

Meta Analysis of Ex-Post Evaluation Reports
by Country and Sector

Country Review Report

India

Final Report

July 2003

This country review report (India) was compiled and analyzed by Global Group 21 Japan at the request of Development Assistance Operations Evaluation Office, Project Development Department of the Japan Bank for International Cooperation (JBIC).

Foreword

This analyses ex-post evaluation reports (henceforth, evaluation report) for 30 projects to India supported by the Japan Bank for International Cooperation (JBIC).

In order to improve the quality of aid projects in developing countries, JBIC has conducted ex-post evaluations of completed projects. An ex-post project evaluation is the assessment of how a project was implemented and administrated in comparison , with initial plans, and whether the expected results were realized after completion of the project. The ex-post evaluations are conducted with two goals in mind. The first is to compile the lessons learned from the project evaluations, and to use the lessons in the implementation of future projects. The second goal is to improve the transparency of aid projects, and to increase the accountability for people both in Japan and the borrowing countries through disclosure of evaluation results.

The goal of this review is to create an overview of the performance of completed projects in India using ex-post evaluation reports, to analyze the data to determine the cumulative effect of the Japanese ODA loan projects to India, and to derive possible lessons or recommendations for future ODA loan projects. In addition, by reviewing and studying the evaluation indices, it is hoped that reference material for future appraisals, administration and evaluations will be provided.

This report consists of four chapters. The first chapter is a synopsis of the social and economic trends in India. Chapter Two presents a summary of Japanese ODA loans to India. Chapter three analyzes the performance of 30 projects based on the evaluation reports. Chapter four presents the comprehensive results of the analysis, and offers lessons learned and recommendations for future projects in India.

In the analysis, remarks in ex-post evaluation reports were uniformly compiled and examined in reference to DAC Criteria, as laid out in the DAC Principles for Evaluation of Development Assistance (relevance, efficiency, effectiveness, impact, and sustainability), which were further divided into 23 more detailed sub-criteria. However, the past evaluation reports targeted for analysis were not subject to uniform ex-post evaluations, and there were some that were conducted prior to the introduction of DAC's five principal criteria. In particular, the level of detailed analysis contained in the ex-post evaluation results differed in the detailed evaluations (detailed analysis conducted by JBIC staff along with outside experts and desk evaluations (called desk evaluations for expediency, and are detailed

evaluations were conducted on a portion of the projects by JBIC staff within Japan). For this reason, the spectrum of evaluation remarks covered in early reports and those of the present day are different, and in such cases, notations such as "not clear in the (past) evaluation report (in regards to a certain evaluation criteria)" have been included.

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Attached Materials: Reviewed Projects

1. Economic and social trends in India¹

1.1 Politics, economy and society

(1) Politics

Following independence, the Indian National Congress Party which led the country to independence under the democratic system, continued to hold a majority in Congress for a long period of time, with the successive administrations of Prime Ministers Nehru, Shastri, Indira Gandhi, and other leaders of the Indian National Congress Party. However, after the assassination of Indira Gandhi in 1984, and the subsequent assassination of Prime Minister Rajiv Gandhi in 1991, the political situation of the 1990's changed dramatically. One of the factors for this change was the 1993 amendment of the Constitution, which strengthened the legal platform of regional governments and reinforced the process of participation at the regional level. For example, as a result of the revisions, one third of the local assemblies must be women, and the number of seats held by designated castes and minority groups must be in proportion to their percentage of the population. At the national level, this resulted in the consistent strengthening of the influence of minority parties representing regions or special interest groups. As a result, no political party since the beginning of the 1990's has been able to achieve a clear majority in Congress, and administrations have had to directly or indirectly rely on support from the minority parties.

As a result of the September 1999 elections the National Democratic Alliance (NDA), a coalition government of more than 20 parties was formed, headed by Vajipayee of the Bharatiya Janata Party (BJP). Under this, the ruling coalition parties hold a comfortable majority of the seats of the Lower House, while the political solidarity of opposition forces are weak, so a relatively stable political and bureaucratic administration has developed. Recently however, in the four state elections held in February 2002, the BJP and its coalition allies fell from power in three states, weakening the BJP's unifying power in the central government.

The BJP's power base and related organizations support the view of Hindu supremacy, and this has caused instances of hostilities between Hindus and Muslims, a factor that is likely to lead to domestic political instability if the situation continues. Also, destabilizing factors for diplomatic relations have begun to emerge, such as renewed tensions with Pakistan as a result of the terrorist attacks in Jammu and Kashmir, and the storming of the Indian Parliament House by extremists.

¹ The details presented in this section are from assorted JBIC materials, the World Bank's Country Assistance Strategy for India (June 2001), and The World Almanac 2003.

(2) Economy

Having experienced long-term economic stagnation resulting from the failure of the socialist model of planned economic policies, the turning point for India's economy occurred after the loss of an export market brought about by the dissolution of the Soviet Union and the foreign currency crisis caused by the Gulf War (in 1991). The administration of the time, under Prime Minister Rao, introduced full-fledged economic liberalization policies, including the introduction of foreign capital. As a result, India's economy achieved a GDP growth rate that exceeded 7% for three consecutive years in the mid-1990's. Following this, the GDP growth rate was 6.6% in fiscal 1998 and 6.1% in fiscal 1999 (interim figure). Within this economic development, India's IT industry began attracting worldwide attention from the 90's onward and has been contributing to overall economic development. By setting the export values of 1988 as a standard, by 2001, the export value of India's software had grown by approximately 80 times, showing exponential increases, and has come to represent more than a 10% share of total export value.

While continuing to strive for economic stability, the NDA administration is also contending with reconstructing public finances (taxation reform and cuts in public expenditures) to eliminate budget deficit which is still at high level. Also, with the objective of creating an internationally competitive economy, structural adjustments are continuing, including reforms in industrial policy, trade and foreign exchange policy and financial reforms.

However, in spite of these efforts, the GDP growth rate of India's economy has gradually decreased in recent years, to 6.1% in fiscal 1999 and further dropping to 4% in fiscal 2000 (preliminary figure announced in January 2002). Of late, India's economy has been beset by the following problems. While inflation controls have been successful, the expanding budget deficits arising from revenue shortfalls shows no sign of slowing. Other difficulties include a recession caused by the continuing slump in the mining and manufacturing sector, a slowdown in exports due to a global economic slump (note: exports to the US account for roughly one-fifth of India's total exports, while approximately a quarter is exports to the EU) and an expanding trade deficit, caused by the constant imbalance of imports over exports. However, unlike the foreign exchange crisis in 1991, the fact that capital influxes to India continue through both direct and indirect investment, and that foreign currency reserves continue to show a profit, are promising for the future.

(3) Society

In India, the largest problem that is starting to confront the government is “Unity within Diversity,” since the country and society is composed of various non-compatible structural elements such as different ethnic groups, religions, languages and social structures. The citizens are 72 % Indo-Aryan, 25 % Dravidian and the population also includes several minority groups concentrated in the northeastern mountainous states. India’s population is the second largest in the world, with more than 1 billion people, 35% of whom are living in poverty. Approximately 80% of the people are Hindu, 10% are Muslim, 5% are Sikhs and Christians, and there are also followers of many other religions, including Buddhism, Jainism and Zoroastrianism. In terms of languages, there are 24 different languages which are spoken by more than 1 million people each and 18 of which are the official languages of their regions. India’s moribund society is blamed on the outdated social structure, which comprises three systems; the self-sufficient village communities, extended families, and the caste system. However, the modernization of rural communities, urbanization, and reforms of the civil code are starting to erode the village community and extended family systems. In regard to the third, through efforts made by political leaders to date and the constitutional reforms in 1993, which guarantees rights to designated castes, the caste system is also undergoing social changes.

Against this type of societal backdrop, under the umbrella of the major tenet of poverty elimination, topical issues related to development are: promote agricultural and rural development, increase the prevalence and standards of education, eliminate gender disparities, improve health care, sanitation and living environments, and make an effort to deal with all environmental issues. As a reflection of the nation’s diversity, there is a broad array of issues, and the extent of each also varies by region or state.

Table 1-1 : Shift in key leading indicators

	1997 - 98	1998 - 99	1999 - 00	2000 - 01	2001 - 02
Nominal GDP (billion US\$)	419	423	429	457	484
Real GDP growth rate (%)	4.8	6.5	6.1	4.0	5.4
Per capita nominal GDP (US\$)	435	430	428	445	467
Domestic investment rate (%)	24.4	22.7	24.3	24.0	22.4
Domestic savings rate (%)	23.1	21.7	23.2	23.4	22.1
Current account balance (% of GDP)	-1.3	-1.0	-1.0	-1.2	-
Fiscal balance (% of GDP)	-4.9	-5.5	-5.4	-5.2	-
External debt (% of GDP)	23.1	23.3	22.0	22.3	20.9
Rate of increase in consumer price index (%)	7.2	12.7	3.4	7.0	6.5
Exchange rate (US\$)	36.3	41.2	45.0	45.7	47.7
Population (million)	980	-	-	-	1,046
Population growth rate (%)	1.4	-	-	-	-

Note: Figures for fiscal 2001 – 02 are estimates

Source: JBIC, World Bank

1.2 National development plan

Development plans became the central focus of the economic policies of India following independence. The first 5-year plan began during the 1951-52 fiscal year. It focused on readjusting and improving the social and economic infrastructure from a national economic perspective, and on promoting industrialization. After achieving the target economic growth rate, five-year plans have continued to be formulated and implemented consecutively since that time.

The Indian government is currently implementing the tenth 5-year plan (April 2002 – March 2007). The objective of this plan is to achieve “equitable and sustainable growth,” and particular emphasis is being placed on the following essential development tasks. ① Improve social services such as public health and medicine, education, etc. ② Improve work productivity ③ Advance the socioeconomic standing of scheduled castes and minority groups, and ④ Balance economic growth with environmental conservation. Also, based on a plan to double the per capita income over the next 10 years, the Vajpayee administration has established 8% as the goal for the average annual economic growth rate. This economic growth will facilitate such goals as decreasing the ratio of the poverty group by 5%, increasing afforestation by 25%, enabling all rural communities to have access to water, and cleaning up all major rivers that are polluted. Based on this 10th 5-year plan, the central government is drawing up development plans by sector.

2. Japanese ODA loan projects to India

2.1 Loan conditions for India

Table 2-1 shows the cumulative Japanese ODA loan projects to India by sector as of March 2003. The 156 projects (based on the number of loan contracts) combined account for 1,837.6 billion yen. Of this, 7 commodity loans make up 125.8 billion yen, and 149 project loans account for 1,711.9 billion n yen. The target sectors of project loans cover a broad range of areas, such as infrastructure, all industrial sectors, and social services. However, both the electric power and gas sector, and the mining and manufacturing sector account for a large share of the project loans, with only these two sectors accounting for 70% of all project loans. Within the electric power and gas sector, many of the loans are for power plants, accounting for 40.4% of project loan totals. In the mining and manufacturing sector, many of the loans are for large-scale projects centering on the fertilizer industry, and account for 18.7% of project loans. In other sectors, there are many projects are in the transportation sector, which accounts for 9.7% of loans, and while there aren't as many loans to other industries, the social services, agriculture and forestry, and telecommunications sectors make up 8.7%, 6.3% and 4.1% of the loan composition ratio, respectively.

Table 2-1: Cumulative Japanese ODA loans to India by sector (as of March 2003)²

Type of industry	Number of projects	Approved loan amount (billion yen)	Composition ratio (%)	Composition ratio within loans (%)
Electric power and gas	62	855.4	46.5	50.0
Power plants	49	691.9	37.7	40.4
Transmission lines and distribution systems	10	108.8	5.9	6.4
Gas	3	54.7	3.0	3.2
Transportation	19	165.7	9.0	9.7
Roads	5	37.6	2.0	2.2
Bridges	1	10.0	0.5	0.6
Railways	8	94.7	5.2	5.5
Ports	2	10.8	0.6	0.6
Marine transportation	3	12.7	0.7	0.7
Telecommunications	10	69.9	3.8	3.8
Irrigation and flood control	6	44.6	2.4	2.6
Agriculture, forestry and fisheries	12	107.8	5.9	6.3
Agriculture	3	22.2	1.2	1.3
Forestry	9	85.5	4.7	5.0

² Since figures are rounded off, they may not add up to total.

Mining and manufacturing	25	319.4	17.4	18.7
Mining	3	16.3	0.9	1.0
Manufacturing ³	22	303.0	16.5	17.7
Social services	15	149.1	8.1	8.7
Water supply, sewerage and sanitation	7	104.1	5.7	6.1
Public health and medicine	1	8.0	0.4	0.5
Tourism	3	20.3	1.1	1.2
Urban/rural community infrastructure	2	8.1	0.4	0.5
Strengthening of administrative management	1	1.5	0.1	0.1
Environmental conservation in multi-sector	1	7.1	0.4	0.4
Project loan total	149	1,711.9	93.2	100.0
Commodity loans, etc.	7	125.8	6.8	
Total	156	1,837.6	100.0	

2.2 Priority areas of economic assistance to India

According to the Foreign Ministry of Japan's "ODA Country Policy toward India," the priority areas of assistance to India are (1) upgrading of economic infrastructure, (2) alleviation of poverty, and (3) environmental conservation. In addition, importance is also placed on improving the capacity to absorb aid by strengthening implementation systems, simplifying governmental procedures, thereby making aid implementation more efficient, and in view of the many people living in poverty, redoubling efforts made in areas related basic human needs.

As noted in JBIC's Country Strategy Paper, which corresponds to the ODA Country Policy mentioned above, the priority areas of economic assistance identified are maintaining and upgrading the economic infrastructure, including electric power and transportation; regional development to aid the poor; and environmental improvements, especially in urban areas where the environmental or sanitary conditions have markedly deteriorated. As well, other positive efforts include intellectual assistance in formulating public policy, and support in the areas of human resources training and health care. Specific priority items to be implemented are as follows.

- (1) Aid to the poor (industrial development, including agricultural and rural development)
 - a) Support each state government's efforts to reform and eliminate bottlenecks, thereby facilitating economic growth

³ Development financing loans for projects to foster small-scale enterprises are included in Manufacturing.

- b) Promote industrial development, including agricultural and rural development, in order to assist the poor
 - Agricultural productivity improvement through irrigation
 - Employment opportunity creation by diversifying agriculture
 - Regional development by maintaining and upgrading tourism foundations
 - Measures to improve income through micro-finance
 - Rural infrastructure upgrades, such as roads, to improve access to markets and product distribution
 - Measures to improve incomes of the rural poor
 - Support for Education and health
- (2) Economic infrastructure upgrades, focusing on electric power
 - a) Upgrade the electric power sector (support focusing mainly on those states actively concentrating on reform of the electric power sector)
 - Power supply expansion
 - Electrical transmission network upgrades to create a stable, efficient power supply
 - b) Upgrade the transportation sector
 - Urban transportation sector support
 - Main highway expansion
 - Rural transportation system upgrades
 - c) Environmental protection focusing on securing quality water resources.
 - Afforestation sector support (a multi-sector approach that includes intellectual assistance in formulating public policy, and support for education, health and agricultural development)
 - Renewable energy support
 - Water and sewerage sector support and the related health and sanitation sectors
 - Support for projects to improve the water quality of the Ganges
 - Support for conservation of the social environment and development of rural industry through the preservation of historic artifacts and development of tourism resources

3. Performance Analysis

3.1 Outline of projects under review

The target of this review is the 30 Japanese ODA loan projects to India that have been subjected to an ex-post evaluation, up to and including fiscal 2002. Target project names, sector, sub-sector, and the date the loan approval (L/A) was signed, are presented in a table attached to this document.

The 30 projects are classified by sector as follows: 12 electric power and gas projects, 10 mining and manufacturing projects, 3 transportation projects, 2 projects each in the telecommunications and social services sectors, and 1 agriculture, forestry and fisheries project. Of projects in the electric power and gas sector, 11 were power plant projects and 1 was a gas project. In addition, in the mining and manufacturing sector, 9 were manufacturing projects, 8 of which were in the fertilizer-related industry (Table 3-1).

By year, loan agreements in the first half of the 1980's represent a little more than half of the total, or 16 projects. There were 6 projects each in the latter half of the 1980's and in the first half of the 1990's. There were 2 projects in the latter half of the 1970's (Table 3-2).

Table 3-1: Target project numbers by sector

Sector	Number of projects	Sector	Number of projects
Electric power and gas	12	Mining and manufacturing	10
Power plants	11	Mining	1
Gas	1	Manufacturing	9
Transportation	3	Social services	2
Railways	2	Tourism	1
Marine transportation	1	Urban/rural community infrastructure	1
Telecommunications	2	Total	30
Agriculture, forestry and fisheries	1		
Forestry	1		

Table 3-2: Number of target projects by date

Dates	Number of projects
1975-1979	2
1980-1984	16
1985-1989	6
1990-1994	6
Total	30

Note: Based on date of loan approval (the earliest in cases of multiple loan agreements).

3.2 Analysis of the five evaluation criteria

In this section, the performance of each project is analyzed based on the evaluation report. The framework for the analysis is made up of the five evaluation criteria, which are based on the Principles for Evaluation of Development Assistance adopted in 1991 by the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD). These are the relevance, implementation efficiency, effectiveness (degree of goal realization), impact and sustainability of the plan. In order to undertake a detailed analysis for this review, the above-mentioned five criteria were further subdivided into more focused items, termed “Evaluation Check Items,” (23 in total) as in Table 3-3. Following that, performance was analyzed by checking the information contained in the evaluation reports against the evaluation check items.

Table 3-3: The Five Evaluation Criteria and Evaluation Check Items

Project Relevance	Does the goal and the approach to the project match the priorities and policies of the target group, counterpart country and the donor?
<u>A1. Consistency with Development Policy and Priority Issues</u>	Do the project goals and overall goals of this project match the development policies (including the national policy and master plan) and priority issues of the country or region in question?
<u>A2. Relevance of Project Scope</u>	Was the project plan (scope and approach) at the time of appraisal judged appropriate to achieve the overall and project goals?
<u>A3. Relevance of Project Scope Alteration</u>	In cases where project scope was altered after the project was implemented, were the alterations relevant?
<u>A4. Relevance of Project Goals at the Time of Evaluation</u>	In cases where terms and conditions were altered after the planning stage, are the project goals still valid at the present?
Efficiency of Implementation	Was the input appropriate and achieved as planned in terms of quality, quantity and timing? Was the method used the most efficient in regard to output?
<u>B1. Completeness of Output</u>	Was the output (project results) completed as planned?
<u>B2. Implementation Schedule Efficiency</u>	Were there any problems in the project that caused the implementation schedule to exceed original plans?
<u>B3. Project Cost Efficiency</u>	Were there any problems in the project that caused the project costs to exceed original plans?
<u>B4. Project Implementation System</u>	Was the system appropriate for decision-making, monitoring and troubleshooting during the project?
Effectiveness	Achievement of Project Purpose. To what extent did the project output achieve its purpose?
<u>C1. Output Utilization</u>	Is the output (project results) being used adequately? (Determined primarily using the operation indicators. In cases where there is no planned value, sufficiency will be determined using absolute values.)
<u>C2. Project Goal Realization</u>	Was the direct effectiveness of the project sufficiently realized, and was the project goal sufficiently achieved? (Determined primarily using the effect indicators. When there is no planned value, sufficiency will be determined using absolute values)
<u>C3. Achievement of IRR</u>	Is the Internal Rate of Return sufficient when compared with initial project values?
<u>C4. Effect of Technical Assistance</u>	Were the training and technological instruction component effects sufficiently realized?
Impact	Was the intended overall goal of the project achieved? Direct, indirect and subordinate results in terms of technical, economical, socio-cultural, institutional and environmental aspects.
<u>D1. Contribution to Overall Goal Achievement</u>	To what level were the original overall goals of the plan achieved, and to what extent did the project contribute to their

realization.

D2. Impact on Policy and Institutional System

What impact did the project have upon development policy of the country in question and the institutional system of the sector in question? Was the impact positive or negative?

D3. Socio-Economic Impact

What kind of impact was there on the regional society and economy? Was the impact positive or negative?

D4. Impact on Technology

What contribution did the project make to technological innovation and improvement in the country in question?

D5. Impact on Natural Environment

What impact was there on the regional environment? Was the impact positive or negative?

D6. Resident Resettlement and Land Acquisition

What impact was there on regional society in terms of resident resettlement and land acquisition?

Sustainability

After completion of aid, to what extent will the agencies and organizations of the counterpart country be able to sustain the output and effects of the project?

E1. Output Condition Is the output (project results) being maintained and operated appropriately? Is facility in good condition?

E2. Operation and Maintenance System

Are the systems, human resources (quality and quantity), work procedures (manuals) technology, maintenance facilities and equipment, and stock and procurement of spare parts for operation and maintenance sufficient?

E3. Financial Resources for Operation and Maintenance

Are sufficient financial resources available for appropriate operation and maintenance? Are those resources expected to remain available in the future?

E4. Continuation of Needs

Is it expected that need for the project will continue in the future?

E5. External Factors

What external factors will have a major effect on project effects and sustainability (environment, politics, policy, institutional systems, market, other related projects, etc.)? Is it expected that positive factors can be maintained in the future?

3.2.1 Project Relevance

In this document, the words “plan” and “objective” refer respectively to the initial plan and the objectives of the initial plan (in principal, at the time of appraisal). However, in cases where plan alterations were approved during project implementation, they refer to the altered plan and objectives. These definitions will hold true throughout the remainder of this review, unless otherwise specified.

(1) Consistency with development policies and priority issues

The majority of the targeted 30 projects conform to governmental development polices or priority development issues. There were projects in which no mention was made of their correlation to overall development policies or priority issues, and thus they were not evaluated for consistency. However, within these projects, there are many where it is possible to infer a high degree of relevance to development policies, by determining the relevance of each project goal to the priority development issues of the 5-year plans. By including these projects, just over 80% of all projects can be judged to be conforming. The conformity of the remaining projects, or just under 20% of the total, was either not evaluated or there was not sufficient information to determine consistency.

(2) Relevancy of Project Scope

It was possible in most cases to evaluate the relevance of the scale and approach of the project plan by inferring the overall goals from the development policies and priority issues of the time. This was achieved using remarks in the ex-post evaluation report, and then, depending on the project, considering the relevance of the project plan to these overall goals. In a little less that 80% of the projects, the initial plans were determined appropriately to ensure realization of overall goals and project goals. Ten percent of the projects were evaluated as generally relevant.

Although not many, there were a few projects where problems were seen regarding the relevance of the project plans. In a case of a small hydroelectric plant project targeted for an ODA loan, the fundamental supply deficiency was not resolved because it only covered 0.6% of the relevant state’s entire power supply. It was established that there should have been a consideration for the possibility of revitalizing the potential power generation capacity of the existing electric power

facility, whose capacity utilization rate did not exceed 51%, through its rehabilitation⁴.

(3) Relevance of project scope alteration

Of the total 30 projects, 40% underwent some form of plan alteration, but most of these changes were relevant. The main reasons for alterations were as follows. ① The geographical and technological conditions of the site, or the needs of the beneficiaries became concrete at the detailed planning stage, or ② Changes in policies or socio-economic conditions, or natural disasters that were unforeseen at the time of planning necessitated corresponding plan alterations. Quintessential examples of ② are “Telecommunications Project (VI) (VII) (VIII) (IX) (X)” and “Mysore Paper Mills Modernization Project.” In the former, the plan was altered to enable procurement of domestic Indian products. As a result, ① a portion of the microwave system and the optical fiber system, and ② the telephone control system became ineligible for a loan. The evaluation report questions the appropriateness of the implementing agency’s handling and decision-making⁵. In the latter example, there were delays in obtaining approval by the state government for the project, and there were changes in the government price and trade policies. As a result, the implementing agency utilized separate monies to implement the paper mill refurbishment and ash emissions curtailments project independently prior to the execution of the loan. Thus, the goals of having more diversified and improved paper products, improving the raw material consumption rate and recycling lime ash were deleted from the scope.

(4) Project goals at the time of evaluation

Close to 90% of all 30 projects were judged to have relevant project goals at the time of evaluation. However, problems were indicated in the following 2 projects. In the first, “Chandrapur Thermal Power Station Expansion Project,” during 1997 - 98 the Indian government decided to eliminate oil subsidies and ease regulations related to petroleum products. Nonetheless, despite the fact that the domestic sales price of petroleum soared and the cost of power generation jumped as a result, for political reasons the Assam state government was unable to adequately increase electric power fees. Thus, the Assam State Electric Board

⁴ “Tamil Nadu State Micro Hydro Power Stations Construction Project”

⁵ Questions raised include the relevance of switching over to domestic products at that point, given the long amount of time required for to deal with Japan Bank for International Cooperation (JBIC) to deal with this , and in view of the inability to achieve large improvements in the call completion rate due to the high failure rate of domestic products.

(ASEB) was forced to temporarily stop the operation of the power plant in this project due to profitability concerns. This is an instance where the policies of the central government and the state government are not congruent. The other project, “Mysore Paper Mills Modernization Project,” was designed to modernize a paper plant operating in an environment of high customs duties and governmental price controls that were established to protect the domestic manufacturing industry. However, just after the yen loan was provided, the market environment shifted towards a more competitive model, and price controls were eliminated and customs duties fell drastically due to deregulation of trade. Thus, it was indicated, from a macroeconomic standpoint, government intervention (i.e., support through ODA loans) in order to achieve the profitability of one paper mill was not prudent.

3.2.2 Efficiency of Implementation

(1) Completeness of output

Excluding 2 projects whose output did not lend itself to evaluation in terms of degree of completion (“Small Scale Industries Development Program” and “Housing Program for Low and Medium Income Households,” both development finance loans), , the output of all other projects was complete at the time of evaluation. For the 2 development finance loans, if one considers their output to be the execution of the entire amount of the development finance loan as part of the sub-loans that were targeted by the plan, then it can be said the outputs of these projects were also completed at the time of evaluation

(2) Implementation schedule efficiency

Of the 30 projects, approximately 30% were completed with no delays or with a delay in the implementation period of one year or less. Roughly another 30% of the projects experienced delays of one to three years. Delays of over three years occurred in 40% of the projects (12 projects). Within this group, substantial delays of five years or more occurred in 9 projects (30% of the total), and the longest delay of just under nine years was experienced in Calcutta Metro Railways (Phase II) Construction Project.

Two-thirds of the projects that experienced delays of more than three years, or 8 projects, were power plant projects, 2 were manufacturing projects⁶ and one project each in the railways and tourism sector⁷ make up the remainder. The reasons for delays in these 12 projects that experienced delays of over three years are as follows (the total number of projects listed exceeds twelve as some projects experienced delays for multiple reasons).

- Delays at the procurement stage 5 projects
- Construction difficulties due to unexpected natural conditions, etc. 5 projects
- Natural disasters 5 projects
- Funding deficits due to worsening financial conditions and difficulty in forecasting future profitability 4 projects
- Lack of abilities of the construction companies 4 projects
- Delay in project approval 3 projects

⁶ “Ammonium Sulphate and Caprolactam Plant Project,” “Mysore Paper Mills Modernization Project”

⁷ “Calcutta Metro Railways (Phase II) Construction Project,” “Tourism Development Project”

- Alterations in scope 3 projects
- Problems in site acquisition and resident relocation 3 projects

(3) Project cost efficiency

The project costs (total project costs denominated in foreign currency) of two-thirds of all projects were kept within the planned amounts or had overruns of 10% or less, while fewer than 10% of the projects had overruns of between 10% to 50%. Of the 7 projects, or just over 20%, that overran the total project costs by 10%, 6 of these were concentrated in the power plants sector (the remaining project was in the railways sector).

Many of the project cost overruns were due to overruns in the local currency portions, mainly due to ① consequences of inflation accompanying construction delays and ② substantial increases in projected civil engineering costs due to unexpected conditions at the site. However, other reasons given include ③ increased customs duties due to appreciation of the yen, and ④ substantial increases in the planned costs for the procurement prices of goods.

In addition, there were 5 projects in which the actual performance of project costs (total costs denominated in yen) exceeded the plan by more than 150% (4 were in the power plants sector and the other was in the railway sector). However, in spite of huge cost overruns in the local currency portion, foreign exchange fluctuations caused the rupee to depreciate significantly against the yen. Thus, it is necessary to keep in mind that there were many instances where actual costs were rather undervalued, as project costs were denominated in yen⁸. Also, there were 4 projects where there was insufficient information, and the total project costs were not known exactly⁹.

(4) Project implementation system

Evaluation of project implementation systems is on the whole unfavorable. Of all 30 projects, 40% had implementation systems that were appropriate (“generally good”), more than 20% showed items for some concern, and over 20% were indicated as having problems. For the remainder, or just over 10% of the projects, no remarks were given regarding system evaluation, making judgment impossible.

⁸ These factors can be thought to apply to the following projects: “Paithan Hydroelectric Project,” “Tamil Nadu State Micro Hydro Power Stations Construction Project,” “Teesta Canal Hydroelectric Project (I)(II),” “Gandhar Gas Based Combined Cycle Power Project (III),” “Telecommunications Project (VI) (VII) (VIII) (IX) (X),” “Ammonium Sulphate and Caprolactam Plant Project,” “Udyogamandal Ammonia Plant Replacement Project.”

⁹ “Paithan Hydroelectric Project,” “Chandrapur Thermal Power Station Expansion Project,” “Gas Pipeline Project (I)(II)(III),” “Mysore Paper Mills Moderization Project.”

The problems with project implementation systems indicated most often were problems with the abilities and management of the project implementation agency. Specific examples include ① lack of coordination ability at the procurement stage¹⁰, ② lack of experience or an insufficient supervisory system at the execution stage¹¹, ③ lack of technical skills on the part of the implementation agency or mid-stream policy changes to inappropriate domestic product procurement¹². Other problems indicated in the implementation systems include inexperience and lack of ability in local suppliers¹³, and insufficient examination such as geological surveys, etc, of the target site for the civil engineering work¹⁴. As a specific example, in one case the majority of the four-year delay in the implementation period was caused even before full-scale construction began by delays in the preparatory stages, including preparations for bids, contracts, etc., which was undeniably a result of the lack of coordination abilities of the implementation system¹⁵. Another example is an instance where the completion of construction was delayed by 7 years. The reasons are as follows. ① During excavation work, a large volume of groundwater welled out, making it necessary to drain it, which took an unexpectedly long time. ② Part of the equipment supplied was defective or did not conform to other equipment, requiring repairs or replacement. ③ Insufficient abilities and implementation of civil engineering work contracted out to local vendors caused substantial delays in the foundation work. ④ Delays were also caused by a lack of funding that was to be disbursed by the Indian side to cover the local costs of civil engineering work for the power plant (approximately three years). ⑤ Construction of the discharge channel for Power Plant Number Two entailed problems in site acquisition and resident resettlement (which developed into a legal battle, causing construction to be delayed by approximately two years). ⑥ Work involved in the design, contracts, and bids for additional components required a lot of time. It was indicated in this case that “most of these factors were caused by insufficient administration and insufficient advance geological surveys on the part of the implementing agency.”¹⁶

¹⁰ “Lower Mettur Hydro Electric Project,” “Tamil Nadu State Micro Hydro Power Stations Construction Project”

¹¹ “Teesta Canal Hydroelectric Project (I)(II),” “Basin Bridge Gas Turbine Project”

¹² “Telecommunications Project (VI) (VII) (VIII) (IX) (X)”

¹³ “Hirakud Hydroelectric Project,” “Ujjani Hydroelectric Project”

¹⁴ “Ujjani Hydroelectric Project,” “Teesta Canal Hydroelectric Project (I)(II),” “Calcutta Metro Railways (Phase II) Construction Project”

¹⁵ “Lower Mettur Hydro Electric Project”

¹⁶ “Teesta Canal Hydroelectric Project (I)(II)”

3.2.3 Effectiveness

(1) Output utilization

As judged by operation indicators, the outputs of just under 60% of all 30 projects, or 17 projects, are being sufficiently utilized, and while the utilization of the outputs of more than 30% or 10 projects cannot be considered sufficient, they are being utilized to a certain degree. Of the 3 projects where the degree of output utilization is moderately lower than planned, 2 are in the power plants sector and 1 is in the railways sector. The reasons for the low degree of utilization are as follows. ① For projects in the power plants sector, the factors include frequent accidents just after starting operations, discontinuation of operations due to the inability to forecast future profitability caused by skyrocketing oil prices¹⁷, and a deterioration in the flow of water used to generate power due to aging irrigation channels¹⁸. ② For projects in the railways sector, factors include the estimation of an overly high population growth rate and the economic growth rate which were then used to forecast the number of passengers, construction was not started of link lines to related subways, feeder buses were not established at each station, and the use of inappropriate transport volume forecasting models¹⁹.

(2) Project goal realization

The degree of project goal realization was judged based on the performance of each project's effect indicators or on qualitative remarks contained in the evaluation report. While more than 60% of all projects realized project goals to a sufficient degree, other projects encountered problems of some kind and did not satisfactorily realize project goals.

The 2 projects with an especially low degree of realization were both in the power plants sector. The degree of output utilization was extremely low, which naturally caused difficulties in realizing project goals.

At the same time, a wide variety of projects deemed to have realized project goals to a high degree were seen in each sector. This included power plants, gas, railways, mining, and within the manufacturing sector, fertilizer projects and those fostering small-scale enterprises, as well as in social services projects.

Within these, taken from descriptions within the evaluation reports regarding the degree of project goal realization, examples of those with very satisfactory degrees

¹⁷ "Chandrapur Thermal Power Station Expansion Project"

¹⁸ "Teesta Canal Hydroelectric Project"

¹⁹ "Calcutta Metro Railways (Phase II) Construction Project"

of achievement are as follows. In power generation projects, one hydroelectric power²⁰ and one thermal power²¹ project were shown concretely to have achieved target values based on quantitative indicators. These include actual annual power generation performance as well as plant availability factor, the average thermal efficiency of combined cycle plants, and the availability of transmission lines and distribution systems. In the gas projects, one project supplied gas to 3 major fertilizer mills, 4 power plants, an LPG plant and more than 20 other factories; the contribution of this project to the Indian economy was deemed substantial²². In regard to the fertilizer projects within the manufacturing sector, 4 projects were deemed to have a high degree of goal realization as they were in line with a national policy that can be summed up: “In order to increase fertilizer use, which increases agricultural output, our goals are to eliminate the gap between fertilizer supply and demand, and to improve the nationalization index. 8 fertilizer manufacturing plants that use natural gas from the Bombay offshore natural gas fields will be established.” “Small Scale Industries Development Program” in the manufacturing sector and “Housing Program for Low and Medium Income Households” in the social services sector were both development finance loan projects that utilized the existing refinancing scheme of institutional financing in India, and both realized their goals efficiently and effectively.

(3) Achievement of IRR

For 23 of the total 30 projects, an IRR (either an economic internal rate of return (EIRR) or a financial internal rate of return (FIRR)) was calculated. In more than 50% of these projects, the actual performance figures (recalculated) attained or exceeded 70% of the projected figures²³, and most of the quantitative effect indicators were achieved. In the remaining projects, or just over 40%, these figures were lower.

Just under 30%, or 8 projects failed to achieve 30% of the planned IRRs (3 power plants, 1 railways and 4 manufacturing project).

In regard to the 3 power plant projects, the low level of electricity generated was due to facility breakdowns, deteriorating water flow, and other factors. Also, depending on the project, because of project cost overruns (domestic cost overruns), the FIRR was forecasted to become negative. In terms of the railways, it was made clear that the FIRR would be negative, due to the fact that the annual operation and

²⁰ “Hirakud Hydroelectric Project”

²¹ “Gandhar Gas Based Combined Cycle Power Project (III)”

²² “Gas Pipeline Project (I)(II)(III)”

²³ For example, if the planned EIRR was 20.0%, the actual figure was 14.0% or higher.

maintenance costs would exceed annual earnings. All 4 manufacturing projects were in the fertilizer sector, but there were a variety of reasons for their poor performance²⁴.

(4) Effect of technical assistance

More than 80% of the projects either did not include training or technological instruction in their scopes, or contained no mention of their effects. Of the remaining 5 instances, (or just under 20% of all projects), 2 were deemed to have had advantageous technical transfers, both projects in the fertilizer sector. Specifically, in one instance, the consultant participated closely in the project from the planning stage onward, and overseas training and simulator training was considered a contributing factor to the favorable operational status that has continued to the present²⁵. In the other case, the manufacturing process licensor (a Danish company) was hired during the implementation period. The licensor imparted knowledge, information and practical experience to the design-related subsidiary of the implementation agency, after which the subsidiary also undertook detailed designing and process designing, which proved highly useful²⁶.

However, there was one project which had problems. It was indicated that the hiring of a consultant had a negative effect on performance²⁷.

²⁴ These include ① cases when the FIRR was 30% or lower than the goal due to prices being much lower than international commodity prices at the planning stage (“Thal Vaishet Fertilizer Project,” “Ammonium Sulphate and Caprolactam Plant Project”), ② a case where the FIRR was conspicuously lower as a result of rising construction costs brought on by delays in the implementation period and of increases in operation costs (“Ammonium Sulphate and Caprolactam Plant Project”), ③ a case where the FIRR is expected to be 30% or lower than the goal, owing to very low project benefits caused by a lack of necessity to use backup private power generation plants (“Fact Captive Power Plant Project”), and ④ a case where the FIRR was negative since the benefit value of the import substitution of the product (ammonia) was conspicuously lower than the same product’s extremely low international price and where the price of materials (naphtha) was soaring (“Udyogamandal Ammonia Plant Replacement Project”).

²⁵ “Aonla Fertilizer Plant Project (I)(II)(III)”

²⁶ “Udyogamandal Ammonia Plant Replacement Project”

²⁷ “Basin Bridge Gas Turbine Project”

3.2.4 Impact

(1) Contribution to overall goal achievement

This is evaluated from two perspectives: the degree to which overall goals were achieved, and how the project contributed to this. There were some projects where no comments were made regarding contributions to overall goal achievement and thus were not evaluated on this item. However, of these, there were some where it was possible to judge the degree of project contribution to overall goal achievement by examining the relationship between development policies, priority issues and the degree of project goal attainment. Thus, evaluation was possible in 80% of all projects, and the degree of contribution to overall goal achievement was judged to be high in three-quarters of these, or 18 projects, which were distributed across all of the sectors.

However, one project where the degree of contribution to overall goals was low was “Chandrapur Thermal Power Station Expansion Project.”

(2) Impact on policy and institutional systems

Beginning with this section, many of the ex-post evaluation reports contained no mention related to the check criteria for the impacts discussed below. The reason no comments were made could be that impacts were not evident, but it is also conceivable that at the time of evaluation, the concept of impacts was not defined, and so no mention was made in the evaluation report. For that reason, instances such as these will be interpreted as unclear in this review.

Only 2 of the total 30 projects referred to impacts on policy and institutional systems. In one case, “Housing Program for Low and Medium Income Households,” a favorable impact occurred whereby the foundation for institutional financing was established, such as the individual housing loan refinance project implemented through the National Housing Bank (NHB). In the other case, in “Afforestation Project in Aravalli Hills,” it was reported that the state’s Department of Forests and the Village Forest Protection and Management Committee (VFRM) worked together in partnership to supervise forestry resources through the JFM (Joint Forest Management) scheme, which helped to bring this project into reality. However, in practice the original goal of having the VFPMC independently supervise the forests was difficult, and it had to rely on the State Forestry Department. In this case, there was a positive impact, but it was not necessarily sufficient.

(3) Socio-economic impact

More than 60% of the evaluation reports did not contain any reference to socio-economic impacts (impacts related to resident relocation and site acquisition are described later, and so are not included here). Also, even if impacts were recorded, in many projects the cause and effect relationship between project implementation and socio-economic impacts was not always sufficiently explained.

Of those projects where mention of impacts was made, in most cases positive results are judged to have occurred. Projects in almost all sectors showed examples of socio-economic impacts.

The following are specific examples.

① Job development

Effect on job development was reported in projects in many sectors including power plants, gas, forestry, manufacturing and social services.

② Regional development

Some of the positive effects listed include development of regions around project sites, which includes regional utilization brought about through job development and promotion of technical skills²⁸, and community development brought about through job creation²⁹, as well as an increase suburban development through expansion of the commuter belt³⁰.

③ Improvement in the quality of life

There are cases where the various social service projects undertaken by project implementation agencies contributed to improvement of the quality of life for those living in rural communities in areas around project sites³¹. There are also instances where establishing a tourism infrastructure created markets for citizens living in areas surrounding the target site or improved their access to water supplies, and a case where a mountain afforestation project brought about a strengthening of the organizational abilities of local residents, the empowerment of women, and improved their access to government, which together with the future potential of the locals, helped the project to be positively evaluated³².

²⁸ "Lower Mettur Hydro Electric Project"

²⁹ "Bijaipur Fertilizer Plant Project," "Aonla Fertilizer Plant Project (I) (II) (III)"

³⁰ "Bombay Suburban Railways Modernization Project"

³¹ "Gandhar Gas Based Combined Cycle Power Project (III)," "Aonla Fertilizer Plant Project (I) (II) (III)"

³² "Afforestation Project in Aravalli Hills"

④ Domestic self-sufficiency rate improvements / import substitute / foreign exchange savings and contribution to exports

In many of the projects in the manufacturing/fertilizer sector, there were references to improvements in the domestic self-sufficiency rate and effective import substitute, resulting in foreign exchange savings. Also, in the “Small Scale Industries Development Program,” concrete proforma calculations show a contribution to exports³³.

⑤ Agricultural promotion

In the projects in the manufacturing/fertilizer sector, factors that promote agriculture were listed, including competition among fertilizer companies creating highly active sales operations, and seminars explaining fertilizer use or for technological instruction, and the popularization of high yield point product seeds³⁴.

(4) Impact on technology

Obviously, for those projects where this item is part of the project goals, and even in those cases where it isn't, some transfer of technology or know-how should have occurred through project implementation in all cases. However, there are very few evaluation reports where mention of this impact is made; actually, comments were made regarding this item in less than 20% of all projects.

The “Bombay Suburban Railways Modernization Project” is an example that precisely illustrates technological transfer effects. Through a technological tie-up between the Japanese supplier and a local company that was the consultant in this project, the local company began manufacturing the same type of high performance motors used in the project. As well, it produced control equipment, achieving a striking improvement of its technological level. Another example is the “Mysore Paper Mills Modernization Project,” where it was reported that, through the fuel efficient boilers and turbine generators that were installed for the project, the implementing agency staff became markedly more aware of fuel consumption efficiency. Another instances is the “Calcutta Metro Railways (Phase II) Construction Project” where it was mentioned in the evaluation report that “the Ministry of Railway and the implementation agency recognize that the construction and operation of the Calcutta subway contributed greatly to the self-respect and engineering abilities of India and its citizens, and this accumulated sense of pride and skills are presently being taken advantage of in the subway project being implemented in

³³ Within the target projects, 463 subprojects started exporting, and in fiscal 1991 – 92, food processing had the largest total export amount at 3.2 billion rupees.

³⁴ “Bijaipur Fertilizer Plant Project,” “Aonla Fertilizer Plant Project (I)(II)(III)”

Delhi.” So while exact measurements are difficult, there are cases where there were indications that large technological impacts took place.

(5) Impact on natural environment

Not more than half of the projects reported any impact on the environment, and the majority of these indicated that no particularly negative impacts occurred, or indicated that there was an understanding to give sufficient consideration to the environment. There were no cases where negative environmental impacts were reported.

(6) Resident resettlement and site acquisition

Only 20% or 6 projects, contained any reference to what was interpreted as related to resident relocation and site acquisition. Two of them indicated that there were no problems, the next two indicated that problems occurred only on a small-scale³⁵, or that through compensation for site acquisition or assistance with employment, no problems occurred³⁶. In the last two instances, the households targeted for resettlement took legal action, and resolution of the issue took a long time³⁷.

³⁵ “Tourism Development Project”

³⁶ “Lower Mettur Hydro Electric Project”

³⁷ In the case of, “Teesta Canal Hydroelectric Project (I)(II),” it was reported that “a portion of the households agreed to the relocation, took the compensation, but yet refused to move for approximately 2 years. The problem was taken all the way to the State court, and the case was concluded in February 1994 with the eviction of these households. No other court cases were brought following that.” In another case, “Calcutta Metro Railways (Phase II) Construction Project,” it was reported that “The planned route of this subway passed right under the center commercial district of Calcutta, necessitating the eviction or relocation of storekeepers, business owners and others who owned property. However, many were opposed to the resettlement, and approximately 800 claims opposing the resettlement were filed. According to the implementation agency, in the end, the government’s purpose was the deciding factor, but it took many years to clear up all of these individual claims opposing relocation.” According to a survey done by JBIC, it was indicated that a lack of coordination and communication between the Railways Ministry and the State government (especially noticeable was during governmental procedures involving the receipt and recording of site and property acquisition motions) was the main reason for the troubles in site acquisition.

3.2.5 Sustainability

(1) Output condition

Of all 30 projects, the current state of output (physical condition) of more than 70% was satisfactory, and 20% had problems of some kind but the state of output was adequate. For the remainder, there was one case where there were problems and another where there was insufficient information on which to base a decision. Problems were noted in “Small Scale Industries Development Program,” in which an examination of the loan recovery situation of the State Finance Commission (SFC), which accounted for approximately 60% of the sub-loans revealed that, of only the original principal, approximately 20% on average (or roughly 40% of the total number) of total outstanding loans were continually in arrears. For that reason, in the relevant evaluation report, it was indicated that, “in order to improve this situation, challenges include increasing the monitoring of sub-loans and revising the accounting standards.”

In terms of output (project effects), projects that were adequate, but had some concerns are distributed as follows: 1 instance in the electric power sector, and one each in the railways, telecommunications, and urban/rural community infrastructure sectors. In the electric power sector, although the power generation unit had mechanical problems that caused operations to stop, a solution appeared to be worked out³⁸. In the railways project, trouble occurred with the supplied motor, which the supplier then fixed, and went on to suggest improvements, including altering a portion of the design, and provided maintenance instruction. As a result, this situation is on its way to being resolved³⁹. In the telecommunications project, it was indicated that the high failure rate of domestic products is problematic, although this occurred in the portion of the project not eligible for ODA loan⁴⁰. In the urban/rural community infrastructure project, JBIC had received a revolving loan through the primary loans, and were to be providing financing to mid- to low-income earners. However, the amount of funds available for this target group is declining⁴¹.

(2) Operation and maintenance system

³⁸ “Chandrapur Thermal Power Station Expansion Project”

³⁹ “Bombay Suburban Railways Modernization Project”

⁴⁰ “Telecommunications Project (VI) (VII) (VIII) (IX) (X)”

⁴¹ “Housing Program for Low and Medium Income Households.” In this project, due to inflation and other causes, the monthly income standard of India’s low- to mid-income earners was higher than the standard for low- to mid-income earners defined at the time the loans were executed through the Japanese ODA loan. Accordingly, when looking at the entire individual housing loan finance system, the total annual loans to low- to mid-income earners as defined at the time of loans execution were decreasing, but, on the other hand, the target is shifting to lower income groups.

Of all the projects, more than 90% were judged to have good administrative and maintenance systems, while there were concerns in 10% of the projects, and one project had problems. There were no projects where there was insufficient information to make an evaluation. It can be said that, on the whole, the administrative and maintenance systems of projects in India have an extremely high standard.

In particular, 7 of the projects in the manufacturing/fertilizer sector were deemed to have good administrative and maintenance systems. Of these, specific comments in the evaluation reports for each of the fertilizer mill construction projects in Hazira, Thal Vaishet, Aonla, Udyogamandal gave the impression that the administrative and maintenance systems in each of these projects followed good practices⁴². Also, in projects in the power plants sector, even though the majority experienced long delays at the project implementation stage and there were many problems with the implementation systems, it was striking that for most of these projects the administrative and maintenance systems were noted as appropriate and were deemed good.⁴³

However, in the problematic project, “Small Scale Industries Development Program,” as mentioned above, an examination of the loan recovery situation of the State Finance Commission (SFC), which makes up close to 60% of the sub-loans, reveals that there are many that are in arrears, both long term and involving large sums⁴⁴. Developing a way to remedy the situation is identified as an issue for the SFC, as well as for the Small Industries Development Bank of India (SIDBI) and for the Industrial Development Bank of India (IDBI) which direct the SFC,

(3) Financial resources for operation and maintenance

⁴² As the most exemplary example, here is a summary of the relevant parts reported on “Hazira Fertilizer Project.” “Regarding the administrative and maintenance system of the factory, following are the reasons it was decided that there were no problems, and which are actually indicative of the factory’s good practices. ① In addition to having sufficient personnel, many regular personnel and top staff are highly skilled workers who transferred to the factory. In addition, efforts are being made in improving the training of the workers, with independent training for both factory personnel and executives. ② Also, ample consideration of preventative maintenance is apparent in the administrative and maintenance activities, and spare parts are proactively being stockpiled because procurement procedures take a long time. ③ Within the factory, methods to ensure that close communication between the administrative and maintenance department and the production, technology, and inventory management departments have been established. ④ Once operations began, facility upgrading and improvements were undertaken in order to have safer, more effective operations, and new technology was also introduced through the factory’s own initiative.”

⁴³ For example, the evaluation on “Raichur Thermal Power Station Expansion Project,” reports that the implementing agency increased its performance about the operation and maintenance system and was awarded by Central Electricity Authority, receiving 1.68 million Rupees

⁴⁴ As of March 1992, the amount of SFC sub-loans in arrears averages roughly 20% of the total amount outstanding of only the original principal (about 40% of the total number).

Thirty percent of all projects were deemed to have sufficiently secured budgets for operation and maintenance through the future. Nearly half of the projects had some items of concern regarding financial resources, more than 10% of the projects had clear problems, while in the remaining 10% of the cases there was either no mention of this item in the ex-post evaluation report or there was insufficient information with which to make a judgment.

The 4 projects where problems were identified are distributed as follows: 3 in the power plants sector and 1 in the forestry sector.

In the power plant projects, the financial situation of the relevant State Electric Boards, which were the operating and implementing agencies in each case, are as follows. The systems operate at a deficit and rely on subsidies as a result of the low capacity operating rate caused by aging facilities and high system losses. For those reasons, it is predicted that difficulties will arise in securing the on-going financial resources needed for operation and maintenance. In "Afforestation Project in Aravalli Hills," the financial resources for administration and maintenance are expected to come out of the budget of the Ministry of Environment and Forests and from profits of the sale of grass grown in forest lands. However, the lack of funding of the Ministry of Environment and Forest and the attrition rate of trees due to the increasing focus on sales of grass have been identified as items of concern.

Also, the 14 projects where there are some concerns regarding financial resources are distributed in the following sectors: 4 power plants, 6 manufacturing (4 of which are fertilizer projects) and one each in gas, railways, telecommunications, and tourism. Concerns in the power plant projects are based primarily on the above-mentioned financial situation of the relevant State Electric Board. However, in addition to the capacity operating rates and system loss rates noted above, differences in the outlook for financial resources for operation and maintenance of each of the State Electric Boards reflects the differences of each State Electric Board's fee collection ratios and accumulated accounts receivables, the state's financial circumstance which affects the continuation of the state government's bailout measures and subsidies, structural reforms of the state electric power sector, and so on.

Concerns regarding financial resources for administration and maintenance in the fertilizer sector are visible in the 4 most recently evaluated projects⁴⁵. The concerns are based on the fact that, in line with the economic liberalization that began in the 1990's, government fertilizer price control systems and subsidies are beginning to be reduced or abolished.

⁴⁵ "Ammonium Sulphate and Caprolactam Plant Project," "Fact Captive Power Plant Project," "Aonla Fertilizer Plant Project (I) (II) (III)," and "Udyogamandal Ammonia Plant Replacement Project"

(4) Continuation of needs

The continuing need for the project was deemed sufficient for more than 80% of the projects, a high proportion. Of all projects, only 10% were judged to have some kind of concern regarding the continuity of needs. For the remainder, or just less than 10% of the total, either there was no mention in the ex-post evaluation report or there was insufficient information with which to make a decision.

The single instance that was judged to have problems in the continuity of the need for the project was “Chandrapur Thermal Power Station Expansion Project.” The project has lost all financial stability, and in addition to this, it has been determined that the necessity for the power plant of this project would be lessened by the several power generation projects that would be implemented by the 2 power plant projects currently under consideration, to be completed in 2005-06.

(5) External factors

Of the 30 target projects, more than 40% had comments regarding external factors, which have a significant effect on the results and continuity of the evaluated projects. Of these, just under 10%, or 2 projects indicated beneficial factors for project results. Both are power plant projects, and in one case, the prognosis for securing a sufficient volume of water in the future has become positive, as a result of planned reduction of irrigation in the surrounding regions⁴⁶. In the other case, a plan to increase the production volume of the Bombay offshore natural gas fields and to multiply the gas supply volume of the pipeline, makes it now possible to expect a stable supply of gas to the target project’s thermal power plant⁴⁷.

However, there are external factors such as reform activities and policy changes based on economic rationalization that are capable of overturning the preconditions of the respective projects, as illustrated in the following cases. In “Chandrapur Thermal Power Station Expansion Project,” structural reform of Assam State’s electrical power has begun, where greater efficiency in controlling expenses is being demanded, which makes resuming operations of unprofitable power plants much more difficult. In “Teesta Canal Hydroelectric Project (I)(II),” the rehabilitation of waterways necessary to secure the water flow volume to power plants is under the charge of the state’s Irrigation Department, whose budgetary constraints have caused this work to be delayed. In “Ammonium Sulphate and Caprolactam Plant Project,”

⁴⁶ “Ujjani Hydroelectric Project”

⁴⁷ “Gandhar Gas Based Combined Cycle Power Project (III)”

given that the “systematic phase-out period” of economic deregulation, reduction and/or abolition of subsidies has begun and streamlined operations are being sought, problems are foreseeable for the continuity of projects that do not have the power to compete internationally.

The timely response to major changes in economic and trade policies, including structural reforms in the electric power sector, economic deregulation, and to the shift toward a more market-oriented economy is very important for the outlook for each project’s sustainability, and to its ability to take steps to meet the situation. In the future, even the JBIC should devise and fortify tactics to positively participate and support appropriate responses to these types of major policy shifts.

3.3 Issues specific to India

An examination of Japanese ODA loan projects to India reveals that the amount of money supplied to the electric power sector makes up nearly half of the total loans to date, and as one of the priority areas future project implementation policy will continue to stress the development and upgrading of the electric power sector. Here, we will survey the support for this continuing priority area, summing up the characteristics of projects targeted for this review and the results and issues of Japanese ODA loan assistance.

(1) Past record of support to India's electric power sector by Japanese ODA loans

As shown in Table 2-1, to date 59 projects make up Japanese ODA contributions to India's electric power sector, including 49 power plants and 10 transmission lines and distribution systems, totaling 800.7 billion yen in ODA loan agreements. Support to this sector has been large, as this is just less than half of the total project loans to India. Looking at JBIC's aid to the electric power sector by country, India is notably in first place, with a 19.2 % share based on the total monetary value of the agreements⁴⁸. By year, and by type of project (power plants, and transmission lines and distribution systems), assistance to the industry started to accelerate in the 80's, and gained further ground in the 90's, as shown in Table 3-4.

Table 3-4: Loan agreements in the Indian electric power sector by year

Year	Power plants	Transmission lines and distribution systems	Total
1975 - 1979	2	—	2
1980 - 1984	9	—	9
1985 - 1989	10	—	10
1990 - 1994	11	3	14
1995 - 1999	13	5	18
2000 - 2003	4	2	4
Total	49	10	59

(2) Characteristics of reviewed items and results of Japanese ODA loan assistance to the electric power sector

⁴⁸ For reference purposes, Indonesia was in second place, with 503.5 billion yen (12.1%). However, at 93, there were many more loan agreements in Indonesia.

An examination of the electric power sector issues targeted in this review reveals the following characteristics and results.

① The projects reviewed are relatively old projects and in those days, assistance was focused on power plants. Thus, the support of 11 projects increased the plant capacity of power facilities by 2 million KW. In 1992, the year the loan agreement contract for the 11th project was signed, the output of India's entire power generation industry was 70 million KW. Therefore, by examining that status of each state or region's power supply deficiencies and the costs and financial conditions of each project, it becomes clear that ODA loans to the electric power sector were focused on high priority areas from the viewpoint of marginal utility, rather than contributing to increasing overall power generation capacity. In terms of the "relevance of the project goals at the time of evaluation," this ties in with the fact that approximately 80% of the projects were deemed to be fairly relevant.

② There were many problems in "efficiency of implementation". In particular, in terms of the implementation period, delays in construction completion were never less than one year, and 70% of the delays were longer than three years. In addition, regarding the "project implementation system," close to half had problems, and less than 30% were deemed to be good overall⁴⁹, which can be said to be a contributor to these negative efficiency results.

③ The most interesting fact here is that after completion of the project many had relatively satisfactory performance. By including projects where there were some concern but whose performance was considered adequate, the "degree of project goal realization" was higher than 80%. Also, more than 90% of the projects had good overall "operation and maintenance systems," one of the major check items used to evaluate project sustainability, and by including those where concerns are mentioned but deemed adequate, all projects were generally appropriate. However, in examining the sustainability of the project, an examination of the "financial resources for operation and maintenance," another of the evaluation check items, reveals that on the whole most do not have promising outlooks. This is a reflection of the problems inherent in the electric power rate system and of collecting outstanding fees, an endemic condition in many state or implementing agencies⁵⁰.

④ In regard to the gap between the project implementation systems and the operation and maintenance systems, it is quite natural that questions abound, such as why there is a difference when each project had the same implementing and operating

⁴⁹ Refer to 3.2.2 (4) for the section on project implementation systems.

⁵⁰ Examining the 8 projects (more than 70%) that can be judged reveals that only 1 was considered good overall, half of them, or 4 had concerns, and 3 had problems.

agency, and whether there really is a gap. At any rate, by examining each of the project evaluation reports, the conclusion reached is that there is a gap, so in surmising why they occur, the following reasons come to mind. First, looking closely at the problem areas in the project implementation system reveals the following issues: a) lack of coordination abilities at the procurement stage b) lack of experience or insufficient construction supervisory systems at the execution stage, c) insufficient geographical surveys before the project, and d) the lack of experience of the local companies. Therefore, what separates successes and failures at the project implementation stage is the ability to deal with unexpected events with appropriate responses, or having the ability and experience to handle external factors and coordinate with concerned external people. On the other hand, in the administrative and maintenance systems, for systems that effectively and regularly undertake relatively routine operations, the problem is following a pre-decided program and doing the work in a proper fashion⁵¹. In this way, the considerable differences in requirements at the project implementation stage and at the administrative and maintenance stage can be considered an explanatory factor for the gap.

(3) Reform movement in the electric power sector and issues in Japanese ODA loans

In future support for upgrading the electric power sector, sufficient consideration should be given to the lessons learned from these evaluations, especially giving due consideration to the abilities and experience of each of the implementation agencies as well as the project's connection to sector reforms. Ample consultation with the implementation agency in question should also be done as the project continues to progress.

Comments related to the reform and partial privatization of this electric power sector can be seen in some of the more recent evaluation reports, but the status of efforts differs by state. Also, the World Bank, ADB and others have been implementing support related to the promotion of reform. Of the target loan projects of this review, none are associated with the reform of the electric power sector. However, in the future, more active involvement in some form or other is needed from the standpoint of implementing aid with a view to sustainability. In this respect, remarks in JBIC's "Medium-Term Strategy for Overseas Economic Cooperation Operations," regarding the development of the electric power sector, one of the priority areas, include the following. "Support will be provided mainly to states

⁵¹ At the operation and maintenance stage, inspections of operations and equipment are carried out based on the manufacturers' manuals. Within a probable range, there are many kinds of preparations and activities, such as training and the establishment of the necessary systems, which could be implemented to aid in inspections.

proactively involved in electric power sector reform,” and “In light of experiences with the implementation of past projects, the abilities of the implementation agencies and their response to reforms will be sufficiently heeded.” This is the correct policy. In reality, to what extent this policy can be concretely realized through projects, and whether or not contributions to upgrade a sustainable electric power sector are possible, will be the issue.

4. Conclusions

4.1 Performance analysis overview

Of the ex-post evaluations conducted to date on India's 30 projects, it can be said that the projects overall have achieved good results. Collectively, the "project relevance" is high, and a satisfactory degree of project effectiveness was achieved. Above all, the degree of "project goal realization" was high in the greater part of the projects, and the projects' "operation and maintenance systems" were also sufficient, contributing to a high evaluation of project "sustainability". As a whole, "impacts" were evaluated as positive where judgments of the "impacts" of the projects were made.

Meanwhile, there were not a few projects where problems were seen in the "efficiency of implementation." In particular, projects that need improvement in the "efficiency of implementation" were largely concentrated in the electric power sector, and within this, there were many issues in the "implementation schedule efficiency" and "project implementation system."

By sector, the performance of the electric power sector was unsatisfactory, the most problematic being the efficiency of project implementation as noted above. This is quite a contrast to the high performance of the mining and manufacturing sector. Projects related to fertilizer industry can be seen as "good practice" being given high evaluation level to five evaluation criteria. Although there were only a small number of projects in social services and gas sector, they also had good performance ratings.

Below is a summary of an analysis of the performance of the targeted projects for review by each of the 5 evaluation criteria.

(1) Relevance

"Project Relevance" was one of the most highly evaluated of the 5 evaluation criteria, along with "sustainability." All the projects were deemed to conform to overall goals and development issues. Many of India's projects are in keeping with the 5-year plans or priority issues.

Although 40% of the projects experienced some form of alteration to the project scope at the implementation stage, the majority of these were relevant changes. Even at the time of evaluation, most of the projects goals were considered relevant.

(2) Efficiency

During project implementation in India, the largest problem was delays in the implementation schedule. Most of the projects targeted for review encountered implementation schedule delays, and while 40% of the projects had significant delays

of more than 3 years, three quarters of these were actually delays exceeding 5 years. There were various reasons for the delays but in many cases they were caused by problems during the construction stage, such as unexpected natural conditions that resulted in construction difficulties, natural disasters, lack of abilities on the part of the construction companies, as well as delays in the plan approval and procurement stages. Delays in the implementation schedule are also connected to increased project costs. And, while delays during the implementation were seen across almost all sectors, they were especially evident in the electric power sector. Long-term delays in the railways sector were also apparent. In addition, an associated issue is that there were several points which need improvement in the “project implementation systems,” as several problems related to the abilities and management of the implementation systems were seen.

(3) Effectiveness (Project Goal Achievement)

In the majority of the projects, the “outputs” were being sufficiently utilized and “project goals” were realized to a satisfactory degree, so it can be said that the effectiveness of Japanese ODA loans to India was by and large satisfactory. However, there were a few projects where the degree of “project goal realization” was low. All these were projects in the electric power sector.

In terms of the “achievement of IRR,” of the three quarters of the projects where an IRR was noted, the majority of the projects yielded the economic and financial benefits anticipated during the planning stages. However, just under 30% of the projects had insufficient performance. These were spread through the electric power, railways, and manufacturing sectors.

(4) Impact

In terms of the “contribution to overall goal achievement,” three quarters of the cases among the evaluation reports with notations about this criterion, sufficient contributions were discerned. Comments in the evaluation reports regarding “socio-economic impacts” were recorded in more than 60% of the projects, Examples of which are ①job development, ②regional development, ③improvements in the quality of life, ④improvements in the degree of self-sufficiency / import replacement / foreign exchange savings and contributions to exports, and ⑤ agricultural promotion.

Only about half of the projects contained comments concerning the “impact on natural environment,” and for most of these, there was no particularly negative environmental impact, or there were comments indicating that there was an understanding to give sufficient consideration to the environment. Only 20% of all project ex-post evaluation reports contained references to “resident resettlement and land acquisition,” including the resolution of which took a long time.

(5) Sustainability

The level of evaluation of “sustainability” was the highest of all 5 evaluation check items. An examination of the “operation and maintenance systems,” a central check item for sustainability, reveals that just under 90% of the projects were deemed to have satisfactory systems. For the “condition of output,” approximately three quarters of the projects’ facilities were considered to be in good condition. In terms of “financial resources for operation and maintenance,” more than four fifths of these were judged to be able to secure sufficient financial resources or able to secure funds despite some concern.

All told, the sustainability of projects in India can be considered to be very high. However, on the topic of “condition of external factors,” of those projects where judgment is possible, based on the structural reform of the electric power sector, and economic liberalization policies occurring in the fertilizer sector, the implementation of governmental policies including the curtailment or abolishment of subsidies, streamlining of operations, and privatization is bringing about significant changes. Therefore, future developments will have an impact on project sustainability.

3.2 Lessons Learned / Recommendations

(1) Strategies to further improve the performance of JBIC’s Japanese ODA loans to India

As described in the overview of the performance analysis, based on a review of the evaluation reports of projects to date, the current condition of the performance of Japanese ODA loans to India reveals that the key evaluation criteria of “project relevance,” “efficiency (project goal achievement)” and “sustainability” were rated very highly. In order to further guarantee this condition and to further improve overall performance, in keeping with the results of this review, it is thought that further concentration of efforts on the following 2 points would be effective.

① As seen in the analysis to this point, most problems in the previously evaluated loan projects in India are seen in the “implementation schedule efficiency” and “project implementation system.” An examination of the reasons for these problems reveals that many of the issues can be prevented from occurring or the extent of the problems can be minimized. This can be achieved by directing more attention to the problem areas in advance, and making the parties concerned aware of the potential problem points while giving due consideration where needed or developing countermeasures. Therefore, in future loan projects in India, in the stages from

formulation through to approval, lessons regarding the “implementation schedule efficiency” and “project implementation system” should be taken from previous examples, and more attention should be paid to those matters.

② Meanwhile, while it is the highest-rated of all 4 evaluation criteria, “sustainability” is highly dependent on a variety of factors, such as whether the policies and systems the project operations are premised on will be maintained or changed, and the timing of those changes. Indeed, within the evaluation reports for projects in India, significant developments related to policies are demonstrated, such as the structural reform of the electric power sector, and the curtailment or abolishment of subsidies, streamlining of operations, and privatization in the fertilizer sector. More than just project “sustainability,” what is needed in these instances is active involvement in the preparation, development and firm establishment of the mechanisms for true self-sustaining development (autonomous development) and reform of policies, institutions and organizations.

(2) Creation of “Success factor examples” in an effort to achieve greater utilization of lessons learned

In the evaluation reports targeted for this review, there were several projects whose performance suggested that they had good practices. There are many different ways to cite good practices, based on the method of focusing. For example, by individual project, there is a project which received high ratings in all five evaluation criteria, or by sector, there is the fertilizer manufacturing sector, in which most projects, achieved steadily high evaluations across the board. And, even though individual projects or sectors were not always rated highly, there are examples of projects where certain evaluation check items, for example “operation and maintenance systems,” were considered to show good practices, such as those within the power plants sector.

For instance, in the fertilizer sector, such good results as technology transfer being done effectively due to elaborate project operation by an implementing agency and a consultant from the designing stage, sustainability of a project being improved with training for staff or impact being made to agricultural development are seen. In power plant sector, implementing agency was awarded cash incentive since their daily check and maintenance system was elaborated.

Thus, in addition to providing feedback for future work, it is important to make use of the lessons learned to review and study failures and problem areas. However, studying and applying successful experiences and factors of success is also important, and could prove to be effective in many cases. From this perspective, examples of good practices in India (the target of this report) and in other countries can be

classified in the various manners noted above, based on individual project, sector or evaluation criteria. This compilation of a purported collection of success stories could be utilized at the project formation and implementation stages in India and other countries. This would be a worthwhile endeavor.

India: List of projects under review

Project Name	Sector	Date of loan agreement (month, year) *Note
NAGARJUNASAGAR HYDROELECTRIC POWER STATION EXPANSION PROJECT, NAGARJUNASAGAR HYDROELECTRIC POWER STATION PROJECT (STAGE II)	Electric Power and Gas/Power plants	Jun-78~ Oct-81
PAITHAN HYDROELECTRIC PROJECT	Electric Power and Gas/Power plants	Aug-78
CHANDRAPUR THERMAL POWER STATION EXPANSION PROJECT	Electric Power and Gas/Power plants	Jun-81
LOWER METTUR HYDRO ELECTRIC PROJECT	Electric Power and Gas/Power plants	Oct-81
HIRAKUD HYDROELECTRIC PROJECT	Electric Power and Gas/Power plants	Oct-81
TAMIL NADU STATE MICRO HYDRO POWER STATIONS CONSTRUCTION PROJECT	Electric Power and Gas/Power plants	Feb-83
UJJANI HYDROELECTRIC PROJECT	Electric Power and Gas/Power plants	Nov-85
TEESTA CANAL HYDROELECTRIC PROJECT (I) (II)	Electric Power and Gas/Power plants	Dec-86~ Jan-91
RAICHUR THERMAL POWER STATION EXPANSION PROJECT	Electric Power and Gas/Power plants	Dec-88
BASIN BRIDGE GAS TURBINE PROJECT	Electric Power and Gas/Power plants	Mar-90
GANDHAR GAS BASED COMBINED CYCLE POWER PROJECT (III)	Electric Power and Gas/Power plants	Dec-92
GAS PIPELINE PROJECT (I)(II)(III)	Electric Power and Gas/Gas	Dec-84~ Dec-86
BOMBAY SUBURBAN RAILWAYS MODERNIZATION PROJECT	Transportation/Railways	May-82
CALCUTTA METRO RAILWAYS (PHASE II) CONSTRUCTION PROJECT	Transportation/Railways	Feb-83
OIL & NATURAL GAS COMMISSION OFFSHORE SUPPLY VESSEL PROJECT	Transportation/Marine transportation	Feb-83
TELECOMMUNICATION PROJECT (II)(III)(IV)(V)	Telecommunications/Telecommunications	May-80~ May-82
TELECOMMUNICATIONS PROJECT (VI)(VII)(VIII)(IX)(X)	Telecommunications/Telecommunications	May 80~ May-82
AFFORESTATION PROJECT IN ARAVALLI HILLS	Agriculture, Forestry and Fisheries/Forestry	Mar-92
BOMBAY OFFSHORE OIL FIELD DEVELOPMENT PROJECT (I)(II)	Mining and Manufacturing/Mining	Mar-80~ Jul-80
BIJAIPUR FERTILIZER PLANT PROJECT	Mining and Manufacturing/Manufacturing	Sep-84
HAZIRA FERTILIZER PROJECT	Mining and Manufacturing/Manufacturing	May-81
THAL VAISHET FERTILIZER PROJECT	Mining and Manufacturing/Manufacturing	Sep-81
AMMONIUM SULPHATE AND CAPROLACTAM PLANT PROJECT	Mining and Manufacturing/Manufacturing	Sep-84
FACT CAPTIVE POWER PLANT PROJECT	Mining and Manufacturing/Manufacturing	Feb-88
AONLA FERTILIZER PLANT PROJECT (I)(II)(III)	Mining and Manufacturing/Manufacturing	Dec-84~ Dec-86
UDYOGAMANDAL AMMONIA PLANT REPLACEMENT PROJECT	Mining and Manufacturing/Manufacturing	Dec-92

MYSORE PAPER MILLS MODERNIZATION PROJECT	Mining and Manufacturing/Manufacturing	Dec-88
SMALL SCALE INDUSTRIES DEVELOPMENT PROGRAM (I)(II)(III)	Mining and Manufacturing/Manufacturing	Dec-88~Jun-91
TOURISM DEVELOPMENT PROJECT	Social Services / Tourism	Dec-88
HOUSING PROGRAM FOR LOW AND MEDIUM INCOME HOUSEHOLDS	Social Services / Urban/Rural Community Infrastructure	Jan-91

*Note: For projects with multiple loan agreements, the date of loan agreement shows the dates of the first and the last agreement.