

Terminal Evaluation

Asia

1. Outline of the Project

Country:

India

Project title:

The Project for Promotion of Popularizing Practical Bivoltine Sericulture Technology

Issue/Sector:

Sericulture

Cooperation scheme:

Project-type Technical Cooperation

Division in charge:

Livestock and Horticulture Division, Agricultural Development Cooperation Department

Total cost:

887 Million Yen

Period of Cooperation

1 April 1997 - 31 March 2002

Partner Country's Implementing Organization:

Central Silk Board, Ministry of Textiles (CSB)

Supporting Organization in Japan:

Ministry of Agriculture, Forestry and Fisheries of Japan

Related Cooperation:

Project-type Technical Cooperation; Bivoltine Sericulture Technology Development Project

1-1 Background of the Project

Most raw silk produced in India was multivoltine silk, the productivity and quality of which is low. Most of the high quality bivoltine silk used to manufacture Indian sari and other garments was imported from China. Additionally, although raw silk consumption had been increasing in India silk imports were becoming increasingly more difficult, and self-sufficiency had to be achieved as soon as possible. Under these circumstances, the Government of India requested the Government of Japan to provide technical cooperation for bivoltine silk production based on its "National Sericulture Project". In response to the request, the Government of Japan together with JICA implemented the "Bivoltine Sericulture Technology Development Project (BSTDP)" (1991-97) for bivoltine silk production at the laboratory level.

In order to disseminate this technique, the government of India then requested the Government of Japan to provide a second Project-type Technical Cooperation, "The Project for Promotion of Popularizing Practical Bivoltine Sericulture Technology in India". This Project was aimed at popularizing and settling the bivoltine sericulture technology for farmers and reelers in the country, training diffusers and expanding the technique to other provinces.

1-2 Project Overview

The Project aimed at popularizing bivoltine sericulture technology developed in the BSTDP for farmers and reelers. The Government of India with the aid of JICA implemented training both in India and Japan to the staff of the Central Silk Board (CSB), the personnel of the related organizations, and the personnel of the Departments of Sericulture (DOS) in Karnataka, Andhra Pradesh, Tamil Nadu. They also selected 142 farmers for a demonstrative project to introduce the series of developed techniques to them.

(1) Overall Goal

The bivoltine sericulture technology will be established at the farm level in order to meet the demand for high quantity bivoltine raw silk production in India, and thus to contribute to the sericulture of India.

(2) Project Purpose

The technology developed by BSTDP will be practical for future dissemination activities among farmers and reelers through the initiative of the Government of India.

(3) Outputs

- 1) Bivoltine Sericulture technology based on BSTDP is improved.
- 2) Technology developed by BSTDP is verified, demonstrated and popularized at the selected farmers and reelers level for future dissemination.
- 3) Technical staff of CSB and the Departments of Sericulture (DOS) of concerned states.

(4) Inputs

Japanese side:

Long-term Experts	13	Equipment	141 Million Yen
Short-term Experts	22	Local Cost	37 Million Yen
Trainees received	31		

Indian side:

Counterparts	59		
Equipment and Local Cost		8.468 Million Rupee (23 Million Yen)	

2. Evaluation Team

Members of Evaluation Team

Team Leader: Noriaki NIWA, Director of Livestock and Horticulture Division, Agricultural Development Cooperation Department, JICA
Silkworm seed breeding/Mulberry Cultivation/Silk Reeling: Teruo NISHIDE, Director, Insect Biotechnology and Sericology Dept., National Institute of Agrobiological Sciences
Sericulture Technology: Etsuko IGARASHI, Chief, Agriculture Production Bureau, Ministry of Agriculture, Forestry and Fisheries of Japan
Evaluation Analysis: Kayo TORII, Livestock and Horticulture Division, Agricultural Development Cooperation Department, JICA
Planning Evaluation: Masahiro OTAKE, Associate Expert, Livestock and Horticulture Division, Agricultural Development Cooperation Department, JICA

Period of Evaluation 15 July 2001 - 1 August 2001 **Type of Evaluation:**
Terminal Evaluation

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

The Government of India has set the target of bivoltine silk production to be increased to 5,000 tons a year. To attain this goal, it is necessary to establish bivoltine sericulture technology at farm level, the aim of the Project. As bivoltine silk is superior to the multivoltine silk in terms of price and profitability, the Project also meets the needs of the sericultural farmers.

(2) Effectiveness

As for silkworm seed production, the technology transferred to the counterparts was the property of National silkworm Seed Project and Silkworm Seed Technology Laboratory, related organizations of CSB. The technical instructors at the farm level, however, have not yet acquired the necessary techniques sufficiently; hence, quality management at the farm level is still

unsatisfactory. Improvement in quality management is necessary.

As a whole, the technology transfer to the counterparts and selected farmers and reelers was satisfactory, and the practical work process manuals in the local language were generated. With the outputs from the previous project, vital silkworms tolerant to high temperatures and diseases have been produced, which enabled bivoltine silk production during the summer. As a result of instruction to selected farmers, their production level has increased and remained stable at a higher level than expected, and their income has increased by two to four times. In addition, it was proved that the quality is consistent with the international standard. Judging from these indicators, this survey regards the Project Purpose as having been mostly accomplished.

(3) Efficiency

There was a need for a Long-term Expert in the area of silkworm seed production, although the expert was not included in the original plan. The Project could only recruit Short-term experts to meet the demand. Although these efforts produced certain results, it was a cause of some delay in technical transfer. It would have been better if a Long-term Expert had been on-site from the beginning of the Project.

The counterparts trained in Japan have been working for related silkworm organizations and there was no significant turnover. Therefore, it is considered that the technology transfer to counterparts was efficiently implemented.

(4) Impact

The impact of introducing bivoltine silk production is observed as successful as the non-selected farmers were eager to learn from selected farmers and were imitating the technology used at selected villages. What is more, the income level is on the rise (two to four times in the case of selected farmers, and more than double in the case of non-selected farmers). The recognition that bivoltine silk production brings an income increase has become widely spread, and the workload for woman is less because of the introduction of the equipment.

(5) Sustainability

CSB, the executing organization of the Project, consists of many institutions throughout India, and a staff of almost 5,000 (including about 2,000 technical staff). As is seen by the high technical level of the staff, personnel and organizational capacity seem to be sufficient. DOS holds quarterly meetings and joint meetings through the initiative of the Japanese experts, and such a mechanism to promote close coordination among the concerned organizations should be continued even after the termination of the Project. It is also necessary to enhance the capacity of Technical Service Center (TSC). Financially, the Government of India needs to investment in the infrastructure for the bivoltine sericulture, such as the irrigation systems and the power supply (the availability of electricity). A scheme by which the Government of India could provide financial support to the farmers for the initial investment should be established as well.

3-2 Factors that promoted realization of effects

(1) Factors concerning Planning

- 1) The Project matched the needs of the Government of India to promote bivoltine sericulture to combat farmer household poverty and increase the production of silk.
- 2) The following step-by-step approach was effective: adjusting the outputs of the former project to match the conditions of production sites and then promoting and demonstrating the methods at the farmers' level.

(2) Factors concerning the Implementation Process

- 1) Coordination and collaboration among the central government and local government through the initiative of the Japanese experts was a key of the success of the project. The experts' support not only in technical transfer but also in organizational management, resulted in fruitful outcomes from the technical instruction itself. Proactive suggestions of mechanisms for smooth implementation of the Project largely contributed to the result as well.
- 2) The appropriate number of qualified counterparts was allocated, and facilities and equipment were appropriately used, maintained and managed. Most of the trained counterparts were not transferred to other departments, and the outcome of the training was fully utilized.

3-3 Factors that impeded realization of effects

(1) Factors concerning Planning

- 1) The bivoltine silk production technique developed in the former project was too sophisticated and advanced. Therefore, in this Project, it took time to revise the technique to the level that the average farmer in India could introduce and practice.
- 2) It was found in the course of the Project that there was a strong need for long-term technical assistance in the area of

silkworm seed production. Short-term Experts have covered this field, but if Long-term Experts had been dispatched, the training would have been more efficient.

(2) Factors concerning the Implementation Process

There were some problems, such as the shortage and delay of budget allocation by the Indian Government. It is questionable whether CSB, CSB related organizations and the local government can continue their collaboration without the Japanese experts. This could be a hindrance to future sustainability.

3-4 Conclusion

The Bivoltine Sericulture Technology, which had been developed through the past cooperation between CSB and JICA, was successfully implemented and demonstrated at the selected farmers' level, and the technology was transferred to counterparts to a satisfactory level. Though some problems remain, they can be solved by the counterparts themselves.

3-5 Recommendations

(1) Better coordination and collaboration between CSB and CSB related organizations and between CSB and DOS are necessary.

(2) In the Project, the technology was transferred to the staff of CSB and DOS. To disseminate the technology widely, it is necessary to train technology instructors on site.

(3) The Government of India needs to support the Project by way of budget and equipment for further dissemination.

3-6 Lessons Learned

(1) In introducing the new technology, it is necessary to judge what kind of technology is necessary according to the state of agriculture and the farm management on site.

(2) Step by step approach is effective according to the situation of the site: From the technology development, the verification and to the dissemination.

(3) It is important not only to give instructions on the technology but also to give advice and instructions on strengthening the scheme of the project implementation.

3-7 Follow-up Situation

Taking the recommendations into account, the project, "The Project for Strengthening Extension System for Bivoltine Sericulture in India", was launched as a five-year Project from August 2002 to August 2007. This is aimed at increasing the bivoltine silk production by disseminating bivoltine sericulture technology in Karnataka, Andhra Pradesh, and Tamil Nadu, where the 90 percent of the total production of raw silk in India is produced.