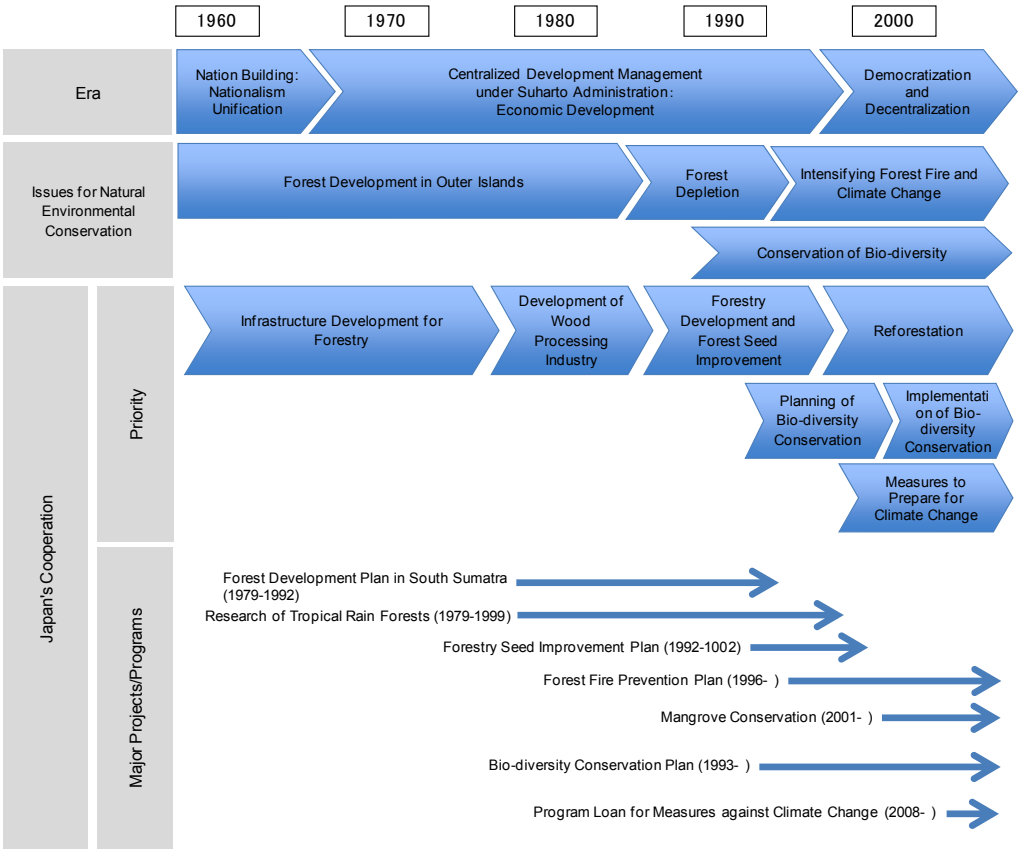


Figure 11-4 Changes in Cooperation in Forest and Natural Environment Conservation