

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

Country Review Report

China

Final Report

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**This country review report (China) 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 China 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. Ex-post project evaluation is the assessment of how a project was implemented and administrated in contrast 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 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 the completed projects to China using ex-post evaluation reports, to analyze the data to determine the cumulative effect of the Japanese ODA loan projects to China 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 outlines social and economic situation of China. Chapter two presents an overview on the ODA loan to China. 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 to China.

The performance analysis is conducted through the establishment and analysis of five primary evaluation criteria broken down into 23 evaluation check criteria.

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**Attached Materials: Reviewed Projects**

# 1. Economic and social trends in China

## 1.1 Politics, economy and society<sup>1</sup>

### (1) Politics

At the 1978 Third Plenary Session of the Eleventh Chinese Communist Party Central Committee (The Third Plenum), China declared that it was shifting “the priority policy for the Party and the State is a transition toward modernization,” initiating the reform and open-door policies. The “Theory of Primary Stage of Socialism<sup>2</sup>,” propounded in 1987, provided the rationale for the introduction of private enterprise and the corporate stock system, and caused discussions on political reforms. However, the June Fourth Incident<sup>3</sup> (the Tiananmen Square Incident) in 1989 caused political and economic paralysis. In response, Deng Xiaoping toured Shenzhen and other southern provinces in January 1992, where he gave a series of vital speeches collectively known as the “Southern Tour Lectures<sup>4</sup>.” These served to provide fresh impetus to the reform and open-door policies. In October of the same year, a new concept of a “socialist market economy” was put forward at the Fourteenth National Congress of the Chinese Communist Party. This was incorporated into the Constitution in March 1993, at the First session of the Eighth National People's Congress, which set the Chinese economy on a course to becoming a market economy. Starting with the Fifteenth National Congress of the Chinese Communist Party held in September 1997, through to the first session of the Ninth National People's Congress in March 1998, Premier Zhu Rongji’s administration actively promoted the “three major reforms” of government-owned enterprise reform, financial system reform and government administration reform.

Economic structural adjustments were intended to achieve the initial establishment of a “socialist market economy” based on market mechanisms. Premier Zhu Rongji, who took office in March 1998, advocated the three major reforms noted above, and was successful in achieving a certain level of results in economic reform. He also accomplished progress by garnering China’s accession to the World Trade Organization (WTO), a long-standing issue for the nation. Currently, China is grappling with the establishment of an economic system that is more coherent with international rules.

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<sup>1</sup> Prepared using the “Economic Cooperation Program for China” by the Ministry of Foreign Affairs (released October 2001).

<sup>2</sup> This perception of the present state of affairs was first put forth in 1987 by then Secretary General Zhao Ziyang at the Thirteenth National Congress of the Chinese Communist Party, and was echoed by Secretary General Jiang Zemin at the Fifteenth National Congress of the Chinese Communist Party in 1997. A commodity-based economy and market mechanisms were to be introduced in an effort to eradicate poverty, one of the government’s primary agendas. This was the theoretical rationale for the introduction of market economy methods. The primary stage is set to last for a total of one hundred years from the establishment of the People's Republic of China in 1949.

<sup>3</sup> After the death of former General Secretary Hu Yaobang in April 1989, a student movement seeking democracy gained ground, and resulted in a sit-in demonstration in Tiananmen Square. The movement was put down when marshal law troops of the PLA (People’s Liberation Army) burst into the square in the early morning hours of June Fourth. The incident has come to be known as the “June Fourth” incident or the “Tiananmen Square” incident. In order to distinguish this incident from one that occurred at the same place following the death of Premier Zhou Enlai in 1976, it is also sometimes called the “Second Tiananmen Square” incident.

<sup>4</sup> Deng Xiaoping made these speeches in January 1992 while touring Wuchang, Shenzhen, Zhuhai, and Shanghai. The speeches called for increased economic growth and adherence to the reform and open-door policies. The tour spurred recovery in an economy that had been stagnant since the 1989 Tiananmen Square incident, and triggered the high growth that occurred after 1992. Also called the Southern Tour Speeches.

Economic growth has brought about new issues that China must address. With a population of more than 1.2 billion, more than 200 million Chinese are living in poverty on incomes of less than one dollar a day (according to World Bank sources). It lacks a social security system that can deal effectively with the growing numbers of unemployed and temporarily laid-off workers. Rapid growth has also brought about a degradation of the environment and increasing regional disparities between coastal and inland regions.

## (2) Economy

The start of the reform and open-door policies signaled the beginning of a shift away from a closed, planned economy, via the gradual introduction of market mechanisms and the opening up of trade and investment. As a result, China achieved a high average real GDP growth rate of 9.6% a year during the 21 years from 1979 to 1999. This enormous economic expansion means that China now ranks seventh in the world in terms of GDP. Deng Xiaoping's objective of increasing the GDP to four times the 1980 level by 2000 was achieved in 1995, five years earlier than targeted. The population's standard of living improved and foreign economic relationships expanded.

Though the economy did experience a temporary decline, Deng Xiaoping's Southern Tour Lectures in January 1992 served to restart and accelerate the reform and open-door policies, bringing about increased economic growth and a substantial increase in foreign investment in China. However, a byproduct of this rapid growth was an overheated economy. The GDP growth rate in 1994 was 12.6%, but this was accompanied by an inflation rate of 24.1%. In response to this situation, the Chinese government reinforced its ability to exert macroeconomic control through fiscal and monetary policies. This effort was rewarded in 1997; an 8.8% GDP growth rate was achieved while the inflation rate was held at 2.8%.

The Asian Currency Crisis in 1998 brought about a decline in external demand. The growth rate was also negatively affected by natural disasters, and a deflationary trend manifested itself. To combat this, the government worked to bolster the economy and implemented economic stimulus measures, including proactive fiscal and monetary policies that involved issuing government bonds. The rapid recovery of the Asian economies augmented the effectiveness of these measures, giving China a brighter outlook since 1999.

## (3) Society

China has the largest population of any nation in the world, and among its most important issues is the alleviation of poverty while controlling population growth and improving food supplies. Even though an affluent class has begun to emerge as a result of the continuing high economic growth, there is still a very large number of people who are facing poverty. Resolving the population problem has been made more difficult, given the graying of the society. In addition, increasingly widening regional and class disparities have accompanied the continued advances in reform and openness. As a result,

regions and societal groups that have fallen behind in growth are growing increasingly discontent. As reform of state-owned enterprises continues to progress in the years ahead, the number of people temporarily laid off or unemployed will increase. Thus, employment issues, such as providing reemployment programs and safety nets for these people, are rapidly becoming critical issues that need solutions.

Moreover, working to achieve sustainable development is creating an urgent need to find long-term ways to deal with environmental protection issues. While there are visible improvements in the natural environment occurring in the major cities, more than 30% of China is still suffering from acid rain. Other issues include preventing water pollution of major rivers and lakes, preventing air pollution, preventing pollution resulting from industrial production and waste, and increasing environmental consciousness. The ecosystem continues to deteriorate, with the most critical issues being escalating deforestation and desertification, and the yellow sand phenomenon. Population growth and increasing urbanization have brought the closely related issue of sustainable water use to the forefront of environmental concerns.

## 1.2 National development plan<sup>5</sup>

As part of its economic planning process, China has created five-year plans since 1953, establishing medium-term objectives for industrial development. These plans have continued to form the crux of China's development strategies, even after the reform and open-door policies were implemented. However, in response to the shift in economic systems, rather than directives that are central to command economies, the increasing use of medium-term developmental guidelines characterizes the current developmental strategy style. Projects that the government deems crucial are worked into the five-year plans, and are marked to receive fiscal investment and policy loans.

The following table presents a brief overview of the sixth to the tenth five-year plans. These are the plans that have been implemented since the introduction of the ODA loan, which began shortly after the reform and open-door policies were put into effect.

### Sixth Five-year Plan (1981 to 1985)

This was the first plan implemented during the period of the reform and open-door policies. The previous five-year plan had placed exaggerated importance on the speed of development, resulting in a sharp gap between supply and demand. To counter this, the Sixth Plan established a moderate target growth rate, and emphasized the development of the agricultural and consumer goods industries. The plan also incorporated societal objectives, such as the population growth rate curbs and environmental protection. Even though the targets were set conservatively, a landmark rate of growth was achieved (9.7% GDP growth rate), and actual results greatly surpassed targets.

### Seventh Five-year Plan (1986 to 1990)

Building on the initial successes achieved in economic reform during the previous period, the primary objective of this plan was to marry reform with development, and thus promote further reforms. Emphasis was placed on high growth, together with resolving bottlenecks that were occurring in agriculture, energy, materials, and transportation sectors. Near the end of the time frame of the plan, inflation became severe, resulting in a real per person consumption expenditure that did not meet targeted level.

### Eighth Five-year Plan (1991 to 1995)

Around 1988, the government was instituting belt-tightening measures in an effort to bring the overheated economy back into line. This plan was in the development phase during this period, and was influenced by these measures, resulting in the establishment of low targets. However, Deng Xiaoping's Southern Tour Lectures served as an impetus for an economic turnaround, at which point the economy returned to the high-growth track. Targets were revised upward across the board. This period saw widespread alleviation of long-term bottlenecks, which had been occurring in the energy and infrastructure sectors.

### Ninth Five-year Plan (1996 to 2000)

This plan focused on macroeconomic policy targets, more so than any of the five-year plans up to this point. New benchmarks incorporated into the plan included the urban unemployment rate, domestic money supply, and other related items. Because the Chinese economy experienced a sharp deflationary trend during this period, macroeconomic policy underwent a drastic shift. Austere fiscal and monetary policies were scrapped, resulting in proactive fiscal policies. The rate of growth continued to be low, but over the five-year period, it ultimately achieved a growth of 8.3%, just over the target of 8%.

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<sup>5</sup> Reference: Tomoo Marukawa (Institute of Developing Economies) ed., *2000-2001 Edition of the Chinese Industrial Handbook*, Sososha.

Tenth Five-year Plan (2001 to 2005)

Governmental policy continues to stress a strict adherence to market economy rules, with the following principles being emphasized.

- Preserve a balance among reform, development and stability.
- Continue transition toward focusing on the quality of growth, rather than quantity, and achieve development based on science and education.
- Enable market mechanisms to function fully, and strengthen and improve macroeconomic controls.
- Adhere to sustainable development strategy, and create a balance between population growth, resource development, improvements in the ecosystem, environmental protection and economic growth.
- Work toward reducing the developmental gap between regions in accordance with the strategic decision to extensively develop the western part of China.
- Safeguard the nation's economic stability while continuing to maintain and accomplish the open-door policy.
- For the next ten years, economic growth is expected to continue to be around 7%.

## 2. The Japanese ODA Loan Projects to China

### 2.1 Loan Conditions for China

Japanese ODA loans to China have more than a twenty-year history, starting with the signing of the first Japanese ODA loan agreement with the Chinese government in April 1980, just after the launch of reform and open-door policies. The aggregate amount of loans provided up to June 2001 reach 2,667,909 million yen, and covers 147 projects under 283 different loan agreements. Japan provides the largest amount of aid on a bilateral basis. The focus of these loans is wide-ranging, from upgrading fundamental economic infrastructure to environmental improvement projects.

To date, Japanese ODA loans to China have corresponded with the country's five-year planning cycle, and have mainly been intended to support important national projects. For this reason, each round of loans has been intended to cover a period of five to six years. Thus, the framework of loan amount and targeted projects has generally been decided by prior agreement.

### 2.2 First round to the fourth round of Japanese ODA loans

The most salient feature of the period from the first round through to the early part of the second round of Japanese ODA loans (1979 to 1987) is that it provided priority financing for upgrading the transportation infrastructure, mainly for the transport of coal. At that time, 75% of energy consumption in China was dependent on coal. China's main coal production area was Shanxi, located in the central inland region, but the main consumption regions were the coastal areas. Thus, improvement of the harbor facilities and railways, which were used for coal transportation, became one of the highest priorities.

The latter half of the second loan round to the end of the third loan round (1988 to 1995) corresponds to the period when the reform and open-door policies were being accelerated. In addition to the transportation projects underway, the Japanese ODA loans targeted water and sewerage systems and gas supply projects for Beijing, Tianjin, Xi'an, Chongqing and other cities. Also included were communication systems between cities, and fertilizer plants and infrastructure improvements in regions slated for development, such as Shanghai Baoshan, Qingdao and Hainan. The goals of the projects were either to directly improve the Chinese standard of living, or to upgrade the fundamental economic infrastructure in those regions and cities designated as important for economic development, creating wider-reaching and more diverse Japanese ODA loan projects.

In the fourth round of Japanese ODA loans (1996 to 2000), emphasis was placed on the issues of natural environment, food shortages and poverty, in addition to ongoing upgrades of the economic infrastructure. In regional terms, particular importance was attached to gaining the cooperation of the inland areas. It became obvious that economic growth was causing strains such as environmental pollution, increasing disparities between the inland and coastal regions, and food shortages caused by

population and income increases. These issues became pressing, resulting in this shift of project emphasis.

### 2.3 Reexamination of trends in economic assistance to China

The year 2000 marked the 20<sup>th</sup> anniversary of Japanese ODA loans to China, and was the year that saw the establishment of the Advisory Group on Japan's Economic Cooperation to China in the 21st Century. Recommendations were distilled from the exchange of a diverse group of opinions. The government made use of these recommendations in the preparation of the "Economic Cooperation Program for China" (Assistance Plans by Country), which was released in October 2001. The program presented a shift in priority sectors to receive assistance, from the previous priority of upgrading the infrastructure of coastal regions, toward environmental protection, improving the quality of life and developing communities in the inland regions, human resources development, system-building and technological transfers. In addition, the program mentioned that stronger efforts would be made in order to enhance mutual understanding between China and Japan. The following areas of focus were submitted.

- Cooperation for responding to environmental issues at a global level
- Support for reform and openness
- Enhancement of mutual understanding
- Support for overcoming poverty
- Support for private sector initiatives
- Promotion of multinational cooperation

### 3. Performance Analysis

#### 3.1 Overview of reviewed projects

The projects reviewed in this report are the 30 Japanese ODA loan projects that have undergone an ex-post evaluation, up to and including FY2001. The projects are all part of the first round to the third round of Japanese ODA loans, which contributed to the Sixth through to the Eighth Five-year Plans of China. Of the total amount of Japanese ODA loans, three-quarters of the loans contributed to projects in the transportation sector, mainly railways and ports. A table listing the project name, sector, subsector, date of loan agreement (L/A), construction period, and year of evaluation of all the projects under review has been included in the appendix.

As shown in Table 1, the 30 total projects can be divided by sector as follows: 21 transportation projects, (8 railway, 8 port, 4 bridge and 1 airport projects), 2 communications projects, 3 electricity and gas projects, 3 social services projects (water supply and sewerage systems), and 1 mining and manufacturing project (industry).

Table 2 shows that, by year, there were 5 projects in the first round of Japanese ODA loan agreements (1979 to 1984), 9 projects in the second round (1984 to 1989), and 16 projects in the third round (1990 to 1995).

Table 1: Reviewed projects and amount of Japanese ODA loans by sector

Sector	Sub-sector	Number of projects	Japanese ODA loan (hundred million yen)
Transportation	Railways	8	3,614 (49.9%)
Transportation	Ports	8	1,621 (22.4%)
Transportation	Bridges	4	216 (3.0%)
Transportation	Airports	1	53 (0.7%)
Communications	Communications	2	399 (5.5%)
Gas and electricity	Multipurpose dams	1	181 (2.5%)
Gas and electricity	Gas	1	130 (1.8%)
Gas and electricity	Power plants	1	129 (1.8%)
Social services	Water supply, sewerage and sanitation	3	201 (2.8%)
Mining and manufacturing	Industry	1	700 (9.7%)
	Total	30	7,245 (100%)

Table 2: Reviewed projects and amount of Japanese ODA loans by year

Round	Number of projects	Japanese ODA loan (hundred million yen)
First round of the ODA loans (1979 to 1984)	5	2,650
Second round of the ODA loans (1984 to 1989**)	9	2,778
Third round of the ODA loans (1990 to 1995)	16	1,817

\* Based on date of loan agreement (the earliest in cases of multiple loan agreements).

\*\* The first and second rounds of the ODA loans overlap in 1984.

### 3.2 Analysis of the five primary evaluation criteria

This chapter consists of a performance analysis of each projects based on evaluation reports. The framework for analysis consists of five primary criteria. These five primary evaluation criteria are based upon the “Principles for Evaluation of Development Assistance” established by the Development Assistance Committee of the Organization for Economic Co-operation and Development (OECD/DAC) in 1991, which evaluates a project from the standpoint of project relevance, efficiency of implementation, effectiveness, impact and sustainability. To perform a more detailed analysis for this review, each of the five parameters was broken down into in total 23 “evaluation check items” listed in Table 3.

Table 3: The Five Evaluation Criteria and Evaluation Check Items

<b>Project Relevance</b>	Does the goal and the approach to the project match the priorities and policies of the target group, counterpart country and the donor?
<b><u>A1. Consistency with Development Policy and Priority Issues</u></b>	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?
<b><u>A2. Relevance of Project Scope</u></b>	Was the project plan (scope and approach) at the time of appraisal judged appropriate to achieve the overall and project goals?
<b><u>A3. Relevance of Project Scope Alteration</u></b>	In cases where project scope was altered after the project was implemented, were the alterations relevant?
<b><u>A4. Relevance of Project Goals at the Time of Evaluation</u></b>	In cases where terms and conditions were altered after the planning stage, are the project goals still valid at the present?
<b>Efficiency of Implementation</b>	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?
<b><u>B1. Completeness of Output</u></b>	Was the output (project results) completed as planned?
<b><u>B2. Implementation Schedule Efficiency</u></b>	Were there any problems in the project that caused the implementation schedule to exceed original plans?
<b><u>B3. Project Cost Efficiency</u></b>	Were there any problems in the project that caused the project costs to exceed original plans?
<b><u>B4. Project Implementation System</u></b>	Was the system appropriate for decision-making, monitoring and troubleshooting during the project?
<b>Effectiveness</b>	Achievement of Project Purpose. To what extent did the project output achieve its purpose?
<b><u>C1. Output Utilization</u></b>	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.)
<b><u>C2. Project Goal Realization</u></b>	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)
<b><u>C3. Achievement of EIRR</u></b>	Is the Economic Internal Rate of Return sufficient when compared with initial project values?
<b><u>C4. Effect of Technical Assistance</u></b>	Were the training and technological instruction component effects sufficiently realized?
<b>Impact</b>	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.
<b><u>D1. Contribution to Overall Goal Achievement</u></b>	To what level were the original overall goals of the plan achieved, and to what extent did the project contribute to their realization.
<b><u>D2. Impact on Policy and Institutional System</u></b>	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?
<b><u>D3. Socio-Economic Impact</u></b>	What kind of impact was there on the regional society and economy? Was the impact positive or negative?
<b><u>D4. Impact on Technology</u></b>	What contribution did the project make to technological innovation and improvement in the country in question?
<b><u>D5. Impact on Natural Environment</u></b>	What impact was there on the regional environment? Was the impact positive or negative?
<b><u>D6. Resident Relocation and Land Acquisition</u></b>	What impact was there on regional society in terms of resident relocation and land acquisition?
<b>Sustainability</b>	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?
<b><u>E1. Output Condition</u></b>	Is the output (project results) being maintained and operated appropriately? Is facility in good condition?
<b><u>E2. Operation and Maintenance System</u></b>	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?
<b><u>E3. Financial Resources for Operation and Maintenance</u></b>	Are sufficient financial resources available for appropriate operation and maintenance? Are those resources expected to remain available in the future?
<b><u>E4. Continuation of Needs</u></b>	Is it expected that need for the project will continue in the future?
<b><u>E5. External Factors</u></b>	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

#### (1) Consistency with Development Policy and Priority Issues

The majority of the thirty projects were judged to be satisfactorily relevant to governmental development policies or priority development issues. This is due to the fact that the majority of the Japanese ODA loans to China were extended for projects deemed important in the country's five-year development plans, and is verified by the fact that the central government gave priority to allocating resources to the projects in many cases in order to meet completion dates.

Note that even for projects in which no mention is made in the ex-post evaluation report of relevance to upper development policies and priority issues, it is possible to speculate a high degree of relevance to development policies, judging from their connection to similar projects.

#### (2) Relevance of Project Scope

At the time of appraisal, the project plan and scope of 60% of the projects were relevant. However, nearly 30% of the projects experienced problems, which influenced project implementation or results. The problems in project planning can be separated into two types, as shown below. There was insufficient information for the remainder of the projects to determine relevancy.

##### 1) Low degree of accuracy in planning

A low degree of accuracy in the preplanning phase of four of the projects resulted in major revisions to the plan itself or the amount of construction during implementation. Three of the projects suffered from cost overruns or construction delays. For example, during the Beijing - Qinhuangdao Railway Construction Project (evaluated March 1990), study, design and construction were undertaken at the same time. This "three-pronged style" of Chinese construction led to significant increases in the amount of construction work and substantial cost overruns<sup>6</sup>. Also, it was indicated in another project that preliminary studies regarding resident relocation were insufficient<sup>7</sup>.

##### 2) Inadequate forecast of demand

Accurate forecasts of demand were lacking in several projects, which led to considerable revisions in project scope and a decline in facility utilization efficiency. For example, in the Qinhuangdao Port C and D Berths Construction Project (evaluated March 1997), a special berth for timber was constructed. However, following its completion, the volume of timber handled dropped

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<sup>6</sup> The other two projects are the Beijing Sewage-Treatment Plant Construction Project (evaluated March 1997), and the Wuhan - Tianhe Aerodrome Construction Project (evaluated June 1997, p.39).

<sup>7</sup> Guanyinge Multipurpose Dam Project (evaluated March 2000)

drastically, and the special equipment for handling timber became idle. The ex-post evaluation report observed that, even though this change in demand was due to a variety of external factors that were hard to predict, the method used to forecast demand was too simple to take the long term into consideration.

### (3) Relevance of Plan Alternation

Approximately 80% of the projects underwent some degree of revision, the majority of which were relevant. The revisions in the bulk of the cases were either due to geographical or technical conditions of the site, or to recipient needs (or revisions in needs) becoming clear during the implementation stage. Other reasons for plan revisions included changes in primary plans, additions to project scope in order to effectively use all portions of the loans, or revisions in the design standards.

However, there were a few examples of projects where the review process for plan revisions was not appropriate. During the Shijiusuo Port Construction Project (evaluated March 1988), the national cargo transportation plan was revised, and construction of a special berth for iron-ore was postponed. Instead, the plan was revised to augment the handling capacities of the coal berths. This decision was reached following a study of only the technical issues involved, and did not include reviews of the demand forecast for coal, nor a study of the economical efficiency of the project. In addition, there were some cases where communication with JBIC was poor during project plan revisions. However, the plan revisions themselves can be deemed necessary and appropriate.

Also, once the Lianyungang Port Expansion Project (evaluated March 1998) got underway, it became clear that the import volume of timber had dropped severely. However, the initial plan to construct a berth for timber was not altered. The ex-post evaluation report indicates that the initial plan should have been reviewed once it had become clear that the demand had changed

### (4) Relevance of Project Goals at the Time of Evaluation

At the time of evaluation, almost all the projects were deemed to remain relevant to project objectives. These projects had a higher level of utilization than originally planned, and even in projects in which utilization rates were low, a trend of increasing utilization rates has been confirmed, creating the expectation of higher utilization in the future.

### 3.2.2 Efficiency of Implementation

#### (1) Completeness of Output

In 80% of the whole projects, the output was attained as planned at the time of evaluation. For the remaining 20% of the projects, there was some reason that a portion of the output (but not the main portion) was not attained as initially planned by evaluation time. However, following the expiry of Japanese ODA loan period, China continued the construction using domestic currency funds. The following problems were found.

It proved to be impossible to undertake the Beijing - Qinhuangdao Island Railway Enhancement Construction Project (evaluated September 1993), without obstructing operations of the existing line, which resulted in postponing the construction of some of the station yards. At the time of evaluation of the Urban Gas Project (evaluated March and October 1996), nearly half of the planned pipe network in Harbin was not yet completed, due to an inability to procure the increased amount of local currency funds quickly enough, as well as the delayed construction of the residential area that was to benefit from the project. Furthermore, there was an increase in the local currency costs of the Ningpo City portion of the project, a deterioration of profitability, and a worsening quality of supplied coal. These factors led to the discontinuation of the coal gas project, and a decision to shift to an urban gas project using LPG (not a project for Japanese ODA loans). This ultimately resulted in the project not being finished. In the Urban Water Supply Project (ten cities) (evaluated December 2000), the water quality in Zhengzhou necessitated additional filtration equipment, and the project was not completed at the time of evaluation. In the Fujian Province Zhang Quan Railway Construction Project (evaluated March 2000), the local currency payments of the project were inadequate, which caused a portion of the branch lines to be unfinished.

Additionally, there were indications that there had been the possibility of problems with quality control during the road construction phase in both the Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001) and the Hefei - Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2000).

#### (2) Implementation Schedule Efficiency

Within the target projects, only 60% of them were completed with delays of under a year. The Slightly more than 30% of projects were delayed from one to three years, and in just under 10% of the projects, delays of over three years occurred. Nearly all sectors experienced delays. The following are the reasons for delayed completion in twelve of the projects, where completion was delayed for longer than one year<sup>8</sup>.

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<sup>8</sup> The total number of projects listed exceeds twelve, because in some cases a project was delayed for multiple reasons.

• Expanded scope – Plan revisions	6 projects
• Insufficient domestic funding	5 projects
• Technological and implementation problems	4 projects
• Delays due to procurement procedures	3 projects
• Effects of the Tiananmen Square incident	2 projects

There were two projects whose completion was more than five years behind schedule, but in both cases, these projects required additional time due to domestic funding shortfalls. This was due to the major price increases which occurred at that time, resulting in increased local currency costs.

Although the start of construction was delayed for various reasons in several cases, the implementation agencies made efforts to shorten the construction period. Thus, delay was not as serious as it could have been. For example, the Hengyang - Guangzhou Railway Transportation Reinforcement Project (evaluated September 1993) fell greatly behind schedule, due to various construction problems. These included the temporary discontinuation of drilling of the Dayao Mountain tunnel, as a result of domestic funding cutbacks brought about by the unforeseen economic stagnation. However, once the required domestic funding had been secured, all of the lines were opened on time. Following the start of construction on the Hengshui - Shangqiu Railway Construction Project (evaluated March 2000), it was decided that a portion of the major railway line between Beijing and Hong Kong's Jiulong would be incorporated into the project. This resulted in major revisions to the project plan, including redesigning it to be a multiple-line project. However, the central government was eager to have the project completed in time for the reversion of Hong Kong to China's control. This gave the project a powerful push, and schedule control was firmly maintained, resulting in a completion date only nine months behind the original plan. Other examples of projects where the construction period was drastically shortened include the Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), the Urban Gas Project (evaluated March and October 1996), and the Second Wuhan Yangtze River Bridge Construction (evaluated March 2001).

### (3) Project cost efficiency

For 60% of all the projects, the aggregate project costs (total project costs denominated in foreign currency) fell within the projected costs or had overruns of 10% or less.

No projects overran the planned foreign currency project costs. The main reason for this is the continued appreciation of the yen.

However, in contrast, most of the projects incurred large local currency cost overruns, in one case by more than five times the planned amount. Local currency costs doubled for nearly half of the projects, which is what led to the steep increase in the aggregate project costs. However, the effect of the local currency overruns on the aggregate project costs denominated in foreign currency was cancelled out by the continued substantial appreciation of the yen.

The reasons for the domestic currency project cost increases (in the order of frequency) were;

unforeseeable rapid rise in inflation, increased amount of construction due to project scope expansion or inaccurate planning, and underestimated or mistakes in estimated land acquisition costs.

For several of the projects, the substantial domestic currency cost overruns have had a deleterious effect on either project implementation or efficiency. For example, the considerable increase of the domestic currency cost of the Urban Gas Project (evaluated March and October 1996) was one of the main reasons that construction of the end of the pipe network in Harbin was not completed. Thus, the planned number of intended recipients of the project was not met.

In contrast, of the projects designated to be of national priority, there were some that were completed as planned regardless of sharp cost overruns, due to preferential budget allocations. For example, the scope of the Hengshui - Shangqiu Railway Construction Project (evaluated March 2000) was expanded to include multiple lines, resulting in domestic currency costs of more than four times those originally planned. However, the support of the central government meant that the project was completed only nine months behind schedule. Also in Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), Urban Gas Project (evaluated March & October, 1996), Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001), construction schedule were greatly shortened.

#### (4) Project implementation system

Evaluation of the project implementation system was by and large positive. Approximately three-quarters of the projects were deemed to have had sufficiently good implementation systems. However, in China, there are many examples of new agencies being created to implement specific projects, which often makes implementation systems complicated. Also, as evidenced in the Hengyang - Guangzhou Railway Transportation Reinforcement Project (evaluated September 1993), there were some projects where the implementation system was reorganized during implementation, in response to a lack of appropriate progress or other issues. Nevertheless, the capability of these systems is generally high. There were no reported deficiencies in schedule control or technical abilities. In many of the projects<sup>9</sup>, the implementing agencies were deemed to have shown outstanding performance in shortening construction time, and prompt procurement of domestic currency funding to cover cost increases.

The performance of the Chinese implementation agencies was deemed to be somewhat problematic in about 10% of the projects. The following issues were indicated; ambiguous contractor selection process, poor communication with JBIC regarding revisions to the project plans, and an inability to secure domestic currency funding at the appropriate time. However, on the whole, no critical problems occurred during project implementation.

There were no projects where major problems with the performance of either the contractors or consultants were reported.

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<sup>9</sup> The Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), the Urban Gas Project (evaluated March and October 1996), the Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001), the Nanning - Kunming Railway Construction Project (evaluated March 2001), etc.

### 3.2.3 Effectiveness

#### (1) Output utilization

The output (facilities, etc.) of the majority of the projects was judged to have a satisfactory degree of utilization, based on operation and effect indicators. While there are periods in which the utilization rates were lower than planned in the remaining projects, it is not a particular cause for concern as these utilization rates are increasing annually. None of the projects had significantly low utilization rates, and so none were identified as problematic.

The projects with utilization rates below planned levels were mostly in the transportation sector. The volume of cargo handled in one-third of the railway and port projects was lower than anticipated. There were some instances where the transported and handled volume of coal, projected to be the principal cargo, did not increase as expected. This occurred as well with the amount of timber and cereals handled at the ports<sup>10</sup>. One of the main reasons for this is that a decline in transport demand itself occurred, due mainly to factors such as changes in the international marketplace. However, there were also instances where constraints in the related infrastructure were indicated as causative factors. Examples include a project where main railway lines construction finished, but incomplete feeder lines were incomplete (Fujian Province Zhang Quan Railway Construction Project, evaluated March 2000), and ports where the loading facilities were completed on time, but completion of the facilities of receiving port were delayed (Shijiusuo Port Construction Project, evaluated March 1988). Of the four bridge-building projects, two of them experienced lower traffic volume than expected<sup>11</sup>. This was due to delays in completion of the feeder roads to the bridges.

For projects outside the transportation sector, it was reported that at the time of evaluation, the gas sales volume was running at only 6 to 24% of the production capacity in three of the cities (excluding Ningpo City) in the Urban Gas Project (evaluated March and October 1996)<sup>12</sup>. The demand for gas in each city was high, however, so gas sales volume is expected to increase in the future.

#### (2) Project Goal Realization

The degree of project objective attainment was ascertained by the performance of operation and effect indicators, as well as the qualitative remarks in the ex-post project evaluation report. On the

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<sup>10</sup> Shijiusuo Port Construction Project (evaluated March 1988), Yanzhou-Shijiusuo Railway Construction Project (evaluated March 1988), Qinhuangdao Port C and D Berths Construction Project (evaluated March 1997), Lianyungang Port Expansion Project (evaluated March 1998), Baoji - Zhongwei Railway Construction Project (evaluated March 1998), Qinhuangdao Port 4th stage Coal Terminal Construction Project (evaluated March 2001)

<sup>11</sup> The Huangshi Yangtze River Bridge Construction Project (evaluated March 2001), Hefei - Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2000)

<sup>12</sup> There were multiple reasons. It was the first year of production, and in Guiyang, construction of the piping to households using gas was incomplete. In Harbin, insufficient domestic funding and incomplete construction of the targeted residential areas meant that only half of the pipe network could be completed. In Fuzhou, production was curtailed due to decreasing profitability concerns resulting from price increases in raw coal. Also in Fuzhou, the profitability of the coal gas project was poor, so a new LPG gas plant was built. In addition, in Ningpo City, a decision was made to abandon the coal gas project, and an LPG gas project was begun instead.

whole, there was quite high degree of attainment of project objectives.

Projects that were deemed to have satisfactorily attained their objectives were either projects whose operation and effect indicators were higher than planned, those where they were lower than planned but were showing significant improvement, or those that were noted at the time of appraisal as sufficiently attaining project objectives from a comprehensive assessment. Ninety percent of the projects were deemed as having sufficiently attained project objectives.

The remaining projects were judged to have attained a portion of the objectives. Of these, either the output of the project was partially incomplete or the output utilization rate was low. The Lianyungang Port Expansion Project (evaluated March 1998) was undertaken mainly to improve coal transport capacity. However, the additional berths built exclusively for cereals and for timber did not reach their original objectives, given that they were seldom used for their original purpose as a result of the decrease in demand for cargo transportation. In the Urban Gas Project (evaluated March and October 1996), in addition to the fact that the Ningpo City portion of the project was not completed, both the gas sales volume in the other three cities and the number of intended recipients of the project fell below plan. The domestic currency funds were insufficient for the Fujian Province Zhang Quan Railway Construction Project (evaluated March 2000). This caused delays in the construction of the branch lines, which led to a lower than expected number of trains in operation. However, it is expected that the utilization rates of these three projects will increase in the future, and it is anticipated that they will sufficiently attain their objectives in the end.

### (3) Achievement of IRR

A financial internal rate of return (FIRR) was noted in 60% of the projects, while a third of them had a figure for the economic internal rate of return (EIRR). In all, more than 70% of the projects had either a FIRR, an EIRR, or both. Of these, nearly half were deemed to have attained sufficiently high IRRs when compared to target figures<sup>13</sup>.

The EIRR performance figures (recalculated figures) ranged from 3.7% to 46.0% with a simple average of 14.3%. There was one project whose EIRR figure exceeded the target value. This was the Guanying Multipurpose Dam Project (evaluated March 2000), whose 15.5% EIRR (3% higher than planned) was heavily influenced by the fact that it helped to prevent damage in the 1997 flood. There were no projects whose EIRR were below 30% of target.

The actual FIRR figures (recalculated figures) ranged from minus 2.9% to 52.1% with a simple average of 6.6%. There were three projects whose FIRR figures exceeded target values. In both the Shenzhen Dapeng Bay Yantian Port First Phase Project (evaluated March 1999) and the Shijiu Port Second Phase Construction Project (evaluated March 2000), the amount of cargo handled was higher than planned, which means that their FIRRs 13.6% and 8.1% respectively, also surpassed target values.

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<sup>13</sup> In principle, the EIRR performance was used as the criterion for evaluation purposes; however, when the EIRR had not been recalculated, the FIRR was used (see Table 3 on pages 11 - 12)

In the Beijing - Shenyang - Harbin Telecommunication Systems Project (evaluated September 1999), the final FIRR of 52.1% was more than four times better than targeted, due to procurement of equipment and materials at cheaper than expected cost, and the application of new technology that greatly increased the telephone capacity. However, there were five projects whose actual FIRR values were below 30% of targeted figures (two port projects, one bridge project, one railway project and one gas project)<sup>14</sup>. This was due to: increased project costs, delayed construction, higher than expected administrative and maintenance expenses, and below target operational performance (gas sales volume, traffic volume, cargo handling volume).

For the railway and port projects, transport and cargo fares were regulated to stay below the inflation rate as part of China's anti-inflation measures. Given this, even if the target EIRR was attained, the FIRR would be far less than planned. For example, in the Zhengzhou - Baoji Railway Electrification Project (evaluated March 1998), the 46% EIRR fulfilled the target, but the FIRR was only 2%. In the Lianyungang Port Expansion Project (evaluated March 1998), the EIRR reached the targeted 13.5%, but the FIRR was negative 2.9%.

#### (4) Effect of technical assistance

In the ex-post evaluation reports for all thirty projects, there were four projects that contained specific references to the effectiveness of technical assistance. In all four cases, technical assistance was deemed to be effective in order to introduce a new technology.

- During the Beijing - Qinhuangdao Railway Construction Project (evaluated March 1990), seminars and training sessions were conducted in order to demonstrate the use of new fiber-optic technology.
- Regarding the construction of the West Large Levee in the Lianyungang Port Expansion Project (evaluated March 1998), a Japanese consultant provided technical cooperation, undertook an in-depth study, and proposed a new construction method, which was later implemented.
- In the Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), Chinese people were invited to a technical training in Japan in order to introduce a new technology. This has contributed to an improvement of the sustainability of the project. An exchange of technology occurred during the Urban Water Supply Project (ten cities) (evaluated December 2000), when study and training groups were dispatched to Japan and Switzerland.

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<sup>14</sup> The Urban Gas Project (evaluated March and October 1996), the Nanning - Kunming Railway construction Project (evaluated March 2001), the Hefei - Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2000), the Lianyungang Port Expansion Project (evaluated March 1998) and the Qinhuangdao Port 4th stage Coal Terminal Construction Project (evaluated March 2001)

### 3.2.4 Impact

#### (1) Contribution to Overall Goal Achievement

This was evaluated from two perspectives: the degree to which primary objectives were attained, and how the projects contributed to their attainment. However, in half of the projects, primary objectives were not clearly established, or the degree of contribution or relevance of the project results to the primary objectives was difficult to ascertain. Therefore, this review did not touch upon these projects. .

For the remaining projects, two-thirds showed a high degree of contribution to the attainment of the primary objectives. The railway sector projects were rated especially high, with five out of eight projects demonstrating a large contribution. Four of those projects contributed very highly to improving coal transportation. In addition, two water supply and sewerage projects, and one project in each of the bridge, airport and industrial sectors also widely contributed to the attainment of the primary objectives.

However, there were three bridge projects and one gas project that were deemed to have not made major contributions to the attainment of the primary objectives. The three bridge projects received low evaluations, either due to the fact that traffic volumes were far below target, or the fact that traffic congestion was not alleviated because of sharp increases in annual traffic volume. In the Urban Gas Project (evaluated March and October 1996), the number of recipients households of the project was much less than the planned, resulting in a low evaluation.

There were no projects that were deemed as providing very few contributions to the attainment of the primary objectives.

#### (2) Impact on Policy and institutional systems

There was no instance in which any of the ex-post evaluation reports noted that a project had impacted on policy or organization systems. While there were many instances where projects in the transportation sector required the establishment of new organizational systems for project implementation, and administration, operation and maintenance following completion, it is not possible to state categorically that this was an impact (or an indirect effect) of the project.

#### (3) Socio-economic impact

Some sort of impact on society and economy should be evident in all projects. However, only three-quarters of the ex-post evaluation reports made mention of any such effects. Likewise, there was insufficient explanation of any causal relationship between project implementation and impact, and in many instances, what was noted was merely speculation. This is due in part to the fact that there are numerous types of possible impacts on society and the economy and many external factors, making it

difficult to obtain objective verification within the scope of a limited study.

In projects where some mention was made of these impacts, they were all deemed to be positive. Other than the resident relocation and land acquisition impacts (discussed later), there were no undesirable impacts mentioned.

Instances where impacts were noted are listed below.

#### 1) Impact on industrial and regional development

Heightened economic and regional development, including development of coal and tourism, were the main impacts reported for projects in the transportation sector<sup>15</sup>.

Transportation capacity limitations were causing constraints on development of coal in the Datong region, which was subsequently lessened by the Beijing - Qinhuangdao Railway Construction Project (evaluated March 1990). In addition to this expansion of coal development, the project's direct impact on augmenting coal transport capacity helped to lessen inadequate supply of coal to consumption areas, which contributed greatly to China's industrial development<sup>16</sup>.

Two projects were reported to have had an impact on the development of tourism. The seawall built as a part of the facilities improvement during the Lianyungang Port Expansion Project (evaluated March 1998) helped to make vehicles' access to Lian Island possible. This opened up the island to increased tourism, and improved the islanders' standard of living. The reservoir created for the Guanying Multipurpose Dam Project (evaluated March 2000) became a scenic attraction, expanding the region's tourism resources.

There were ten projects in the transportation sector (4 railway projects, 2 port projects, and 4 bridge projects), which had farther-reaching impacts on economic and/or regional development in the projects areas, including reports of increased industrial or urban development, increased land values, increased sophistication of industrial structure (increased secondary and tertiary industries), and job creation. Local governments of areas near several of these projects or along the train lines were spurred into action, and created a variety of proactive developmental plans, or set up economic development zones<sup>17</sup>.

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<sup>15</sup> As of 1998, the ODA loans have been used to provide around 35% (4,600 kilometers) of China's total electrified railway extensions (approximately 13,000 kilometers) and to build roughly 13% (60) of the large 10,000 ton+ berths in Chinese ports (approximately 470 all told).

<sup>16</sup> Under Chairman Mao, it was said that "electrical production was determined by the supply of coal, and the resulting supply of electricity in turn determined the industrial output." Thus, the economy as a whole was defined by coal and electricity constraints. Even now, one of the biggest obstacles to China's economic development is the energy shortage. In China, where a great distance separates the coal production areas and coal consumption areas, an increase in coal production is limited by coal transportation capacity. Thus, coal transportation capacity itself is the bottleneck to increasing coal production volumes. Half of all coal transportation currently depends on railways. (1995) Limitations on coal transportation are easing, but even so the problem of coal transport will potentially be the main obstacle to any large-scale increase in coal supply (from "Study on Northeast Asia's Energy and Security: Perspectives and Issues Related to China's Supply and Demand for Energy" – NIRA Research Report No. 19990125, etc).

<sup>17</sup> Shijiusuo Port Construction Project (evaluated March 1988), Baoji - Zhongwei Railway Construction Project (evaluated March 1998), Hengshui-Shangqiu Railway Construction Project (evaluated March 2000), Hefei - Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2001)

## 2) Impact on foreign capital investment

It was reported that some of the regions created an attractive investment environment by improving infrastructure, such as transportation and water supply and sewerage systems, thereby greatly accelerating the inflow of foreign capital.

- The Wuhan - Tianhe Aerodrome Construction Project (evaluated June 1997), as well as other projects related to water purification plant upgrades, telephones, and the Second Wuhan Yangtze River Bridge Construction Project (an ODA loan project), were all implemented at approximately the same time, and helped to greatly enhance the investment climate of Wuhan City. This served to stimulate the formation of joint ventures in Wuhan City with leading Western food manufacturers and automobile manufacturers.
- The Qingdao Development Project (Water Supply And Sewerage) (evaluated March 1999) played an important role in the economic development with foreign capital introduction in the northern area of the Qinhuangdao Economic and Technological Development Zone.. Although this zone was established in 1985, the water supply and sewerage systems of the northern section were not completed, which caused many obstacles to development, according to the Development Zone's Administrative Committee. However, following the completion of the Japanese ODA loan project, dramatic improvements were seen in the development of businesses, especially in the high-tech and export processing industries. Not only did this help to create a new international city, the region was able to supply other areas with emergency water supplies during a period of drought. Thus, this project served to facilitate business activities and investment of development overall.

## 3) Impact on residents' standard of living

Some of the reported impacts on residents' standards of living include expansion of livelihood areas (transportation projects), and improved sanitary conditions (water and sewerage system projects)<sup>18</sup>. However, no specific examples or basis for these statements were given.

## (4) Impact on technology

This section discusses evaluation of technological impacts outside the scope of the project. It was surmised that many of the projects had some form of technological transfer or the transfer of

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<sup>18</sup> Hengshui-Shangqiu Railway Construction Project (evaluated March 2000), Urban Water Supply Project (ten cities) (evaluated December 2000), Qingdao Development Project (Water Supply And Sewerage) (evaluated March 1999).

know-how, but there were few ex-post evaluation reports where this was made clear. The RCD<sup>19</sup> construction method, developed by Japan's Ministry of Construction was used for the first time in China during the Guanying Multipurpose Dam Project (evaluated March 2000). The same construction method was later adopted by the implementing agency in building the Hebei Dam. Technology including the sheet pile structure<sup>20</sup> technology for building ports was learned by the Chinese during the construction of the Shenzhen Dapeng Bay Yantian Port First Phase Project (evaluated March 1999).

#### (5) Impact on Natural Environment

While approximately 70% of the projects reported some form of environmental impacts, nearly half the cases reported a beneficial impact or no particular negative environment impact.

Positive effects were reported in the Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), and in the Qingdao Development Project (Water Supply And Sewerage) (evaluated March 1999). These projects were reported as improving the water quality in those areas. The Urban Gas Project (evaluated March and October 1996) converted the local domestic fuel source from coal to gas, and as a result, trial calculations revealed that atmospheric pollutants such as sulfur dioxide SO<sub>2</sub> in Fuzhou were sharply reduced.

However, there were also projects that were reported as having less desirable impacts. It should be pointed out that these were all relatively minor or it cannot be said for certain that they were a result of the Japanese ODA loan projects. As an example, it was reported that during the Urban Water Supply Project (ten cities) (evaluated December 2000), an amount of sludge was directly discharged into the river during the water purification process. Although the direct discharge was inherently undesirable, it was unavoidable at that particular stage of the project<sup>21</sup>. Also, during three of the bridge projects, air and noise pollution along the roadways exceeded environmental standards. However, a large percentage of this was due to an increase in traffic, so it is perhaps possible to say that this is an urban problem rather than the result of the Japanese ODA project<sup>22</sup>. Two of the port projects were noted to have caused dust pollution, both during the project and once it had been completed<sup>23</sup>.

#### (6) Resident resettlement and land acquisition

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<sup>19</sup> Roller Compacted Dam Concrete Construction Method: In this method, a roller is used rather than a vibrator when compacting concrete.

<sup>20</sup> A construction method whereby a quay is constructed by driving metal piles in close contact to form a continuous interlocking wall.

<sup>21</sup> Construction of a sludge treatment facility was planned, but was postponed due to the fact that the construction of the sewage system took priority. Furthermore, the sludge that is produced as part of the water purification process is made up of elements that are originally present in river waters in any case. There were no harmful components released.

<sup>22</sup> Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001), Huangshi Yangtze River Bridge Construction Project (evaluated March 2001), Second Chongqing Yangtze River Bridge Construction Project (evaluated March 2001)

<sup>23</sup> Shenzhen Dapeng Bay Yantian Port 1<sup>st</sup> Phase Project (evaluated March 1999), Qinhuangdao Port 4th stage Coal Terminal Construction Project (evaluated March 2001)

Approximately 40% of the projects, mainly those in the transportation sector, made clear mention of the fact that resident resettlement and land acquisition had occurred. Residents who were resettled were given new homes, jobs and resettlement compensation. In the majority of cases, the resettlements were handled appropriately without any major problems.

The Baoji - Zhongwei Railway Construction Project (evaluated March 1998) required the largest scale of resident resettlement, as land acquisition targeted approximately 37,000 households. According to the ex-post evaluation report, the majority of the inhabitants were agreeable to the acquired land proposal, and no special problems occurred.

Approximately 7,500 households were resettled for the Guanyingge Multipurpose Dam Project (evaluated March 2000). The State Council of China adopted a policy in 1991, promoting the principle of “Developmentally-focused Resettlements,” whereby the standard of living of the resettled citizens would be improved beyond previous levels. Issues related to improving the residents’ living conditions following the move were also to be considered, as was providing active support to encourage industrial activity. The Guanyingge project followed these principles, and the majority of the resettlement activity took the form of mass resettlements, which made the reestablishment of daily life easier. Residences, roadways, water, electricity and telecommunication systems were prepared, and alternate farmland or employment at factories was also provided. As a result, 80% of the resettled residents expressed satisfaction with the move, and 50% stated that their income levels had risen as a result of the transfer. Thus, the target of “Developmentally-focused Resettlements” was, on the whole, achieved. However, interviews following the move revealed that approximately 20% of the residents had suffered a drop in income. In response, the government of Benxi Province undertook measures to improve the land, provided new farmland, created tax reductions and exemptions for new and existing tertiary industry businesses, all in an effort to improve the living conditions of the resettled citizens.

### 3.2.5 Sustainability

#### (1) Output condition

In general, the current state of outputs are good, and there were few problems with operation and maintenance. The present output of nearly 80% of all projects (the physical or operational conditions of the facilities) was reported to be good. There were, however, five projects in which problems were reported.

- In two bridge projects, the surfaces or the camber of the roads leading to the bridges were reported as being damaged or partially collapsed, or the bridges pavement were reported as cracked. Poor quality control during construction or inadequate water drainage systems most likely caused these problems<sup>24</sup>.
- A trouble occurred with a car dumper connected to a coal freight car in the Shijiusuo Port Construction Project (evaluated March 1988), resulting in a decline of operational efficiency rate for the freight car. The car dumper in question was equipped with precision and state-of-the-art technology, but when the bid documents for the device were being prepared, the various specifications of the freight car were not clearly understood. Another potential cause for the trouble was insufficient technical training of the Chinese workers.
- In the Wuhan - Tianhe Aerodrome Construction Project (evaluated June 1997), a lack of technical training of the Chinese resulted in the inability to use a portion of the boarding bridge for six months.
- In the Urban Gas Project (evaluated March and October 1996), coke became stuck in the coke oven built in Fuzhou, causing a deterioration of the operating efficiency.

#### (2) Operation and maintenance system

The operation of the projects can be broadly categorized into the following two types: those directly operated by the government and by enterprises that received financial investment from the government. The majority of the railway projects fall into the first category, as do the bridge projects constructed by China's Ministry of Construction<sup>25</sup>, the Guanying Multipurpose Dam Project (evaluated March 2000), and the Beijing Sewage Treatment Plant Construction Project (evaluated

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<sup>24</sup> Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001), Hefei - Tongling Highway and Tongling Yangtze River Bridge Project (evaluated March 2000)

<sup>25</sup> Huangshi Yangtze River Bridge Construction Project (evaluated March 2001), Hefei - Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2000)

March 1997). The administration of the bulk of the remaining projects was undertaken by financially independent enterprise. Some of these enterprises included joint ventures with foreign capital<sup>26</sup>. In port projects undertaken by the Ministry of Transportation, the Ministry established a Port Service Agency at each port, which oversaw port and harbor operations as a whole, while portions of the responsibilities were consigned to enterprises established under the umbrella of the Harbor Agency.

Almost one-third of the administrative bodies of the projects (including those of both governmental and corporate administration) were newly established in conjunction with the Japanese ODA loan projects.

The operation and maintenance systems were generally good. These systems were ascertained to be suitable in 90% of the projects, and no special problems were noted. For example, for projects in the railways and port sectors, of which there were many, the number and quality of employees needed for operation and maintenance are generally adequate, with employee recruitment and training being undertaken as necessary. Routine maintenance, periodic inspections and repairs are undertaken according to technical standards and manuals established by the central government (Ministry of Railways, Ministry of Communication). Thus, the facilities themselves are in good repair. Similar technical standards and manuals exist for the port, telecommunications, multipurpose dams, and water and sewerage sectors, and their use has been confirmed. In addition, some of the financially independent enterprises have been strengthening their organizational structure, increasing project efficiency, and expanding into related businesses.

Nonetheless, some problems have been observed. The ex-post evaluation reports of the three projects listed below noted these concerns regarding the operation and maintenance systems.

- In the Zhengzhou - Baoji Railway Electrification Project (evaluated March 1998) and the Baoji - Zhongwei Railway Construction Project (evaluated March 1998), there was a concern regarding the scarcity of electrical engineers. The ex-post evaluation report indicated that the technical abilities of China's Ministry of Railways were generally satisfactory, while there was an insufficient number of workers who possess adequate skills in electricity-related technology. Thus, the reports suggested that the project scope should have included training and technological transfer.
- Operation and maintenance of the Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001) was undertaken by a limited company newly established within the jurisdiction of Wuhan City. An organizational system had been established, but once cracks began to appear in the road surfaces, it was deemed that the company's abilities in appropriately dealing with road surface maintenance and repair needed to be improved.

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<sup>26</sup> Second Wuhan Yangtze River Bridge Construction Project (evaluated March 2001), Shenzhen Dapeng Bay Yantian Port First Phase Project (evaluated March 1999)

### (3) Financial resources of operation and maintenance systems

More than one-third of the projects were deemed to have adequately secured the financial resources necessary for future operation and maintenance. Another third of the projects were listed as having some cause for concern regarding financial resources, while problems were apparent in just over 20% of the projects. The remainder of the project reports did not provide enough information on which to base a decision.

The style of public facilities and services operations in China varies according to the sector and by project. In general, they were financially independent to some degree<sup>27</sup>. However, not all projects were able to achieve complete financial self-sufficiency. There were some projects that needed financial support from the government in order to cover their deficits. At the time of their evaluation, the enterprises operating one-third of the projects that are part of this review were receiving some form of financial compensation, or were being operated under direct control, but were in the red. In particular, operations running at a loss were noticeable in the water supply and sewerage sector, railways sector, bridge sector and gas projects.

- In the water supply and sewerage sector, a total of eleven water supply projects were implemented in ten regional cities and in the Qinhuangdao Economic and Technological Development Zone. Of these, only four projects were able to cover expenses from the revenues generated by the water rates. In China's water supply projects, increases in costs are usually accompanied by revisions of the water rates, but depending on the size of the price increases or the timing, sometimes the revenue from water rates cannot cover expenses. Governmental policy can also be a factor contributing to the problems, keeping the size of the price increases small. For example, in the Qingdao Development Project (evaluated March 1999), the water rates were kept low, and as a result, Qingdao City was asked to subsidize one-third of the expenses.
- In the railways sector, most of the nation's Railways Bureaus are operating in the red. The reason for this is that increases in passenger fares and cargo rates have been kept at levels below commodity price increases as an anti-inflationary measure. This has caused the operating efficiency of the nation's largest state-owned concern, with its 3.5 million employees, to be low<sup>28</sup>. There was a concern that substations along the lines with the largest deficits would have problems finding the funds necessary for maintenance. For example, it

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<sup>27</sup> The majority of projects are operated by enterprises under the governmental umbrella, and are based on the principles of being self-supporting. Even in the railways sector, which is still under direct control, a system of contracting managerial responsibility was introduced in the late 1980s, and each of the lines and substations have shown a strengthening of self-sufficiency.

<sup>28</sup> According to the ex-post evaluation reports of the Zhengzhou - Baoji Railway Electrification Project (evaluated March 1998) and the Baoji - Zhongwei Railway Construction Project (evaluated March 1998). However, as a result of various managerial efforts, including the adoption of a resource management system, staff reductions of 260,000 people were achieved. In 1998, the entire railways sector went from red to black.

was reported that the Railways Bureau could not fully respond to breakdowns in electrical-related equipment, making their continued use difficult<sup>29</sup>.

- Of the four projects in the bridge sector, there were indications that two would become deficit operations in the future. For one of these projects, the volume of traffic fell far below forecast. It was predicted that it would be difficult to meet expenses if repayment of funds borrowed for the project was initiated<sup>30</sup>. The other project was already operating in the red at the time of evaluation, but there was a large increase in traffic volume. Accordingly, operations were expected to soon become profitable<sup>31</sup>.
- In the Urban Gas Project (evaluated March and October 1996), the price of coal and its transport costs suddenly skyrocketed. In contrast, sales prices of gas were kept low as a matter of policy. This caused the profitability of coal gas projects to worsen. In Harbin and Guiyang, income is expected to rise as the volume of gas sales increases in the future, but in Fuzhou, there was no choice but to shift to an LPG gas project.

#### (4) Continuation of Needs

At least 90% of all projects have been deemed as being needed on an on-going basis in the future. In fact, as a general rule, the demand for the projects is on the rise, and there is the outlook that these needs will be even greater in the future.

However, in some projects whose main objective was related to coal transportation, the future demand for coal is unclear, and the ex-post evaluation reports indicated that evaluation on those projects' future importance would have to be reviewed<sup>32</sup>.

#### (5) External factors

Of the projects under review, close to 40% were especially noted as having external factors that significantly affected the effect and sustainability of the project. Two-thirds of the external factors involved the improvement of related infrastructure. Other factors included related policies, need for the projects, and fluctuations in the price of raw materials.

There were ten projects where issues in related infrastructure were noted, mainly in the transportation sector. In half of these projects, progress in the related infrastructure was noted to have a beneficial effect on the projects' effect. For the remaining half, it was indicated that, in order to increase the projects' effect, further progress in infrastructure was required. For example, in Shijiusuo

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<sup>29</sup> Zhengzhou - Baoji Railway Electrification Project (evaluated March 1998)

<sup>30</sup> Hefei - Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2000)

<sup>31</sup> Chongqing - Yangtze Second bridge construction Project (evaluated March 2001)

<sup>32</sup> Shijiusuo Port Construction Project (evaluated March 1988), Yanzhou - Shijiusuo Railway Construction Project (evaluated March 1988), Qinhuangdao Port 4th stage Coal Terminal Construction Project (evaluated March 2001)

Port, Japanese ODA loans enabled the concurrent construction of harbor facilities and rail lines which lead directly to the port. This had a dramatically beneficial effect on the project. Also, while the Wuhan City Airport Construction Project was being implemented, the water purification plants, telecommunication system and bridges (a Japanese ODA loan project), in and around the city were also upgraded. This helped to stimulate the introduction of foreign capital, which was credited with enhancing the final results of the project. Improvements in the connections of container berths to a railway transportation network, upgrades of access roads to railway stations, and amelioration of secondary roadway access in bridge projects, are all examples of situations where upgrades of related infrastructure were deemed necessary<sup>33</sup>.

In terms of improvements in related policies, during the Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), it was indicated that the design and implementation of a sewer system project investment plan was necessary to ensure the city's water quality, environmental protection and effective utilization of water resources. Additionally the establishment of clear-cut wastewater standards, a regulatory and a monitoring system was required<sup>34</sup>.

In terms of project needs, the necessity of paying attention to trends in demand for coal in the future was mentioned for projects in the transportation sector whose main objective involved coal transportation.

Concerning fluctuation in the price of raw materials, in the coal gas projects, skyrocketing coal prices and coal transport costs had an effect on stable material procurement and material quality. It was also reported that these price fluctuations had a large impact on the profitability of the projects<sup>35</sup>.

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<sup>33</sup> Lianyungang Port Expansion Project (evaluated March 1998), Fujian Province Zhang Quan Railway Construction Project (evaluated March 2000), Hefei-Tongling Highway and Tongling Yangtze River Bridge Construction Project (evaluated March 2000), Yangtze Second Bridge Construction Project (evaluated March 2001)

<sup>34</sup> Beijing Sewage Treatment Plant Construction Project (evaluated March 1997)

<sup>35</sup> Urban Gas Project (evaluated March and October 1996)

### 3.3 Issues unique to China

A common problem noted in the majority of the thirty Japanese ODA loan projects was overruns of local currency costs. Although this problem was mentioned previously in the performance analysis section, here a more detailed description of the causes will be presented and the effects this had on the projects will be analyzed. At least 80% of the projects experienced overruns in domestic currency costs, more than double the original budgets in half the cases.

#### (1) Reasons for, and background to, increasing domestic currency costs

During project evaluation, it was found that most of the projects experienced domestic currency cost overruns. The main reasons for this are: higher than expected inflationary increases, expansion of scope and increased amount of construction, and an underestimation of costs.

##### 1) Inflation

From 1988 to 1989 and again from 1992 to 1995, China experienced a 15% inflation rate. Construction material prices rose sharply compared to consumer goods; from 1990 to 1993, construction material prices doubled or tripled. Some projects had included price increases in their plans at the time of appraisal. However, as it is very difficult to accurately predict the inflation rate, many of the projects suffered from the higher than expected inflationary trend. Of the twenty-four projects that were reported as having had domestic currency cost overruns, inflation was identified as one of the causes in seventeen of them.

##### 2) Expanded scope and increases in construction

Projects that incurred increased construction can be broadly split into two groups: projects where expansions of scope caused major revisions to the plans, and others where the degree of pre-project study and design were inaccurate.

Preliminary studies and designs for many of the projects that were undertaken during the first round of Japanese ODA loans were deemed to have been inaccurate<sup>36</sup>. Until approximately 1984, all investment for public works was provided free of charge by the government. Additionally, candidate Japanese ODA loan projects were all considered to be of national importance, which meant that budgets would be allocated preferentially. These factors have been identified as having contributed to a generally low degree of accuracy in cost estimation at the planning stage. As a result, the forecasted amount of construction involved in tunnels and bridges had to be increased. Other increases in the amount of construction or in required construction machinery were caused by having to adapt to more complex geographical conditions than were

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<sup>36</sup> Beijing - Qinhuangdao Railway Construction Project (evaluated March 1990), Hengyang - Guangzhou Railway Transportation Reinforcement Project (evaluated September 1993), Qinhuangdao Port Expansion Project (evaluated August 1998)

originally anticipated.

Even in projects that were undertaken during the second and later Japanese ODA loan rounds, there were some projects where the geographical surveys, the analysis of facility specifications and construction plans were judged to have been inadequate<sup>37</sup>.

### 3) Underestimation of costs

This occurred when there was no estimation of the costs involved. During many of the early Japanese ODA loan projects, land acquisition, compensatory costs and price increases were not taken into account, causing increases in domestic currency costs<sup>38</sup>. There were also projects where the original estimates were based on prices set six years prior to appraisal, and others where it was deemed possible that the estimated amounts had been intentionally reduced<sup>39</sup>.

## (2) Budgets for domestic currency overruns

When domestic currency expenses exceeded the initial plan, the necessary funds were acquired through a variety of means. Examples include cases where the funds provided directly by the implementation agency from its own revenues, the central or regional government was approached for subsidies, loans as well as were secured domestically at various rates of interest, or bonds were issued.

For projects deemed to be of national importance, it was possible to secure the necessary funds expeditiously. However, the amount of financing received and the speed with which it was received depended a great deal on the abilities of the implementing agency.

## (3) Effects on the project

Japanese ODA loan projects in China are solely foreign currency loans, which means that there was a very large effect on the smooth implementation of the project when local currency funding proved insufficient, causing construction delays and incomplete outputs.

Approximately one-third of the projects suffered delays in completion (including delays in the commencement of construction) due in part to local currency budgetary shortfalls. There were two projects whose completion was delayed for more than five years, largely caused in both cases by insufficient local currency funding<sup>40</sup>.

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<sup>37</sup> Beijing Sewage Treatment Plant Construction Project (evaluated March 1997), Wuhan - Tianhe Aerodrome Construction Project, Nanning - Kunming Railway Construction Project

<sup>38</sup> Four projects during the first round of the ODA loan, and the Urban Gas Project (evaluated March and October 1996)

<sup>39</sup> During the Fujian Province Zhang Quan Railway Construction Project (evaluated March 2000), costs were estimated at 1987 prices. However, project appraisal took place in 1993, and prices had risen in the interim. In the end, the domestic currency costs had doubled. The Wuhan - Tianhe Aerodrome Construction Project (evaluated June 1997) faced budgetary restraints, given that the amount available was only what remained of the third yen loan round. Also, restrictive investment measures were in place at the time, so the possibility is undeniable that the project costs were underestimated in order to receive project approval.

<sup>40</sup> Urban Water Supply Project (ten cities) (evaluated December 2000), Fujian Province Zhang Quan Railway Construction Project (evaluated March 2000)

Delays in completion invite increased domestic currency costs, given that inflation continues to increase during the interim. In the worst-case, at the expiration of the Japanese ODA loan period, a portion of the project is never completed, and the original project objectives cannot be sufficiently attained. This occurred in the Urban Gas Project (evaluated March and October 1996) and the Fujian Province Zhang Quan Railway Construction Project (evaluated March 2000).

Should high-interest loans be taken out, the burden on the implementing agency to repay becomes much heavier. Accordingly, the degree to which additional domestic currency funds can be achieved at a low cost (i.e., at a low interest rate) has a very large impact on the project's income and expenditures. For example, in the Second Chongqing Yangtze River Bridge Construction Project (evaluated March 2000), funding was procured through the issuance of high-interest municipal bonds and by taking out domestic bank loans. The evaluation report indicated that this is having a negative influence on the project's operating balance.

## 4. Conclusions

### 4.1 Performance analysis overview

It can be said, in general, that the 30 projects conducted in China for which ex-post evaluation has been carried out have been extremely successful, that project planning has overall been extremely relevant, and that the majority of projects achieved their original objectives. Three-quarters of projects were reported to have had some type of positive socioeconomic impact. In particular, transportation-sector projects, which comprised two-thirds of all projects, are believed to have had significant impact on industrial or regional development. The majority of projects were appropriately run by an operational structure endowed with sufficient technical skill.

On the down side, there were some projects for which efficiency problems, or reason for concern related to financial issues, were pointed out. The background to these circumstances includes certain external factors such as the sudden onset of inflation that occurred in tandem with the country's newly-reformed, open economy, as well as related controls such as the setting of train fares at low rates.

The following is a summary of evaluation findings, by the five major evaluation criteria, on performance for projects subjected to evaluation.

#### (1) Relevance

The 30 projects surveyed were generally evaluated as highly relevant, and not a single project was reported to have had any major problems with regard to objective or planning. Because virtually all ODA loans to China supported, primarily, projects central to the Chinese government's five-year development plans, the majority of the projects were evaluated as highly relevant in terms of government development policy and priority development issues. The relevance of these projects had not declined at the time the project was evaluated.

Specific planning details for a number of projects were considered appropriate; for less than 30% of projects, however there were problems such as a distinct lack of precision in planning and/or issues related to demand forecasts, resulting in delays, excess cost, diminished project effectiveness, and so on.

Approximately 80 % of the projects involved some type of change of plan, though most of these changes were relevant to project objectives. However, the economics of the changes were, in certain instances, not considered, and/or the changes not fully communicated to JBIC, resulting in a scenario where the process to change the plan was not necessarily appropriate.

#### (2) Efficiency

Two-third of projects were evaluated as having been implemented in a sufficiently efficient manner in terms of completion of facilities, duration of construction period, and project cost. In

general, evaluation of project implementation system was high, with roughly three-fourths of projects rated as having adequately competent implementation systems. No projects were reported as lacking in capacity with regard to construction schedule control or technical issues, and some executing agencies exhibited excellent performance in terms of shortened construction periods, swift procurement of local currency budgets, and so on.

Other projects, however, were less efficient due to a variety of reasons. Though most of the projects have achieved planned levels of output by the time they were evaluated, some facilities had not been completed according to the plan formulated at appraisal by the loan disbursement period due to factors such as poor implementation plans or insufficient local currency budget. Projects for which completion was delayed by one year or more, and those that went over budget by 10% or more, accounted for 40% of the total number of projects respectively. There were also cases that exhibited quality control problems during road and bridge construction periods.

The principle factor behind the deterioration in efficiency during the implementation stage was a rise in costs to be covered by local currency, which was caused by the dramatic rise in inflation, far beyond forecasts, that occurred from the late-eighties to the beginning of the nineties, as well as by expanded construction scale resulting from broadened project scope or lack of precision at the planning stages. Also, some projects that required extended periods of time for the acquisition of local budget became caught in a vicious circle where inflation worsened during the period the currency was sought, necessitating more funds.

### (3) Effectiveness

Nine-tenth of the projects were deemed to have reached their objectives. In general, it can be said that the ODA loan projects for China for which ex-post evaluation was conducted produced significant results. It was also noted that technical assistance required for the introduction of new technology for four of the projects was carried out effectively.

Facilities were sufficiently utilized for more than half of the projects, with usage for the majority of the rest trending upward year by year. However, transport sector projects were noticeably underutilized; among rail and port projects, for instance, one-third had not achieved planned target levels for cargo volume due to disappointing growth rates for coal as well as commodities handled at the ports such as lumber and grains, all of which had been forecast as main commodities for the rail and port sectors. In addition, transport volume fell short of forecasts due to delays in the construction of connecting roads for half of the bridge projects implemented.

IRR (FIRR or EIRR, or both) was recalculated for more than 70% of projects, averaging 6.6% for FIRR and 14.3% for EIRR. Performance figures for the FIRR deviated significantly from the target figure for a number of projects, and slightly fewer than 20% of projects achieved less than 30% of the target figures. Factors contributing to failure to achieve targets included policy-induced low railway usage fee and port cargo handling fees, increased project costs, extended construction periods, increased operations and maintenance costs, and less than expected utilization of project outputs. No projects, however, fell below 30% of the EIRR target.

#### (4) Impact

Three-quarters of all projects were reported to have had some type of socioeconomic impact, all of them positive. A great number of reports of transportation sector projects point to project impact on industrial regional development. Impacts included accelerated development of coal-producing regions, which had limited capacity to transport coal; alleviation of deficiencies in the energy supply in areas of strong demand; attraction of industry to project areas/expansion of urban areas; advancement of the industrial structure; employment creation, and so on. Some local governments have proactively carried out development activity; acting on the notion that the projects would act as catalysts for regional development, they have formulated a variety of development strategies, as well as establishing new economic development zones. In addition, a number of reports have pointed to the development of tourism in local areas.

A number of regions also reported having gained the ability to create an attractive environment for investors through ODA loans, and that the acquisition of foreign capital was also greatly accelerated. In Wuhan, for instance, the upgrading of the airport via an ODA loan served to contribute to a more appealing investment, resulting in the establishment of a number of joint ventures with world-class corporations in the city. Also, following the completion of a water supply and sewage system in the Qingdao Economic and Technical Development Zone through an ODA loan, high-tech and export processing industries underwent rapid development, bringing the city to the ranks of world-class urban environments.

With regard to environmental concerns, roughly one-third of the projects boasted a positive impact, or at least were not reported to have had any negative effects. In addition to improvements in quality of local water stemming from multiple water supply and sewage projects, air pollution in the form of SO<sub>2</sub> levels and other emissions were forecast to drop along with the changeover from coal to city gas enabled by city gas improvement projects. Other projects were reported to have had negative effects on the environment, but the burden imposed by each was said to be light, or not specifically proven to be linked to ODA projects.

Forty percent of projects involved resettlement of local residents or acquisition of land. New housing, employment, and moving expenses were provided to the residents, and virtually none of the projects encountered major problems.

The resettlement of 7,500 residents for a dam project was carried out under the concept of “developmental re-settlement,” under which the affected individuals were able to attain a higher standard of living and engage in more production-related activities. Nearly all affected reported that they were satisfied with the move.

#### (5) Sustainability

In general, the organization structure of operations and maintenance for ODA loan projects in China is appropriate, endowed with sufficient management competence and technical capacity. Output (physical or operational status) was satisfactory for 80% of projects surveyed, and instances of

problems with operations and maintenance were minimal.

Financial difficulties, however, were reported for more than half of the projects surveyed. At the time ex-post evaluation was conducted, one third of the thirty projects, or their operators, were running a deficit, and were consequently receiving government assistance to cover costs. The problem was particularly apparent with the water supply and sewage, railway, bridges, and gas sectors.

Though water usage fees, for instance, were raised to accommodate waterworks costs, it was insufficient to cover rising costs due to problems with modest rate increases and/or timing issues. Also, government controls in some cases kept fees from rising significantly. Of the eleven ODA loan projects surveyed, seven were operating with a deficit. Meanwhile, the railway sector was plagued by problems such as controls that kept fares relatively low compared to commodity prices---an anti-inflation strategy---as well as inefficiency due to the fact that the railways are a state-run corporation. Nearly all of the country's railways were running a deficit by 1998. Since 1999, however, improvements have been observed, stemming from management efforts to remedy the situation.

Because need for the majority of the types of projects implemented so far is expected to continue into the future, sustainability levels are expected to remain high given that improvements are made to financial administration.

## 4.2 Lessons Learned / Recommendation

### (1) Continuous assistance provided to priority sectors, with a long-term view

ODA loan assistance to China has focused on infrastructure development, going primarily toward major projects within the structure of the country's five-year plans. In light of the priority assigned to them, most of the projects were considered highly relevant, and also demonstrated high output levels, or were trending upward in terms of output. They were therefore seen as having sufficiently achieved project goals. Among the various sectors, the rail and port segments in particular have received continuous support. This eased restrictions in the transportation sector — which had represented a major stumbling block to the implementation of reform policies — have greatly contributed to the development of the Chinese economy. Though priority sectors may shift as the economy develops, on the assumption that ODA loans will continue to be China in the future, significant results can be expected where priority sectors are provided with continuous assistance.

### (2) Attention to local currency costs

Projects conducted in China tend to frequently exceed local currency budgets. Though reasons behind rising local currency costs include periodic cases of dramatic rises in inflation, which could not necessarily have been predicted, there were also issues that might have been anticipated if procedures had been properly carried out, e.g. difficulties stemming from inadequate surveying and design, as well as problems with improper budget estimates. Because local currency budget deficiencies significantly effect project implementation for ODA loans consisting of foreign currency only, it is absolutely critical to carefully study local currency estimates at appraisal to determine their appropriateness. If, however, this procedure proves ineffective in avoiding the risk of rising local currency costs, means of procuring additional funds required should be devised prior to project implementation.

## Reviewed Projects (China)

Project Name	Sector	L/A
GUANYINGE MULTIPURPOSE DAM PROJECT	Electric Power and Gas	Aug-88~Nov-90
SHISANLING PUMPED STORAGE POWER STATION PROJECT	Electric Power and Gas	Mar-91
URBAN GAS PROJECT	Electric Power and Gas	Aug-88~May-89
SECOND WUHAN YANGTZE RIVER BRIDGE CONSTRUCTION PROJECT	Transportation	Nov-90
HUANGSHI YANGTZE RIVER BRIDGE CONSTRUCTION PROJECT	Transportation	Nov-90
HEFEI-TONGLING HIGHWAY AND TONGLING YANGTZE RIVER HIGHWAY BRIDGE CONSTRUCTION PROJECT (I)	Transportation	Oct-91~ Oct-92
SECOND CHONGQING YANGTZE RIVER BRIDGE CONSTRUCTION PROJECT	Transportation	Oct-91
YANZHOU-SHIJIUSUO RAILWAY CONSTRUCTION PROJECT	Transportation	Apr-80~ Oct-83
BEIJING- QINHUANGDAO RAILWAY CONSTRUCTION PROJECT	Transportation	Apr-80~ Aug-83
HENGYANG-GUANGZHOU RAILWAY 2-TRACKING AND ELECTRIFICATION PROJECT	Transportation	Apr-80~Jul-87
ZHENGZHOU-BAOJI RAILWAY ELECTRIFICATION PROJECT	Transportation	Oct-84~ Aug-88
BAOJI-ZHONGWEI RAILWAY CONSTRUCTION PROJECT	Transportation	Mar-91~ Aug-93
HENGSHUI-SHANGQIU RAILWAY CONSTRUCTION PROJECT	Transportation	Mar-91~ Oct-92
NANNING-KUNMING RAILWAY CONSTRUCTION PROJECT	Transportation	Oct-91~ Aug-93
FUJIAN PROVINCE ZHANG QUAN RAILWAY CONSTRUCTION PROJECT	Transportation	Aug-93
WUHAN-TIANHE AERODROME CONSTRUCTION PROJECT	Transportation	Mar-91
SHIJIUSUO PORT CONSTRUCTION PROJECT	Transportation	Apr-80~ Aug-83
QINHUANGDAO PORT EXPANSION PROJECT	Transportation	Apr-80~ Apr-82
QINHUANGDAO PORT CAND D BERTHS CONSTRUCTION PROJECT	Transportation	Oct-84~ Aug-88
LIANYUNGANG PORT EXPANSION PROJECT	Transportation	Oct-84~ May-89
SHENZHEN DAPENG BAY YANTIAN PORT 1ST PHASE PROJECT (I)	Transportation	Jan-91~ Oct-92
SHIJIU PORT SECOND PHASE CONSTRUCTION PROJECT	Transportation	Oct-91~ Oct-92
LIANYUNGANG PORT XUGOU AREA FIRST PHASE CONSTRUCTION PROJECT	Transportation	Oct-92
QINHUANGDAO PORT 4TH STAGE COAL TERMINAL CONSTRUCTION PROJECT (I)	Transportation	Aug-93~ Jan-95
TIANJIN, SHANGHAI AND GUANGZHOU TELECOMMUNICATION EXPANSION PROJECT(I)	Telecommunications	Oct-84~Aug-88
BEIJING-SHENYANG-HARBIN TELECOM. SYSTEMS PROJEC	Telecommunications	Oct-92~ Aug-93
EXPORT INDUSTRIES PROMOTION PROGRAM	Mining and Manufacturing	Aug-88
BEIJING SEWAGE TREATMENT PLANT CONSTRUCTION PROJECT	Social Services	Aug-88
URBAN WATER SUPPLY PROJECT	Social Services	Aug-88~ Oct-91
QINGDAO DEVELOPMENT PROJECT (WATER SUPPLY AND SEWERAGE)	Social Services	Aug-93