

Summary of the Results of Terminal Evaluation

1. Outline of the Project	
Country : India	Project title : The Project for Strengthening Extension System for Bivoltine Sericulture in India
Issue/Sector : Agriculture, Rural Development	Cooperation scheme : Technical Cooperation Project
Division in charge : Poverty Reduction /Paddy Field Based Farming Area I, Rural Development Department	Total cost : 600 million Yen
Period of Cooperation (R/D): 11 August 2002 – 10 August 2007 (Extension): (F/U) : (E/N) (Grant Aid)	Partner Country's Implementing Organization : Central Silk Board, Ministry of Textiles Department of Sericulture, Karnataka State Department of Sericulture, Andhra Pradesh State Department of Sericulture, Tamil Nadu State
	Supporting Organization in Japan : Ministry of Agriculture, Forestry and Fisheries
Related Cooperation :	
<p>1-1 Background of the Project</p> <p>In India, the production of raw silk was approximately 14,600 mt in 2003 against an estimated requirement of 22,000 mt. The gap in supply and demand is met by import, which is mainly for warp. Since over 98 % of raw silk produced in India is out of multivoltine variety which is not suitable for warp, the government of India is putting high priority on improvement of the quality of Indian silk and also on enhancement of production and productivity. Under the plan and scheme of the Government of India, CSB implemented the Bivoltine Sericulture Technology Development Project (BSTDP) to improve bivoltine sericulture technology in the research institute of CSB through Project-type technical cooperation from JICA between 1991 and 1997.</p> <p>Based on the achievement of the BSTDP, the Project for Promotion of Popularizing Practical Bivoltine Sericulture Technology (PPPBST) was initiated from April 1997 for a period of five years for verification of technology developed by BSTDP under field conditions and to demonstrate the improved technology to the selected farmers and reelers. Adopting this newly proven technology, farmers could increase their yield and income by two to three times as the quality improvement to 4A grade with a renditta of 5.5 to 7.</p> <p>With the success of PPPBST, and mounting pressure from the farmers and reelers, the State Government of Karnataka, Andhra Pradesh and Tamil Nadu have prepared ambitious plan for large scale expansion of bivoltine sericulture. Since expansion and promotion of bivoltine sericulture requires proper planning, systematic approach for training, and organized system of extension, the Ministry of Textiles submitted a proposal to JICA for a technical cooperation Project for Strengthening Extension System for Bivoltine Sericulture in India (hereinafter referred to as "the Project") with the aim of development of functional extension system for bivoltine sericulture. In response, JICA dispatched the Preparatory Study Team in December 2001 and the Project commenced from 11 August, 2002 for a period of five(5) years. Since the Project terminates on 10 August, 2007, it was planned to conduct the terminal evaluation of the Project.</p>	
<p>1-2 Project Overview</p> <p>(1)Overall Goal Enhancing production and quality of bivoltine raw silk and thereby raising the income levels of farmers and reelers.</p> <p>(2)Project Purpose Extension system for bivoltine sericulture will be functional.</p> <p>(3)Outputs Output 1: Action Plan for promotion of bivoltine sericulture will be formulated. Output 2: Coordination/Collaboration mechanism amongst various institutions of the CSB for extension of bivoltine sericulture will be established.</p>	

Output 3: System for mass production of quality seed will be established.		
Output 4: DOS staff will be equipped with necessary skills and knowledge for extension of bivoltine sericulture, and training facilities will be improved for bivoltine sericulture. System for mass production of quality seed will be established.		
Output 5: Extension model for bivoltine sericulture will be established.		
(4)Inputs		
Japanese side :		
Long-term Expert	8	Equipment 93 million Yen
Short-term Expert	15	
Trainees received	30	
Indian Side :		
Counterpart	172	
Land and Facilities		
2. Evaluation Team		
Members of Evaluation Team	Japanese Side	
	Mr. Hideki Tomobe	Team Leader: Group Director, Group I, Rural Development Department, JICA
	Mr. Michio Masuda	Extension: Deputy Director, Regional Products and Industrial Crops Division, Ministry of Agriculture, Forestry and Fisheries
	Dr. Kiyoshi Kawakami	Sericulture Technology: Expert, The Dainippon Sericulture Foundation
	Mr. Yusuke Mori	Cooperation Planning: Staff, Poverty Reduction / Paddy Field Based Farming Area Team I, Group I, Rural Development Department, JICA
	Mr. Taku Seo	Evaluation Analysis: Associate Expert, Poverty Reduction / Paddy Field Based Farming Area Team I, Group I, Rural Development Department, JICA
	Indian Side	
	Dr. K. V. Benchamin	Team Leader: Former Director of NSSO
	Prof. M.C. Devaiah	Sericulture Technology: Former Prof. of Sericulture, Department of Sericulture, University of Agricultural Sciences, GKVK, Bangalore
	Prof. N. Narasimha	Sericulture Extension: Prof. of Extension, Department of Agriculture Extension, University of Agricultural Sciences, Bangalore
Period of Evaluation	8 March 2007 – 24 March 2007	Type of Evaluation : Terminal Evaluation
3. Results of Evaluation		

3-1 Summary of Evaluation Results

(1)Relevance

The Project is highly relevant for the following reasons:

- a Consistency with Indian policy:
 - The 10th Five-Year Economic Development Plan (2002-2007) includes a plan that focuses on the promotion of bivoltine sericulture.
 - The Catalytic Development Programme (CDP), which is a subsidy for sericulture farmers, started from 2002 as a five year plan for the purpose of the promotion of sericulture by the government of India.
- b Needs for local people:
 - According to baseline survey, there are 796,685 farmers in the target 3 states and they produce 86% of national production in India.
 - According to the survey of sericulture farmers conducted on the occasion of the terminal evaluation, all the farmers interviewed are highly satisfied with the Project, and their incomes have increased.
 - The Project conducted survey on the present situation of sericulture farmers of the second phase and 70 out of 142 selected farmers in phase II Project were covered. Most of the farmers continue to rear bivoltine sericulture. 67 % of the farmers increased their income. The number of bivoltine sericulture farmers rose 12.5 times from 142 to 1,776 farmers.
- c Consistency with Japan's aid policy:
 - Poverty reduction, especially increase of income in rural areas, is one of the focal issues in JICA Country Programme and the Country Assistance Programme of the Government of Japan.
 - Overall adjustment of the Project, which hinged around increase of income, is consistent with JICA Country Programme.

(2)Effectiveness

Effectiveness of this Project is evaluated high. The Project purpose "Extension system for bivoltine sericulture will be functional." will have been achieved by the end of the Project for the following reasons:

- a The number of bivoltine sericulture farmers(JICA farmers) increased to 3,698.
- b The quantity of bivoltine cocoon transaction in cocoon markets is still 1,148t in 2005. Considering that each farmer can rear 400 dfls (100 dfls=65 kg) at a time and they rear five times per year, the total production will be 4,807t in the future produced by JICA farmers. Consequently it is assumed that the quantity of bivoltine cocoon will be increased by more than 2,000t.
- c The total production and supply of quality bivoltine seed increased to 4.03 million dfls.
- d 5 outputs have been almost achieved and will contribute to the attainment of the Project purpose.

(3)Efficiency

The efficiency of this Project is considered as high for the following reasons:

- a Appropriate numbers of Japanese experts and Indian Counterparts with experience in appropriate field of specialization have been assigned to the Project.
- b Training of the Counterparts, trainer's training, training of the farmers, both seed and commercial and reelers have been covered as envisaged. A large number of training programmes improved the skill of extension workers and farmers and led to improvement of yield and quality of bivoltine cocoons / yarn and also income from silkworm rearings.

(4)Impact

The impact of the Project is highly positive because:

- a The Project actually increased the income of the selected farmers and the reelers.
- b The in-country training programme, booklets and Audio-Video materials contributed in dissemination of bivoltine sericulture management skill in the areas out of Karnataka, Tamil Nadu, and Andhra Pradesh.
- c Technical transfer from selected farmers to non-selected farmers has been observed to take place. These non-selected farmers take advantage of the valued information from the selected farmers and improved their production capability.
- d By setting up the cocoon-quality check system at the cocoon markets, the quality of the product

started to be reflected in the price. It gave an incentive for the farmers to improve the quality of their product.

(5) Sustainability

Sustainability of this Project is assumed high from three view points written below:

a Organization aspects

In the targeted three States, “Extension System for Bivoltine Sericulture” was established in collaboration between CSB and DOS. Ownership of related governmental organization is significantly high and the activities of these organizations are expected to continue.

b Financial aspects

Bivoltine sericulture extension will be stated as one of the principal targets in the 11th Five Year Plan, which starts from FY 2007. Thus, appropriate budget allocation from both Central and State governments is expected.

c Technical aspects

Technical knowledge of counterparts has been improved to a very high level so much that they can implement their own extension programmes. Technical improvement of farmers is also satisfactory and some of the progressive farmers are in a position to advice other farmers including non-JICA farmers. Technical pamphlets and booklets are published in local languages and distributed to a large number of farmers. These aspects indicate that necessary techniques for bivoltine sericulture are widely spread in the target areas. Moreover, many requests for technical pamphlets and for organizing workshop on bivoltine sericulture from other States such as Kerala and Maharashtra, clearly indicate the spread effect of extension system and bivoltine technology.

For further sustainability of bivoltine programme, following needs to be given due consideration.

- a At the grassroots’ level, such as TSCs, STSs and CRCs, adequate funds to be made available to realize each of the objectives more efficiently.
- b In Government establishment, the recruitment of fresh personnel is suggested to sustain the Bivoltine Sericulture Extension System as skill augmentation of staff attained by implementation of JICA technical programmes needs to be transferred to budding extension workers / functionaries.

3-2 Factors that promoted realization of effects

(1) Factors concerning to Planning

- The BVC meeting has been held 24 times to share the information and decision making of the Project within JICA experts, CSB and DOS. In addition, for the effective implementation of the Project, Group Meeting, Joint Meeting and Quarterly Meeting have been held properly.

(2) Factors concerning to the Implementation Process

- The experts encouraged the C/Ps in different levels to work together so that the technology could be effectively transmitted to a wide range of extension workers as well as to ensure the sustainability of the activities after the project period.

3-3 Factors that impeded realization of effects

(1) Factors concerning to Planning

- N/A

(2) Factors concerning to the Implementation Process

- As the C/Ps easily get transferred in DOS after training, the capacity has not been accumulated.

3-4 Conclusion

As described above, the outputs of the Project have been achieved and the Project purpose is also achieved appropriately. With regard to the five criteria evaluation, followings are concluded:

- (1) Relevance of the Project is endorsed by the consistency of the Indian national policy, needs of local people, and the Japanese aid policy;
 - (2) Effectiveness is good: Extension system for bivoltine sericulture is practically functional;
 - (3) Efficiency of the Project is high: Largely inputs were well arranged;
 - (4) Impact of the Project is highly positive, income of bivoltine sericulture farmers increased and non-selected farmers could learn a few techniques developed by the Project from selected farmers; and
 - (5) Sustainability is high from institutional, financial and technological perspectives.
- Therefore, it is concluded that the Project will be terminated in August 2007 as planned.

3-5 Recommendations

The Project has been implemented as planned and it has produced planned/ expected results. Therefore, it is recommended that the momentum gained in bivoltine sericulture development needs to be supported and enlarged in the interest of developing strong bivoltine production base in the country and also to increase production of quality bivoltine silk, the following measures are suggested:

- (1) To make Project achievements sustainable
 - Continuance of programmes like Catalytic Development Programmes (CDP)
For further expansion (extension) of bivoltine sericulture, on-going Catalytic Development Programme activities such as providing financial assistance for creating critical infrastructure to continue.
 - Utilization of skill of Extension counterparts
The technical skill developed and transferred to the identified extension officers is to be fully utilized for expansion (extension) of bivoltine sericulture not only in the Project States but also in other potential States in the country.
 - Continuous monitoring of indicators
The quality of silkworm seed production is to be monitored as it determines the uniformity of cocoons and quality of yarn and thereby increased returns from rearing/ reeling. Therefore, parameters evolved for seed production/ reeling are to be monitored to sustain the quality production and for corrective measures wherever necessary.
- (2) For further development of Indian bivoltine sericulture
 - Improvement of systematic statistical data collection
In India, statistical sericulture data is reported to state governments from each of the field units such as TSCs through BVC. There are grey areas in data collection such as taking long time in finalization and cross-verification of data furnished to Central Government. In order to utilize data efficiently and to make appropriate decision, improvement of data collection system is to be made for better planning.
 - Actions for quality improvement of bivoltine silk and final silk products
Lack of sufficient reelers/ low usage of Indian bivoltine raw silk against the backdrop of imported silk can be an inhibiting factor for further extension of bivoltine sericulture. Thus, Governmental policy for post-cocoon sector is to be more intensive. Cocoon quality inspection system, reeling technology improvement, and launch of raw silk quality system are all required to be put in place. In order to achieve overall goals of this Project, support and actions for farmers, reelers and weavers should be implemented.
Lack of adequate number of reeling establishments and low usage of indigenous bivoltine silk against the backdrop of huge import of silk in the country calls for development strategies and support mechanism for production and improvement in production system of quality cocoons, marketing of cocoons linked to quality, raw silk marketing based on quality parameters and inspection are all necessary.

3-6 Lessons Learned

- (1) The Team approach to develop C/P's capability.

The organizations of Central Government and that of States have jointly worked as a team collaborating and coordinating various activities under the Project to realize the project goals. This is not only to be continued but also to be enlarged for the larger cause of extension of bivoltine sericulture in the country.

(2) Farmer to farmer extension

Many of the progressive farmers have become a model and progressive farmers can therefore serve as a linkage to achieve the improvement desired for spread of new systems/ technology. Their expertise to be utilized efficiently as link-person to cover more and more farmers in all areas of importance.

(3) Incentives to farmers to improve the quality of the product.

By setting up the quality check system in the cocoon markets, the quality of the cocoons will start to be reflected in the price. It gave an incentive for the farmers to improve their product and become quality conscious. This needs to be improved upon.

(4) Inspection note book as a tool for guidance

The field staff/ extension officers keep record of suggestions for the farmers in the inspection note book on the improvement of rearing and quality production. This practice is to be strengthened so that farmers' understanding improves and the purpose of guidance will be realized.