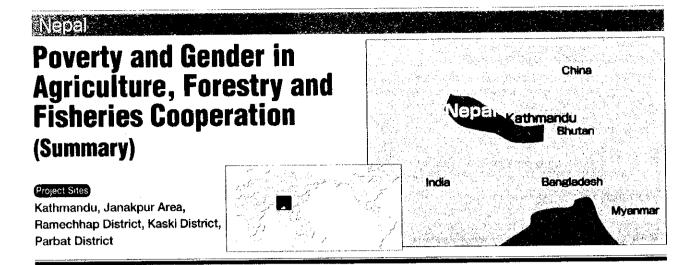
Chapter 2 Ex-post Evaluation

Following is the list of ex-post evaluation conducted in FY1999. This summary version presents the evaluation results of "Poverty and Gender in Agriculture, Forestry and Fisheries Cooperation in Nepal" Other 24 cases could be downloaded from the complete version at JICA homepage.

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Chapter 2 Ex-post Evaluation



1. Background and Objectives of Evaluation

In formulating projects that require activities from viewpoints of poverty and gender, JICA carries out social and economic studies at the planning stage. However, JICA is still at the stage of trial and error concerning how to incorporate poverty or gender issues revealed by such studies into project implementation.

Considering this lack of experience, this evaluation study was conducted to identify the lessons learned and recommendations for future JICA cooperation activities to address poverty and gender issues, and to design projects that are effective at the local level, through evaluating completed or ongoing JICA projects in agriculture, forestry and fisheries in Nepal from poverty and gender perspectives.

2. Evaluated Projects

• The Janakpur Zone Agriculture Development Project

(1974-1984, Project-type Technical Cooperation)

• The Horticulture Development Project (Phases I, II and Follow-up)

(1984-1999, Project-type Technical Cooperation)

• The Project for Natural Water Fisheries Development (Phase I and Follow-up)

(1991-1998, Project-type Technical Cooperation)

 The Community Development and Forest/ Watershed Conservation Project (Phase I) (1994-1999, Project-type Technical Cooperation)

*The following two projects were being implemented in association with the above project and, thus, included in the subject of the evaluation study: Greenery Promotion Cooperation Project (Team dispatch of Japan Overseas Cooperation Volunteers) and Development Study on Integrated Watershed Management in the Western Hills (Development study).

3. Period of Evaluation

Entire period of evaluation: 10 September 1999-31 March 2000.

4. Methods of Evaluation

In carrying out the evaluation study, JICA made a full contract with a university for the first time. Nagoya University, which was commissioned, organized the Evaluation Committee for Technical Cooperation in Nepal consisting of the Graduate School of International Development as the chief, the Graduate School of Bioagricultural Sciences and the International Cooperation Center for Agricultural Education to undertake the study. The Committee discussed strategies and subjects of the evaluation and held study sessions to collect information on Nepal.

Eight teams, formed by area of research, carried out the field survey (see the above list of the evaluation teams). The teams collected information by having local consultants fill out the prepared questionnaires and by conducting interviews with farmers and other stakeholders. Sample farmer households were drawn randomly from both the project sites and control sites, where no projects were implemented. During the field survey, JICA experts and JOCVs provided advice and assistance to the evaluation teams.

After returning to Japan, each team confirmed and analyzed the collected data and prepared the evaluation report.

5. Impact of Projects on Poverty

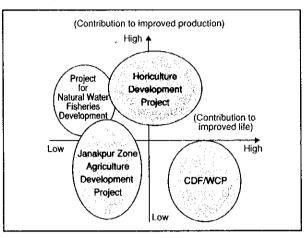
(1) Characterization of JICA Technical Cooperation Projects in Agriculture, Forestry and Fisheries

The team developed a iwo-dimensional dispersion chart to characterize each project from the aspects of "contribution to production" and "contribution to improvement of life" (Fig. 1), which showed the following results: 1) Janakpur Zone Agriculture Development Project had a low direct relation to production and improvement of life; 2) the Horticulture Development Project focused on the production side; 3) the Project for Natural Water Fisheries Development contributed slightly to production but had no connection with improvement of life; and 4) the Community Development and Forest/Watershed Conservation Project and the Greenery Promotion Cooperation Project (CDF/WCP & GPCP) contributed much to quality of life but had a low contribution to production.

The target group of technical transfer were: 1) extension workers in the Janakpur Zone Agriculture Development Project; 2) both technicians of the national horticultural experimental station and model farmers in the Horticulture Development Project; 3) technicians of the national fisheries experimental station in the Project for Natural Water Fisheries Development; and 4) local people in CDF/WCP & GPCP.

It was found that the greater variety of cooperation schemes added to a project, the greater the categories of recipients of technical transfer. For example, the Janakpur Project established the link with farmers after it introduced pump irrigation free of charge. In the case of

Fig. 1 Contribution of the projects to the improvement of production and quality of life



	Janakpur Zone Agriculture Development Project (1974-1984)	The Horticulture Development Project (1984-1999)	The Project for Natural Water Fisheries Development (1991-1998)	Community Development and Forest/ Watershed Conservation Project and Greenery Promotion Cooperation Project
Project site (s)	Janakpur Area	Kathmandu, Kabhre District, Ramechhap District	Kaski District	Kaski District, Parbat District
Background of the Project	To carry out agricultural development that was ranked as high priority in the Fourth Five-year Plan, Nepal divided geographically the areas to be developed into several zones, each of which was to be assisted by a donor. Japan was responsible for carrying out cooperation activities in Janakpur District and started this project.	For the efficient use of small plots in mountainous and hilly areas, Nepal planned horticulture development in those areas and requested financial and technical cooperation from Japan for the establishment of horticulture development centers.	The government of Nepal regarded aquatic resources as a low-cost and easy to produce/supply source of animal protein that would improve the nutritional status of people, and requested cooperation from Japan in the improvement of production techniques of fry production of carp and local fresh water fish at the already existing fisheries development centers	Within the framework of the Forestry Master Plan of 1988, Japan assisted in environmental conservation activities in Nepal through the Forestry Extension Project. A study on this project proposed the idea that people- centered cooperation based on needs would lead to environmental conservation. Based on this study result, the government of Nepal requested from Japan another cooperation project that would include both a soil conservation/ watershed management program and a program for the development of community environment and forest resources.
Objectives and Activities	With the ultimate aim of increasing incomes and improving the living standards of the farmers living in the project sites, Japan assisted in the establishment and management of the Janakpur Agriculture Extension Center and carried out training at the Center and extension activities at model farms and in mountainous areas.	The project aimed to utilize mountainous and hilly areas and to promote fruit growing, which was to contribute to the diversification of agriculture, increase in agricultural income, improvement of nutritional status and acquisition of foreign currency. Activities included technical development in fruit cultivation, training of technical workers and dissemination of new techniques to farmers.	With the aim of improving the research capabilities of counterparts engaged in fish culture development and thereby contributing to the development of fresh water fish culture in the central hills, the project carried out development and transfer of the related techniques.	A package of three projects (Community Development and Forest/Watershed Conservation Project, Project-type Technical Cooperation, Greenery Promotion Cooperation Project, team dispatch of JOCVs and development study) was implemented for the purpose of contributing to the improvement of land productivity and natural environment through the implementation of village development sub-projects for the improvement of living standards. Activities included the development and validation of methods of planning, implementation, monitoring and evaluation of village development sub-projects.

Table 1 Overview of projects studied

the Horticulture Development Project, the construction of laboratory facilities (the Horticulture Development Centers) by free of charge enabled middle-level technicians to receive training there. JOCV activities targeting local fishers preceded the NWFP Project. Above all, it was noteworthy that CDF/WCP & GPCP could address the various needs of rural communities through the combined cooperation schemes, namely, development study, JOCVs and Project-type Technical Cooperation, in one comprehensive program.

(2) Impact of Agriculture, Forestry and Fisheries Projects and Poverty and Gender Issues

Under any circumstance, a project in primary industry such as agriculture, forestry and fisheries is designed to target production. It could be confirmed from experience that such a project impacts "production" first, then "quality of life," and finally "society" (Fig. 2).

A technical cooperation project targeting poverty or gender issues might have certain impact if it approaches such issues directly. However, it may take time for a production-oriented project to have impact on poverty and gender, and a large part of impact might become watered down and fade away with the progress of the project. Moreover, such a project might even have a negative impact such as widening the gap between the rich and the poor and as a consequence, emergence of a new problem of distribution of the profits generated by the improvement of production.

For example, the Janakpur Agriculture Development Project had two components: those that did not directly target farmers, such as development of agricultural extension techniques and training of extension workers; and those directly targeting farmers, such as the

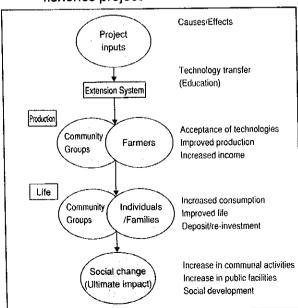


Fig. 2 Flow of impact on agriculture / forestry / fisheries project

introduction of irrigation. Underlying the extensionrelated components was the belief that farmers would ultimately benefit from the training of extension workers once these trained workers were back in the extension system carrying out their work. However, if the organizations and the system of agricultural extension in Nepal do not function, the outcomes would not reach to the end beneficiaries-the farmers.

As for the irrigation components, on the other hand, the inputs for a new farming system (i.e., irrigation) benefited farmers in a way that it increased their income, but only when they had farmland and access to credit. That is to say, the project might have had no impact on tenant farmers and agricultural laborers. In some cases there might even have been a negative impact such as creating a heavier workload.

A project could be said to have had positive impact if poverty of the village as a whole was viewed as the target, but when looking at a social aspect, the project impact would not necessarily be positive due to the widening of the gap between rich (those who benefited from irrigation) and poor (those who did not). In this manner, it would be the social system of division of profits that determines impact of the output brought by the production-oriented inputs on the target (farmers and communities). Therefore, whether a project would apply the traditional social system of division of profits or aim to bring about a more equal social system is an important factor to consider at the planning stage. And in either case, the planners must assume as the project impact a social change in the end.

(3) Evaluation on poverty and gender issues using agricultural indicators

The evaluation team selected indicators commonly used in the field of agriculture (e.g., agricultural production) and prepared questionnaires based on them. Questions about the rural community and economic situation were also included. By conducting a field study including interviews, the team collected information on the life and agricultural production of 382 households. Through the study, the team assessed the impact of agriculture, forestry and fisheries projects on the improvement of poverty and gender issues. The following are some results of the impact assessment.

1) The Janakpur Agriculture Development Project

Regarding the means of production, the project site showed more active use of irrigation facilities than the control site. This could be a reflection of the impact of the dissemination of techniques including water management. Although the team did not see an increasing trend for rice and wheat (main crops), some indicators showed an increase in the cultivated area of wheat in the dry season. Also, the proportion of farmers who felt the production of such crops had increased was higher in the project site than in the control site. However, this might have reflected the production increase due to the expansion of cultivated area rather than the increase in yield: the yields of both rice and wheat in the project site were on the same levels as the national averages, and it was considered that the impact of the project had not reached the improvement of productivity of farmers yet.

2) The Horticulture Development Project

This project covered geographical areas with different natural and social conditions and, thus, its impact was also different from area to area.

In Kathmandu District, despite the low cultivation rates of rice and wheat, the yield levels were high for hilly areas, which indicated the practice of intensive crop production including management of fertilizer application. In addition, vegetable production was active in the same area. The team considered this was due to the introduction and extension of fruit trees by the project, which must have stimulated interests of farmers in new technologies and more production, and thus brought the increase in production of other crops. The project had not yet achieved remarkable outputs in fruit production, since extension agents and farmers have only limited experience in fruit production.

In the Kabhre District, too, there were higher yields of rice and wheat in the project site than in the control site, which was considered due to the increased inputs such as fertilizer and chemicals. The project had introduced pear, persimmon and chestnut trees in this site, but the team did not find any of these trees in farmyards. It seemed that the groundwork for establishing new crops was not yet fully completed. On the other hand, the team found one family with a guava tree planted on the boundary between their terraced fields as one of their fodder trees. The fruit was a food for the family as far as the team could tell. Perhaps a guava tree would not contribute to cash income, but it enriches children's diet, and might play an important role in assessing the possibility of dissemination of



Small village on a mountain slope

new technologies, and moreover could serve well as an indicator of poverty.

The Ramechhap District was the site where productivity of grain production was the lowest among the project sites. However, regarding the introduction of fruit trees, junar, a variety of oranges that was being promoted by the project, was considered likely to spread in Ramechhap because natural conditions were well suited to the growth of citrus trees and wild citrus trees were found in the area. There are still challenges for the establishment of junar production on a commercial basis: the production process must be closely controlled, and access to town markets must be improved, for at present the product must be carried by humans on mountain paths over ten kilometers.

3) The Community Development and Forest/ Watershed Conservation Project and Greenery Promotion Cooperation Project (CDF/WCP & GPCP)

Phase I of the Community Development and Forest/Watershed Conservation Project focused on infrastructure development activities initiated by local people such as riverbank protection work, improvement of footpaths and rehabilitation of irrigation canals for conservation of living and natural environments. Also, an organizational system involving government, Japanese experts, JOCVs and villagers was established in order to support the project, which was characterized as participatory, and better reflect people's needs and opinions.

As the afforestation activities of Phase I intended only small-scale expansion of forest areas and rehabilitation of forest resources, it was difficult at the time of this study to assess the impact of the project on people's relation to forests. The team confirmed from the villagers' responses that the information provided by the project had reached farmers and that they were getting information about the functions of forests from JICA and foreigners. At the same time, however, there was an area where more than 40 percent of the people had never been taught the functions of forests, which suggested that many villagers were still not receiving information.

(4) Case study of the impact of the Project for Natural Water Fisheries Development

In Nepal, the fisheries has developed in the southern part of the country since the 1960s. Production dramatically increased through the transformation of irrigation ponds into fishponds. In the early 1990s, since the production of the existing fishponds had peaked, the development of natural and artificial lakes in the central hilly areas was planned for the purpose of a steady increase of fish production.

Japan had been engaged through technical cooperation in small-scale fish culture in net-enclosed areas through JOCV activities in Pokhara City and its neighboring areas since the 1970s. Fishermen accepted this technology because the areas were naturally rich in fish feed such as plankton and the cost of introducing netenclosed fish raising was low.

In 1991, Project-type Technical Cooperation started as an expanded form of the said JOCV cooperation. Fish production increased remarkably as the supply system was well established through the achievement of one of the project objectives, which was the introduction of appropriate technology for the production of fries in the hatchery center. The terminal evaluation of the project highlighted this good result in terms of production, though it pointed out that the center had a problem regarding financial sustainability.

It could be said that the aquaculture, which started in the south, developed in a stable manner, having been introduced to the central hilly areas, although not without problems.

With regard to the impact of the increased production, both the southern areas and the central hilly areas had benefited economically. However, from the viewpoint of poverty reduction, the team found the following differences between the impacts of fisher in the two areas:

- In the southern areas, those who benefited economically were owners of the irrigation ponds (land). Therefore, it was considered that the economic disparity between owners and nonowners of ponds became wider.
- 2) In the central hilly areas, the beneficiaries were fishers who are in a lower caste than farmers. This fact largely contributed to a bottom-up reduction of the poverty gap between farmers and fishers.

What was noteworthy from the viewpoint of sustainability-focused aid was the "continuity" of poverty reduction in the central hilly areas. "Continuity" here meant that individual beneficiaries improve economic and social status of their families while not wasting their income and paying back their debt, and that the number of such beneficiaries increases.

The team considered that such continuity would grow out of the improvement of fishers' self-organizational capacity. An aquaculture union existed before the project, but credits were given to fishers regardless of whether they were members of the union or not. Because the repayment rate was very low, credits came to be given through the union. This helped to improve the organization's membership rate, but it was not a factor that directly contributed to the improvement of the selforganizational capacity of fishermen: It could seen many cases around the world where a person becomes a union member to acquire credits but does not repay the money.

In this study, the team regarded selforganizational capacity as the capability of



Rice paddy on a mountain slope

beneficiaries to continuously make repayment for loans, return profits to their families and invest profits in new businesses. The process in which the beneficiaries expand the scale of groups they belong to was then taken as the improvement of self-organizational capacity.

Based on this recognition, the team analyzed the entire aquaculture activities, including the evaluated project, to identify factors that bring continuity by using the idea of "sustainability", one of the five evaluation principles put forward by the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD), as the framework of the analysis. As a result, the team found a factor that should not be overlooked. It was the cooperative shipping system of the catch established with the introduction of aquaculture. Having been established for convenience of distribution and accepted by fishers, the system provided fishers who had changed their lifestyle from moving to settled with an opportunity to further promote the group formation. In general, fishers have a strong disposition to individualism and independence due to their eagerness to secure their own fishing grounds. The aquaculture activity changed this characteristic, and the establishment of shipping centers functioning as a place of information exchange caused a social change towards group formation (i.e., the emergence of fishers' networks) that had never happened before. This fact was considered to be the main factor of continuity.

(5) Impact of the Community Development and Forest/Watershed Conservation Project and the Greenery Promotion Cooperation Project (CDF/WCP & GPCP) on the poor

The team selected CDF/WCP & GPCP as the subject of the study, and analyzed the impact of the project activities on the poor. The major components of the project activities were the various sub-projects such as ginger growing, bee keeping, goat raising, improvement of footpaths, construction of water supply facilities, improvement of kitchen stoves and literacy classes.

For analytical purposes, the team set seven dimensions to measure impact of a development project in rural areas: 1) resources, 2) capital, 3) skills, 4) decisionmaking capability/empowerment, 5) organizational capacity, 6) infrastructure and 7) gender. The team defined these seven issues as the necessary components for the capacity building of the poor in both aspects of production and life, and proposed to analyze the project's impact on poverty reduction by examining the seven issues for each of the aspects of production and life.

Among the above seven issues, the issue of "gender" is not discussed in detail here as it will be thoroughly analyzed under the theme of "impact assessment from viewpoint of gender" (see the next section). Also, since CDF/WCP & GPCP focused on forest conservation and there had been increasing discussions on poverty and environment, the team replaced the seventh item with "forest conservation" for this study.

Overall, the team found little significant impact of the projects on poverty reduction in economic terms, but did find some notable positive effects on the lives of the poor. Indeed, the projects brought positive impacts on the poor in terms of improvement in their knowledge, access to technology, decision-making capabilities/empowerment, organizational skill and in economic and social infrastructure in their surrounding environment.



A woman transporting straw

For example, women who participated in the literacy sub-project¹) not only acquired the ability to read and write but also gained experience in group activities, and new knowledge contained in the textbook developed by the Nepalese government such as public health and conservation of environment, that was of great use for rural women in improving their village lives. In addition, as this sub-project targeted women, it helped empower women participants by giving them an opportunity to organize themselves as a group, and maintain and manage their group activities.

Also, sub-projects for constructing drinking water supply and sanitary facilities had direct positive impacts on the improvement of the lives of the poor, and also seemed to have contributed to the improvement of their health and nutrition status. It was noteworthy that in the drinking water sub-project, user groups, which were formed by villagers specifically for the project activities, voluntarily set the rules for the members, undertook operation and maintenance of the constructed facilities, established group funds and distributed the profit of the fund. It was considered to be the largest impact of the project that villagers had such experiences of organizational management.

6. Impact Assessment from the Viewpoint of Gender

The study took up CDF/WCP & GPCP as a case study again and discussed the projects' impact on participants. The team carried out separate evaluations of the impact that was quantifiable and that which was not. Examples of the quantifiable impact include income generation and shortening of time spent for some activities. To mention a few examples, the team found that the sub-projects such as ginger production, goat raising and orange production did not contribute to income generation because productivity did not improve or the sub-project had been just started, but bee-keeping activities made an average monthly income of 150 rupees. Also, some informants pointed out that the sub-project to improve footpaths shortened their traveling time to the fields, which used to be 1.5 to 2 hours, by about 30 minutes.

On the other hand, the non-quantifiable impact included 1) the improvement of "self-development capability" (e.g., villagers gained the confidence and skills to express themselves or became able to manage time

¹⁾ As one of the village-level sub-projects, six-month literacy classes were held for the caste to which many illiterate women and the poorest people belong. According to a survey conducted in this study, the literacy rate of the site of this sub-project was 23%, which was higher than both the averages of the control sites and the nation as a whole (both were 19%). The proportion of literate women to men in the sub-project site was higher at 4:10 (4 women:10 men) while in the control sites the rate was 3:10.

efficiently), 2) the improvement of "group-development capability" (e.g., user groups gained ability to make decisions and put them into practice by teamwork) and 3) "entertainment opportunities" (e.g., by joining user groups, women gained interaction with other women and enjoyed singing and dancing in their spare moments). Such qualitative impact was considered to be larger than the quantifiable one and, thus, very important in evaluation from gender viewpoint.

At the same time, some impact was considered negative. For example, women came to bear a heavier workload by joining user groups and their participation in distribution of income or decision-making at household level rather decreased.

Based on the above-mentioned findings, the team discussed "sustainable development" from a gender viewpoint. A merit of a project that adopts a participatory approach is that the people could acquire management skills with ownership through participation in the project, which might eventually contribute to the cultivation of the spirit of self-help within people. On the other hand, there are some limitations of a participatory project, namely the problems of maintenance of facilities constructed for the project and fund-raising of user groups. For example, in CDF/WCP & GPCP, the drinking water tanks and other facilities constructed by the projects will need continuous support from JICA for maintenance since it is difficult to obtain the necessary skills and materials locally. With regard to funding, a group fund was introduced to maintain each sub-project, but the low income of the people did not allow the deposits to reach a sustainable level. Management of the funds should be reviewed.

In addition, attention should be paid not only to whether the impact of the sub-projects was "sustainable" but also to an "inter-connection" of the sub-projects implementation of a sub-project might, even if it failed, provide a chance to create another sub-project. For example, the success of bee keeping prompted the women participants to start raising goats next.

The team also found that recognizing the cultural values and working with established user groups in the project sites may lead to better results in terms of project management and sustainability.

7. Relations Between Education and Poverty/Gender in Nepal

This section discusses the influences that three of the studied projects had on the education of farmer's household (couples and children) in the project sites in comparison with the situation of non-project sites.

In Janakpur Zone Agriculture Development Project, the team did not find any differences in farmers' educational status such as history of schooling and literacy rates between the project site and the controlled site. The effects of the project on education were rather indirect. Two types of indirect effects were considered: one was that the project provided farmers an opportunity for learning and acquisition of knowledge (opportunity effects) and the other was that farmers improved their living standard by accepting the agricultural project and consequently gained interest in learning and education (economic effects).

Similarly, CDF/WCP & GPCP had only indirect effects on education. The project tried a variety of activities calling for women's active participation, but improvement of the status of women in terms of education was not observed.

On the other hand, the Horticulture Development Project proved to have had consistent impact on the aspect of education. Ten years of training and extension activities provided farmers with valuable educational opportunities. In the survey of farmer households, a higher proportion of husbands and wives in the project sites responded that they were taking part in distance learning, literacy classes or seminars or self-learning programs than those in the control sites, which proved that the project implementation had a consistent impact on education. The most important factor for such success was that fruit-growing technology was transferred to individual farmers at the grassroots level, thereby enabling farmers to access new technologies directly. As fruit growing was an activity in which women could take part directly, the project brought about educational effects on women as well.

All three projects also had indirect effects on improvement of the children's educational environment, namely the proportion of pupils who have textbooks, dropout rate and alleviation of their workload.

At the same time, the analysis revealed that most women were illiterate, except at some project sites. It seems that any project will have difficulty in establishing a sustainable and strong development base under such circumstances. From this fact, the importance of literacy education in agricultural projects could be reconfirmed.



A literacy class

8. Lessons Learned and Recommendations

(1) Increase in agricultural productivity and importance of economic development in rural areas

The team confirmed that technical cooperation projects in agricultural development in Nepal, where agriculture is the basic industry, played important roles in improving the living standard of farmers and in developing rural areas through the pursuit of their aims of improving agricultural productivity and increasing the income of farmers. At the same time, since nonagricultural livelihood activities are important as well for the development of rural economies, more job opportunities must be created.

The study on the Horticulture Development Project and Janakpur Zone Agriculture Development Project revealed that the projects had large impact on the productivity of farmers and fishers when they targeted them directly. Also, as seen in CDF/WCP & GPCP, disadvantaged groups such as the low caste improved their status in the society by accepting the intervention.

(2) Land problems and the necessity of more inputs into the agricultural sector

A close observation of poverty in Nepal from the viewpoint of macroeconomics revealed that poor farmers lack funds to buy production inputs and lack access to the means of production (land). The scale of landholding in particular has much to do with the disparity in wealth among farmers: those with small landholdings are poor and cannot access inputs. From this, it can be concluded that the low labor productivity in agriculture leads to poverty in Nepal and thus an expansion of landholding, increase in production inputs and a review of the land system are required.

However, as the traditional landowning system is deep-rooted, rapid development will be difficult even if democratization and economic liberalization are promoted. In terms of the law, people rarely seek arbitration and, thus, it will take some time for them to seek legal intervention in the process of agricultural development.

(3) Measures for gender from the aspects of education and law

Survey results showed that when implementing a project, it is necessary to provide education for transfer of technology and knowledge. Among others, implementation of a literacy class as a sub-project proved to be an effective means of involving women in project activities. As such, a project that addresses Women in Development (WID) or gender issues requires educationrelated inputs. Other types of education such as mathematics and science are also considered necessary for agriculture development projects. In this way, education plays an important role in the process of technology transfer, improving incomes and quality of life.

With regard to law and gender, there arise few legal disputes over gender-related issues despite the articles of the Constitution and the National Law that are disadvantageous to women. This shows that the traditional customs still remain in the society, but they will gradually change in the process of development. In order to deal with these issues, human resources to develop the legal environment will be needed in the first place.

(4) Importance of targeting

A technical cooperation project in agriculture does not always target the most appropriate farmers. Even a project that is supposed to be poverty/gender responsive sometimes does not target the right groups, namely, poor farmers and/or women. An approach to select proper target groups is required. For that purpose, precision of targeting should be improved by strengthening base-line surveys using social analysis methods at the planning stage of the project. Also, the relation between target groups and ultimate beneficiaries (i.e., impoverished farmers) must be clarified. As development at the grassroots level faces diversified societies, planners need to be careful to deal with it.

(5) Flow of project impact

When conducting an impact assessment, one should confirm where, when and of what kind the project inputs brought about impact on the society, and this will define the evaluation criteria. It is also necessary to grasp the flow of inputs and outputs until they reach the ultimate beneficiaries. Therefore, the project effects/ impact that might be brought about in a short-term and that might need long-term cooperation must be distinguished prior to the project implementation. When evaluating the project, it is important to address such a gap in timing of appearance of impact as much as possible.



A woman fitching water. She must walk farther during the dry season.

(6) Indicators for impact assessment and project evaluation

To assess the impact of a project on poverty reduction in rural areas (from the viewpoint of capacity-building of the poor), the study team proposed to look at two aspects, namely, "improvement of capability in production" and "improvement of capability in various aspects of life," each of which should be evaluated using the following seven parameters: 1) resources, 2) capital, 3) technology, 4) decision-making power, 5) organization, 6) infrastructure and 7) gender.

When considering indicators for impact assessment form the viewpoint of gender, one should be aware that qualitative impacts such as those measured by selfdevelopment capability and group development capability are often more important than quantitative ones. It would be impossible to quantify impact on gender in the absence of measures. In such a case that there is no "absolute measure," a preliminary study is necessary to compare the situation of the target groups before and after the project implementation on groups which implemented project activities and those which did not. A detailed base line study focusing on social analysis is particularly needed.

(7) Extending the effects of increased yields to beneficiaries

The mainstream of technical cooperation projects in agriculture, forestry and fisheries take a yield-oriented approach, but it usually takes time for such projects to impact farmers. For example, extension services do not bring farmers tangible benefits immediately. In such a case, the intensity of impact on farmers depends on the abilities of the intermediary agents who bring new technologies to farmers (e.g., extension workers). Therefore, the project should recognize the importance of such intermediary agents and aim to strengthen their capacity by education and training. Evaluation of the process of intermediation is also important.

(8) Need for long-term cooperation to address disadvantaged groups in rural areas

When a project targets disadvantaged groups in the rural areas, namely, the poor, women and children, the expected impact on them should be larger entitlement ²), that is, an improvement of the conditions under which such groups can live by their own efforts. However, the project will not create larger entitlement for the disadvantaged groups unless the planners and managers fully recognize its importance.

Also, it takes time for the project inputs to reach disadvantaged groups, and more time is required to have impact on them. Therefore, a project of this type tends to need long-term cooperation with the implementation of some additional measures such as Follow-up Cooperation. At the same time, with regard to entitlement, inputs from outsiders might be necessary at an early stage of the project but should be minimal.

(9) Establishment of a combination approach

When considering the issue, "how the impact of cooperation in agriculture, forestry and fisheries reaches farmers," one should understand the characteristics of rural areas, particularly that the "place of production" and the "place of living" are the same. This means that the approach of the cooperation includes two aspects, production and life. Direct intervention to both aspects brings greater impact than focusing only on one aspect and expecting effects to spillover. Projects will look quite different depending on the approach taken.

In planning and implementing a project, therefore, it is important to target the right groups and adopt a functional approach, namely, a systematic combination of several JICA schemes (e.g., Project-type Technical Cooperation, Development Studies, Grant Aid, JOCVs) as already practiced in the studied projects of this evaluation.

(10) Evaluation for the utilization of project experience

Through this study the team recognized that the experience of past projects had not been fully incorporated in subsequent ones. Japan has more than 35 years of experience in technical cooperation in Nepal, and the society and economy of the country have changed dramatically over this period. However, the problems that confront projects remain basically the same. The team visited past JICA project sites and found that some projects still had effects, some had little impact and some had been transformed to other projects. This suggests the importance of long-term analysis of project impact and future evaluation studies similar to this one, but from a longer perspective. Such a study should not be an evaluation of individual projects but a comprehensive impact assessment of the cooperation (to a sector/ area/country) as a whole.

9. Attempts to Feedback the Evaluation Results

In order to feedback the result of this evaluation to those who concerned to development aid, JICA evaluation seminar "Poverty Reduction and JICA's Cooperation" was conducted at Institute for International Cooperation in 17 November 2001.

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²⁾ According to Amartia Sen, entitlement is "a combination of goods that an individual can dispose of on his/her own discretion through exercising rights or opportunities given by others." While empowerment presupposes the existence of those who empower (i.e., donors), entitlement is based on the premise that beneficiaries have a primary role and donors play supportive roles to provide materials and know-how. In other wards, entitlement emphasizes self-help of the beneficiaries, and is achieved by their active participation in the project.

Chapter 3 Terminal Evaluation

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Chapter 3 Terminal Evaluation

Following is the list of terminal evaluation conducted in FY1999. 5 evaluation results (\bigstar) were presented in this summary version. Other 87 evaluation could be downloaded from JICA homepage.

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Indonesia

Implementation Support for Integrated Area Development Project in Barru District

Project Site

Barru District (South Sulawesi Province)

1. Background of Project

The Sixth Development Plan of Indonesia identified three issues that were 1) improving the quality of human resources, 2) economic development and economic structural adjustment, and 3) equality of income distribution and alleviation of poverty, and then set measures for eliminating regional disparities and alleviation of poverty with a central focus on the Eastern region. An Integrated Area Development Program, which was initiated by the Ministry of Home Affairs, had been carried out with the policies of human resources development, upgrade of living standards, and the combination of environment and development; however, in local areas, there was a lack of experience and personnel who could contribute to the effective implementation of the project and the resolution of regional-specific issues. Under these circumstances, the Government of Indonesia requested Japan to provide cooperation through the dispatch of a team of Japan Overseas Cooperation Volunteers (hereinafter referred to as JOCV)¹⁾ to support implementing the Integrated Area Development Program in the Barru District, South Sulawesi Province.

2. Project Overview

(1) Period of Cooperation

1 January 1995-31 December 1999

(2) Type of Cooperation

JOCV Team Dispatch Program

(3) Partner Country's Implementing Organizations

Regional Development Planning Board (BAPPEDA Tk. I)

South Sulawesi of Province Regional development Planning Board (BAPPEDA Tk. II) of Baru District

(4) Narrative Summary

1)Overall Goal

Productivity of economic activities in the targeted villages is increased.

2)Project Purpose

Economic activities in the targeted villages are

fostered.

3)Outputs

- a) Farming system is improved.
- b) Human resources are developed.
- c) Quality of local governmental apparatus related to the regional development is improved

Indonesia

Australia

d) Farming support system (infrastructure, etc.) is improved.

4)Inputs

Japanese Side Junior experts

Junior experts	25 (7 were Senior volunteers and 2 were short-term volunteers)
	short-term volumeers)
Trainees received	9
Equipment	approx. 43 million yen
Local cost	approx. 41 million yen
Indonesian Side	
Counterparts	

1.35 billion rupiah (approx, 43 million yen)

3. Members of Evaluation Team

Team Leader:

Local cost

Yoshihiko NISHIMURA, Professor, Graduate School of International Development, Nagoya University

Evaluation Planning:

Land and facilities

Yoshie YAMASHITA, Deputy Director, First Overseas Assignment Division, Secretariat of JOCV, JICA

Project Evaluation:

Kiyoka FUJITA, First Overseas Assignment Division, Secretariat of JOCV, JICA

and the second second

Evaluation Analysis:

Ikuo YAMAMOTO, IC Net Limited

4. Period of Evaluation

25 November 1999-8 December 1999

5. Results of Evaluation

(1) Efficiency

The dispatch of JOCVs was carried out almost on schedule and the composition and scale of the JOCV Project were also appropriate except for the one-year late dispatch of the JOCV of irrigation engineering due to difficulty in identifying an appropriate person.

The implementing organizations on the Indonesian side did not have sufficient understanding of the role of the JOCV program in JICA's cooperation and in some cases they requested large-scale inputs as well as outputs that the JOCV program could not cover. At the same time, the counterparts considered that JOCVs were students in training. Such misunderstandings hindered the smooth progress of the project. In addition, it was difficult to coordinate relevant local organizations in order to run such a cross-sectored project, since Indonesia had a strict vertical administrative system; therefore, regretfully, the project was often isolated.

Furthermore, both crops and irrigation infrastructure, which were provided through the project, were heavily damaged by natural disasters, such as floods and droughts, which occurred between 1997 and 1999. Some JOCVs were forced to evacuate their project sites due to the deterioration of public security in 1998, and this caused a delay in some activities, particularly the planting of melons.

(2) Effectiveness

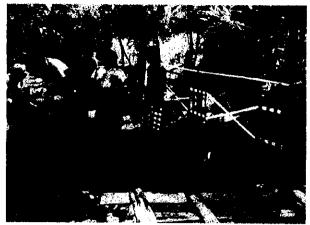
As mentioned above, there were some delays in activities due to natural disasters and other external conditions. However, methods of crop planting, improvement of markets, cattle and goat raising, construction of domestic water systems, raising seedlings, and other assistance and information for the regeneration of rural economies were provided to the farmers. In addition, the activities of farmers' organizations, such as the management of facilities and group crop planting, became more active; therefore, project purposes were achieved for the most part.

(3) Impact

There were some positive impacts, such as an increase in agricultural productivity resulting from the establishment and improvement of agricultural infrastructure, and an increase in the number of businessmen visiting villages due to the improvement of markets. In particular, the establishment of infrastructure brought the impacts of secured domestic water use, saved work hours and reduced diseases. On the other hand, there was also the negative impact that the project enhanced people's mental dependence towards aid.

(4) Relevance

The Barru district was still one of the poorest districts in Indonesia at the time of the evaluation; thus, the goal and purpose of this project were relevant to farmer's needs as well as the development policies of Indonesia.



The Project promoted women's participation in income generation activities though breeding of goats

(5) Sustainability

It was assumed that individual local offices would take responsibility for the activities that were expected to be continued after the completion of the cooperation period; therefore, the management system and the budget were secured. Independent systems for management of domestic water facilities and markets for farmers were also established through technology transfer of this project. It was also evaluated that expected inputs, such as land for facility installation, resources obtainable in villages, a portion of funds, and labor power, were appropriately provided by farmers as a result of participatory activities of the project. As such, these factors enhanced the sustainability of the project.

6. Lessons Learned and Recommendations (1) Lessons Learned

It is necessary to start implementing a project after establishing a common understanding of the project purpose, details of activities and inputs among the relevant actors of the project through preliminary research and successive discussions with partner countries.

The method of coordination among the relevant governmental organizations responsible for the different sectors covered by the project is also required in order to run a cross-sectored project in a country with a strict vertical administrative structure.

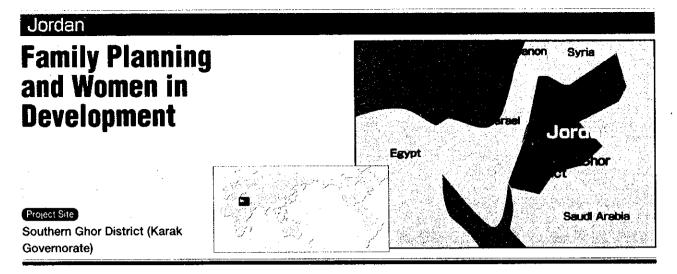
(2) Recommendations

It was recommended that the project be terminated at the end of December 1999 as planned. However, it was considered reasonable that restrictive and complementary cooperation be carried over for the activities that began late and were behind schedule.

7. Follow-up Situation

Based on the above recommendations, Follow-up cooperation was carried out from 1 January 2000 to 31 December 2001.

¹⁾ JOCV is called as Junior Experts in Indonesia



1. Background of Projec

In Jordan, women marry young and have many children in keeping with the culture and religion, so the annual average population growth is high at 3.4 percent. At the same time, the economy had been stagnant during and shortly after the Gulf crisis in 1990, as a result of the repatriation of overseas migrant workers and decreased assistance from the other oil-producing Middle-East countries. The high population growth also hinders economic restoration. With this situation, the Government of Jordan considered that population growth was an important national problem, and formulated a comprehensive family planning policy that included health, gender and education issues. Family planning and the full participation of women in society were promoted, but due to the lack of technical experience and human resources in this area, the Government of Jordan requested the Government of Japan to provide technical cooperation.

2. Project Overview

(1) Period of Cooperation

1 July 1997-30 June 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

National Population Commission (NPC) Ministry of Health Jordan Hashemite Fund for Human Development (JOHUD)

(4) Narrative Summary

- Overall Goal Population growth is reduced in Southern Ghor District, Karak Governorate.
- Project Purpose
 Family Planning Practice is promoted in Southern Ghor District, Karak Governorate.
- 3) Outputs

- a) Information on demographic, health and socioeconomic conditions is collected and used for project activities.
- b) People's awareness on health and socioeconomic issues in the project area is enhanced.
- c) Family planning and reproductive health services in the project area are strengthened.
- d) Women in the project area participate in economic activities.

4) Inputs

Japanese Side

a aparter of the second	
Long-term experts	6
Short-term experts	10
Trainees received	9
Equipment	103 million yen
Local cost	28 million yen
Jordan Side	*
Counterparts	6

Counterparts Land and facilities Local cost

3. Members of Evaluation Team

Leader:

Makoto ATOH, Deputy Director General, National Institute of Population and Social Security Research

Obstetrics:

Shigeki MINOURA, Director, Department of Obstetrics and Gynecology, International Medical Center of Japan

Reproductive Health:

Aiko IIJIMA, Director, Human Resource Development Division, Japanese Organization for International Cooperation in Family Planning

WID:

Azumi TSUGE, Associate Professor, Department of Sociology, Faculty of Sociology and Social Work, Meiji Gakuin University

Cooperation Planning:

Tsutomu NAKANO, Deputy Director, Second Medical

Cooperation Division, Medical Cooperation Department, Japan International Cooperation Agency

Evaluation Analysis:

Kimiko ABE, International Development Center of Japan

4. Period of Evaluation

19 October 1999-31 October 1999

5. Results of Evaluation

(1) Efficiency

The inputs from the Japanese side were generally appropriate in quality, quantity and timing, and operation and maintenance of equipment were satisfactory. However, the experts for income generation were dispatched only in the final year of the cooperation (May 1999), so the output that women participate in economic activities could not be achieved.

(2) Effectiveness

Regarding reproductive health, as a result of functional expansion in the Maternal and Child Health Center, and education and dissemination activities in cooperation with community development promoters selected from men and women in the communities and Moslem leaders, the number of outpatients seeking a first medical examination for contraception increased from 107 (1996) to 224 (1998).

Meanwhile, regarding women's participation in economic activities, as mentioned above, the activity was started late, so at the time of the evaluation the work plans for apiculture and goat rearing were being formulated, and the training for women was just starting.

Although the project objective of promoting family planning cannot be achieved in a short time, considering the outputs achieved, as mentioned above, and the 50 percent contraceptive prevalence rate estimated by the experts, it is perceived that the project purpose would be achieved by the end of the cooperation period.

(3) Impact

By employing young women in their 20s as community development promoters, this project provided the opportunity to participate in health and social activities, and enabled them to gain new experience. Also, by inviting traditional Moslem leaders who have strong influence in Islamic society to the lectures and seminars, the project succeeded in sensitizing rural men and Moslem leaders to family planning.

(4) Relevance

The overall goal and the project purpose are consistent with the policies of Jordan which promote the reduction of population growth and family planning, and



A community development promoter reporting on the results of their survey at a monthly meeting

therefore the project has high relevancy.

(5) Sustainability

As family planning and reproductive health are important policies of the Government of Jordan, it was expected that the government of Jordan would continuously support the NPC.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When various types of activities are implemented to achieve a certain purpose as was the case in this project, it is necessary to have a common understanding of each activity among stakeholders and to make efforts to link and coordinate activities in order to integrate outputs from each activity into the project purpose so that they contribute to achieving the overall goal.

(2) Recommendations

The project achieved the outputs satisfactorily in terms of raising the people's awareness, improvement of health services and empowerment through women's participation in economic activities. However, as mentioned above, it is necessary to recognize that these activities are all measures to reduce population growth. For this, it is necessary to confirm the changes in people's ideas about delivery and child rearing, awareness of family planning, contraceptive prevalence rate and continuous user rate.

7. Follow-up Situation

After the completion of the cooperation period, the target area was expanded to the whole of Karak Governorate, and Phase II cooperation is now being implemented (from July 1 2000 to June 30, 2003).

Senegal

Reinforcement of Rural Water Supply System

Project Sites Tambacounda, Kaolack, Touba Bogo, Medina Boulel Sy, Darou Minam I, Moure, Boke Dialoube, Gaoudi Goti, Taïba Ndiaye, Dialakoto, Goumbayel, Kara Vendou

1. Background of Project

In Senegal, located south of the Sahara desert, rural communities, home to about 60 percent of the total population, faced a serious shortage of water due to the drought of the 1970s and 1980s. Therefore, the Government of Senegal identified the establishment of rural water works as an urgent and primary issue, and attempted to formulate a concrete maintenance plan. Japan had implemented some cooperation programs in the field of rural water supply in Senegal, but repair work and extension of the existing water supply facilities was necessary as part of the network was more than ten years old and the demand for water grew apace the growth in population. Establishing a maintenance center was also needed to conduct large-scale repair work of water supply facilities.

Under these circumstances, the Government of Senegal formulated "the Project for Reinforcement of Rural Water Supply System" and requested Grant Aid from Japan with the aims of renovating and extending ten water supply facilities and two maintenance centers.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1997

(2) Type of Cooperation Grant Aid

Grant Ald

(3) Partner Country's Implementing Organization Department of Waterworks, Ministry of Hydraulics

(4) Narrative Summary

- Overall Goal Rural communities and rural industry in Senegal are developed.
- Project Purpose

A stable water supply is provided to community people in the targeted villages for domestic use and for livestock.

Senee

Mauritania

Dialakoto

Gaoudi Goti --Boke Dialoube

el Sv

Guinee

Mal

bacounda Soumbave

- 3) Outputs
 - a) Ten water supply facilities are renovated.

Vendou

Gamble

Linea Bissau

b) Two maintenance centers are established.

4) Inputs

Japanese Side

Grant

Total 1.39 billion yen (E/N amount)

Senegal Side Water supply facilities Land

3. Members of Evaluation Team

Team Leader:

Kiyohumi KONISHI Director, Project Monitoring and Coordination Division, Grant Aid Management Department, JICA

Facilities Study:

Kinichi HASHIMOTO, GIJUTU KOKAI

Operation and Maintenance Study:

Yasuyo OKUMOTO, Institute for International Cooperation, JICA

Interpreter:

Toshiyuki MORITA, Japan International Cooperation Center

4. Period of Evaluation

10 April 2000-20 April 2000

5. Results of Evaluation

(1) Efficiency

The project was efficiently implemented and the construction of facilities and procurement of equipment

were conducted as initially planned.

(2) Effectiveness

In all three villages where the evaluation study was carried out (Dialakoto, Goumbayel, and Taïba Ndiaye), 35 liters of safe water were distributed per person per day, and water for livestock was also secured. The same situation was identified in the other seven villages where perfunctory examinations were carried out in tandem with this evaluation study.

Before the project was implemented, there was only one head office for maintenance work which was responsible for the maintenance of about 230 deep wells, therefore it took two to three months to carry out repair work on distant facilities. After the establishment of the two maintenance centers, the wait period for repair work was reduced to about one week. As such, it was considered that the project purpose was accomplished.

(3) Impact

It was recognized that various self-help activities were attempted in the villages according to their conditions. For example, one village prepared vegetable gardens and started to grow vegetables in order to utilize surplus water for productive activities, with the women's association receiving a subsidy from the Ministry of Agriculture. Another village established a day care center and attempted group nursing in order to make collaborative work of vegetable cultivation easier. As these results showed, it was evaluated that the project had a significant impact on the improvement of people's lives.

(4) Relevance

Extension and improvement of water facilities and enhancement and construction of rural infrastructure were incorporated in the Ninth Plan for Social and Economic Development (1997-2001) of the Government of Senegal as well as in its strategic policy that set the goals of quality improvement of government services and provision of infrastructure work and enhancement of rural development and integration. Therefore, the relevance of this project, which aimed at establishing rural water supply facilities, was evaluated to be high.

(5) Sustainability

A maintenance system was established in each village as a result of the efforts of the Government of Senegal and no problems were found in terms of facility operation by community people. In principle, funds for operation of water supply facilities were covered by village people and the money was collected by the water management association. In the villages visited by the evaluation team, a clear collection system was there and collection of fees



Water supply facilities in Dialakoto village

was strictly enforced.

In order for people in rural communities to afford water fees, they have ways to earn a cash income. In some villages, people started to grow vegetables using surplus water, even though they lacked the knowledge and skills of vegetable cultivation. Measures such as the transfer of technology on vegetable cultivation seemed to be necessary in order to raise productivity, ensure a cash income, and achieve efficient use of water.

In terms of the maintenance center, although the government's financial situation was difficult at the time, appropriate allocation of budget and personnel was secured by the Ministry of Hydraulics. Therefore, it was considered that there would be no problem of sustainability.

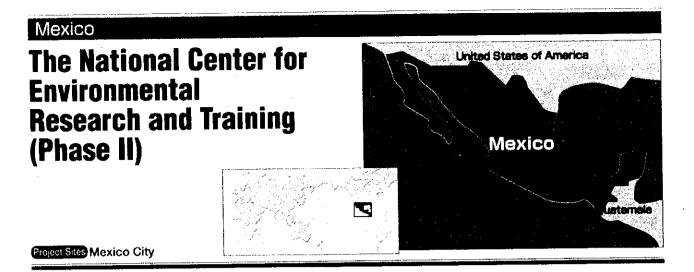
6. Lessons Learned and Recommendations

(1) Lessons Learned

When a cooperation program is carried out in the field of rural water supply, cooperation should not be limited only to the area of hardware, such as provision of facilities and equipment. Cooperation for software, such as low-profile support for rural development, also should be considered together with the partner countries and community people.

(2) Recommendations

It was evaluated that there was no need for Follow-up cooperation as this project achieved the expected outcomes. However, it would be desirable to consider the possibility of transfer of technology on vegetable cultivation in order to further enhance sustainability of this project through achieving efficient use of water and secure collection of water fees.



1. Background of Project

In the United Mexican States, environmental pollution is becoming a serious national issue. Hazardous waste and air pollution due to the population density in urban areas, particularly Mexico City, has reached a dangerous level. The lack of human resources in the field of environmental protection is a related issue. Considering these circumstances, the Mexican Government scught to establish the National Center for Environmental Research and Training (CENICA) to conduct research and training relevant to environmental protection, and requested Project-type Technical Cooperation from the Japanese Government. Responding to the request, the Japanese Government carried out Phase I of the project for two years during which the organization system of CENICA was established and the basic technologies to deal with air pollution, hazardous waste and industrial pollution were transferred. Phase II of the cooperation started in July 1997 and continued for three years. It aimed at strengthening the structure and activities of CENICA, which were established in the first phase.

2. Project Overview

(1) Period of Cooperation

1 July 1997-30 June 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization National Institute of Ecology (INE)

(4) Narrative Summary

- 1) Overall Goal Environmental protection in the United Mexican
- States is improved.
 Project Purpose
 The structure and activities, in particular those addressing air pollution and hazardous waste, of the National Center for Environmental Research and Training (CENICA) are strengthened.
- 3) Outputs

- a) Management of CENICA is improved
- b) Facilities and equipment necessary for environmental research and training are effectively used by counterpart personnel.
- c) Technical information related to the establishment of environmental protection standards is provided to relevant Mexican authorities.
- d) Knowledge and techniques of federal government officials, local authorities and industry personnel on environmental protection are improved.
- e) The role of CENICA in data collection and publications related to environmental matters (particularly in the field of air pollution and hazardous waste) is improved.

4) inputs

4) Inpuis	
Japanese Side	
Long-term experts	7
Short-term experts	11
Trainees received	12
Equipment	464 million yen
Mexican Side	
Counterparts	31
Land and facilities	
Local cost	approx. 360 million yen

3. Members of Evaluation Team

Team Leader:

Hiromi CHIHARA, Development Specialist, JICA Air Pollution:

Shinji WAKAMATSU, Investigator, Urban Air Quality Research Team, PM2.5&DEP Research Project, National Institute for Environmental Studies

Hazardous Waste:

Takeo URABE, Chief Researcher, Tokyo Metropolitan Research Institute for Waste Management

Industrial Public Pollution:

Ikuo TAMORI, Technical Advisor, Japan Quality Assurance Organization

Evaluation Planning:

Hiroshi TANABE, Deputy Director, Second Social

Development Cooperation Division, Social Development Cooperation Department, JICA Evaluation Analysis: Koichi HYOGO, PADECO Co., Ltd.

Rolein HT000, TADECO CO., ER

4. Period of Evaluation

11 January 2000-21 January 2000

5. Results of Evaluation

(1) Efficiency

In general, inputs from both the Mexican and Japanese sides were carried out efficiently for achieving target outcomes. The counterpart training and provision of necessary facilities matched the Mexican needs and contributed to strengthening the personnel and physical resources of CENICA. However, technology transfer was disrupted by the delayed establishment of facilities, particularly the power distribution system, on the Mexican side and late dispatch of the long-term experts in hazardous waste due to the absence of appropriate personnel.

(2) Effectiveness

The basic structure, management capability, and technologies of CENICA were established during the first phase. Building on this foundation, in Phase II, technologies to establish and operate the monitoring station and the experimental facilities in the field of air pollution were transferred. CENICA has been involved in formulating and revising more than eight national environmental standards, including the official standard for automobile exhaust fumes. Therefore, the project purpose of strengthening the basic structure and activities of CENICA was deemed to be achieved. However, some problems remain such as the delay in the Dispatch of Experts in practical analysis techniques and hazardous waste and the slow development of measures for waste disposal.

(3) Impact

Improvements were found in the area of environmental public administration. Some outputs of the project were reflected in the administrative level discussions at the Exploratory Committee on the formulation of official standards. However, it is often difficult to carry out specific environmental protection activities in the short-term for the government, local governments and public enterprises. More time is needed for CENICA to establish concrete environmental measures, which would demonstrate the impact of the support.

(4) Relevance

This project was implemented in accordance with the Six-Year National Environment Plan. The significance of the project has not been modified, thus the relevance of the project is deemed to be high.



An expert lectures counterparts in a laboratory

(5) Sustainability

Institutional sustainability is considered to be high since it is expected that CENICA will be promoted to the level of department in the Ministry for the Environment, Natural Resources and Fisheries. Furthermore, allocation of the budget will also be more secure subsequent to the promotion, and thus CENICA is expected to become financially sustainable. While the basic technical capability of CENICA was established, the level of technology is still not high enough for CENICA to become a leading institution at the time of the evaluation.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It is effective to carry out a project in phases when the pre-conditions for the implementation of the cooperation are not met yet but early project start is needed. When the Phase II cooperation is formulated it is necessary to establish clear targets and indicators in order to define goals precisely and monitor the progress of achieving goals.

In projects aiming at capacity building and strengthening of research institutions, it is important that new knowledge and skills are applied through research to problem-solving in the real world. For this purpose, it is necessary to strengthen the partnership among the various sectors, such as research, experiment, training, and information dissemination, and to ensure that practical skills and techniques are gained through the project.

(2) **Recommendations**

An extension of the project was recommended for further enhancement of the organizational structure, clarification of the operation plan, and improvement of the research capacity of CENICA.

7. Follow-up Situation

Following the above-mentioned recommendation, a two-year Follow-up cooperation ending 30 June 2001 was implemented.



1. Background of Project

In the highlands of Papua New Guinea, which occupy 70% of the total area, most people live by subsistence farming, and the shortage of animal protein and lack of employment opportunities were problems in the villages. To overcome these problems, the Government of Papua New Guinea, in response to advice by the FAO in the 1980s, established the Highlands Aquaculture Development Center to promote fish farming in inland waters of the highlands. But due to a lack of human resources, materials and equipment, the Center did not function as planned. Therefore, the Government of Papua New Guinea officially requested the Government of Japan to provide technical co-operation. The Government of Japan dispatched Individual Experts from 1993, and in 1996 when the Center was transferred from the National Fisheries Authority to the care of the Government of the Eastern Highlands, this project started by appointing the Eastern Highlands Provincial Government as the implementing agency.

2. Project Overview

(1) Period of Cooperation

23 June 1996-22 June 1999

(2) Type of Cooperation

Expert Team Dispatch Program

(3) Partner Country Implementing Organization The Government of Eastern Highlands Province

(4) Narrative Summary

- 1) Overall Goal
 - Aquaculture in the highland regions is promoted.Project Purpose
 - Technical capacities of aquaculture in the highlands are enhanced.
 - 3) Outputs

- a) Fry production is increased.
- b) Training for aquaculture extension is conducted.
- c) Experimental research for appropriate technology for aquaculture is conducted.

4) Inputs

Japanese Side	
Long-term Experts	3
Short-term Experts	4
Trainees received	10
Equipment	approx. 37 million yen
Local cost	approx. 24 million yen
Papua New Guinea Side	
Counterparts	12
Land and facilities	
Local cost	286,000 kina (approx. 17.0 million yen)

3. Members of Evaluation Team

Team Leader:

Kiyoshi SAKAI, Associate Professor, Tokyo University of Fisheries

Fisheries Development:

Hiroshi IKENOUE, Fisheries and Aquaculture International Co., Ltd.

Coordination and Co-operation Planning:

Yoshihiro SATO, Training Division, Kanagawa International Fisheries Training Center

4. Period of Evaluation

28 June 1999-8 July 1999

5 Results of Evaluation

(1) Efficiency

While implementing this project, there were several difficult conditions such as the change of competent

authority of the Aquaculture Development Center through organizational reform in the Government of Papua New Guinea, personnel changes also through the reform, a drought in 1997, and public disturbances at the project sites. Despite these problems, many outputs were achieved in the relatively short three-year period. In addition to technical training given by the expert team, it was concluded that the materials, equipment, local administration costs and renovation of the aquaculture facilities were input efficiently. From this point of view, the project was evaluated to have been implemented efficiently.

(2) Effectiveness

The project achieved several outputs: one million fries for carp farming were produced each year, more than 250 participants received training at the Center, and experiments on new types of fish and technologies were conducted. Therefore, the project purpose was mostly achieved.

(3) Impact

Through the provision of an increased number of fries from the Center, small-scale aquaculture of carp and rainbow trout were spread. As a result, farmers who used to depend mainly upon sweet potatoes for their food intake were now eating fish and earning cash, with subsequent changes to lifestyle. As a result, people in the coastal regions became interested in theses changes and small-scale aquaculture, and it was expected that smallscale aquaculture would expand beyond the highland areas throughout the country.

(4) Relevance

Although the competent authority for the Highlands Aquaculture Development Center was initially the Department of Fisheries, which was reorganized to the National Fisheries Authority, the Authority was required to implement projects on a self-supporting basis by the Government of Papua New Guinea. Therefore, the Authority pulled out of any venture that did not make a profit in a short period, such as small-scale industry extension for small-scale farmers. In line with the policy of decentralization in Papua New Guinea, the Eastern Highlands Provincial Government came to be the competent authority for the Center, but the Government did not have any specific development plan that supported the overall goals of the project.

However, after the impacts of aquaculture projects on the intake of animal protein and employment creation became clear, the National Food Policies formulated by the Government of Papua New Guinea, listed small-scale aquaculture as an important policy, and accordingly the project was justified in the context of the National Policy. Therefore, the project has high relevance.

(5) Sustainability

As mentioned above, the project initially experienced organizational and financial instability in the implementing agency, but after 1998 when the project outputs were identified, the budget for the project in the Provincial and Central Government were increased. Technically, the counterparts acquired sufficient technologies for the production of carp fries and indeed, the output of fries increased. However, despite the increase of fries output, the Center cannot manage to sell the products on its own. Also in the administration and management of the Center, it was not enough to be selfreliant as it depended on the Japanese experts.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Due to economic stagnation in Papua New Guinea, Government support was too unstable to ensure the sustainability of overseas technical co-operation. Therefore, when similar projects are introduced in the country, it is important that not only assistance for technology transfer is provided, but also support for a sustainable management system.

(2) Recommendation

In order to promote sustainability for the Aquaculture Development Center, it was recommended that experts in training, planning, implementation and management of all activities in the Center be dispatched for at least two years. Also, for technical extension activities in the remote regions where the experts cannot provide support, Japan Overseas Cooperation Volunteers (JOCV) in the areas of carp and trout should be dispatched.

7. Follow-up Situation

In response to the recommendation above, an Individual Expert "Freshwater Aquaculture Advisor" and two JOCVs in fish farming were dispatched on 24 May 2000 for two years.

Also, to further spread the outputs of the cooperation, a five-year In-country Training Program called "Fresh Water Aquaculture Course" has been conducted since 2000.

JICA's Cooperation Scheme

Acceptance of Trainees

Receiving requests from the governments of developing countries, the Japanese government accepts leading administrators, engineers, technicians, and researchers of those countries as trainees and conducts technical training aiming to transfer technologies and to deepen their understanding of Japan. There are two types of training courses; one is a group-training course with fixed programs to which participants are invited; the other is an individual training course that is designed to meet specific requests of its participant.

Aftercare Cooperation

After the completion of its cooperation period, a project implemented as a project-type technical cooperation is handed over to the government of the recipient country and operated and maintained by the recipient country's self-help efforts. However, in case of a project is poorly maintained, its technology level is declining, or in case a newly developed technology is not successfully incorporated, JICA may implement aftercare cooperation. Specifically, it includes repair of supplied equipment, supply of new equipment and supplemental technical guidance by Japanese experts.

Community Empowerment Program

This program was started in fiscal 1997 on the basis of the "Global Welfare Initiatives" proposed by Japan at the Lyon Summit in 1996. Support related to maternal and child health; welfare of the elderly, the disabled and children; and poverty alleviation measures are commissioned by JICA for NGOs active in the regions concerned (local NGOs).

Country-focused Training Course

These training courses limit participation to a certain country or region. Training subjects are

narrowed down to focus on development issues that are unique to the country or region involved, and 5-10 trainees are accepted.

Development Study

Development study support the formulation of plans for public projects that contribute to social and economic advancement in developing countries. While the studies are under way, they also serve as mediums for the transfer of analytical skills and methods of planning formulation and survey to counterparts in the recipient country. Reports prepared on the basis of study results provide the recipient countries' governments with data for assessing social and economic development policies. They also offer international organizations and donor countries materials for studying financial aid and technical cooperation. In most cases, the plans proposed by the reports are realized with funds obtained from Japanese yen loan and grant aid. Skills transferred through the studies are also useful when working on projects financed by the recipient country and when carrying out other studies.

Dispatch of Experts

Experts dispatched to developing countries and international organizations carry out drafting of development plans, studies, research, instruction, dissemination activities, consulting and other work at a variety of locations, including government-related organizations, testing and research institutes, schools and instruction and training institutions. As for the selection of experts, JICA either asks recommendations of appropriate personnel of related ministries and agencies, or chooses from among experts who are already registered. There are two types of experts, depending on the method of dispatch: individual expert and project expert. The former is individually dispatched, while the latter is dispatched in accordance with project-type technical cooperation. Experts are also classified by length of dispatch term into long-term (one year or longer) and short-term (less than one year).

• Expert Team Dispatch Program (Mini-project)

A form of cooperation placed intermediate between project-type technical cooperation and dispatch of an individual expert. The dispatch of a experts team is considered the core of the program, and acceptance of trainees and supply of equipment are combined as needed. The cooperation period is in principle three years, shorter than five years of project-type technical cooperation. A program is not large-scale cooperation that includes the startup of new organizations and systems. Instead, it is designed to offer instruction and advice to counterparts on specific technology topics while working within the existing local organizational structure.

Grant Aid

Grant Aid is a from of ODA involving provision of funds to the governments of developing countries without obligation of repayment. The aim is to support economic and social development by assisting the government of recipient countries to introduce and/or upgrade its public facilities and equipment, The Japanese Ministry of Foreign Affairs provides funds for projects, and JICA is in charge of (1) prior studies, (2) supervision aimed at ensuring that Grant Aid projects are being executed, and (3) follow-up assistance to maintain and enhance the effects of projects.

· Grant Assistance for Grassroots Projects

A form of grant aid executed through Japan's overseas diplomatic offices to support small-scale projects that cannot be dealt with adequately by means of ordinary grant aid. Initiated in response to requests from local governments and NGOs in developing countries.

Intellectual Support

Refers to support for countries moving toward democracy and a market economy with insufficient

expertise and human resources to set up and manage economic and other institutions on their own. Intellectual support is provided in forms such as "democracy seminars" at which Japan's experience, past and present, in matters such as legal, administrative and parliamentary systems are presented; acceptance of training participants in fields such as market economy management and administration; and the dispatch of experts to advise on policy matters.

Japan Overseas Cooperation Volunteers (JOCV)

Japan Overseas Cooperation Volunteers (JOCV) program assists and encourages overseas activities on the part of young people who wish to cooperate in the economic and social development of developing countries on the basis of requests from these countries. JOCVs generally spend two years in developing countries, living and working with the local people. The experience also benefits the volunteers themselves as they strive to overcome the various difficulties they face in their personal relations and work.

JICA Partnership Program

In the context of diversification of needs among developing countries, the "JICA Partnership Program for NGOs, Local Governments and Institutes" started in fiscal 1999. This program is concerned with the provision of cooperation in areas of social development involving small-scale but detailed response and cooperation of the intellectual support type. JICA is implementing the program on the basis of tie-ups with Japanese NGOs, local government authorities, universities, and private companies processing practical expertise in these areas that JICA regards as partners in its ODA program.

Pivotal Support for Important Policies

Direct intellectual support for pivotal institutions within the governments of developing countries responsible for formulation of important policies such as financial and monetary policy, industrial policy, and regional policy concerned with transition to a market economy. Intellectual support for countries in the process of institutional transition is a typical form of applied aid involving policy support. To implement this type of support systematically, the Japanese government introduced a "program of pivotal support for important policies" in 1995 for implementation in Poland, Uzbekistan and Vietnam. Begun in 1994, "market economy-type development studies" offer higher levels of intellectual support for introduction of the market economy.

•Project-type Technical Cooperation

A type of technical cooperation under which three kinds of aid schemes (dispatch of experts, acceptance of trainees, and provision of equipment) are integrated and implemented as a project. Its aims are technology transfer and human resources development in developing countries.

Provision of Equipment Supply

The provision without compensation of equipment needed generally for technology transfer. JICA provides necessary equipment as part of technical cooperation toward the effective implementation of the various types of technical cooperation projects being carried out by Japan.

Research Cooperation

A type of technical cooperation under which researchers from Japan and developing countries engage in joint research on topics related to economic and social development in specific developing countries. JICA has been engaged in research cooperation since 1977 within the framework of the individual expert dispatch program. As with project-type technical cooperation, research cooperation begins with the exchange of a record of discussions (R/D) to clarify the project details. Cooperation normally lasts three years. JICA sends groups of experts, accepts counterparts for training, and, when necessary, provides portable equipment and local working costs.

South-south Cooperation

Mutual economic development between developing countries through regional cooperation. Development in these countries was previously thought to depend upon financial and technical aid from more developed countries. But, as evident in the emergence since the 1970s of the Organization of Petroleum Exporting Countries (OPEC) and the newly industrializing economies (NIEs), the developing countries have diversified and we are now aware of how important it is for them to cooperate among themselves. In particular, the capital-intensive, knowledge-intensive technology of the more developed countries often fails to meet the needs of developing nations, whose main need is for labor-intensive technology. Since the late 1970s, we have been encouraging cooperation between the developing nations ("South-South cooperation") through institutions such as the United Nations Conference on Trade and Development (UNCTAD).

Third-country Training Program

Training implemented by JICA aimed at enabling a developing country subject to technology transfer from Japan to hand on the skills it has acquired to other countries in the same region. Conceptually, Japan is the "first-country," the recipient of Japanese technology is the "second-country," and the neighboring country is the "third-country."

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