

第6章 団長所感

これまでのプロジェクト活動を評価 5 項目に基づき評価した結果は、合同評価レポートに取りまとめたように総じて高いといえる。計画された活動が順調に実施されていると判断されることから、2007 年 8 月のプロジェクト終了時には所期の目標は達成される見込みである。

評価調査の中で、特に前向きな側面が顕著に見られたのは次の点である。

何人かの農家は自らの二化性養蚕にかかる技術や資金調達に自信を持っている。

CSB のエキスパートは二化性養蚕技術の能力や継続的に技術移転活動をすることに自信を持っている。

インド政府は、Catalytic Development Programme (CDP) の中で、二化性養蚕振興を優先的に扱う方針を決定し、農家のために飼育施設の建設、飼育用機材の購入、稚蚕飼育所の建設等に対する支援を実施している。

Bivoltine Cell Meetings をほとんど毎月開催し、プロジェクトの進捗や問題点、取るべき対策など必要な情報を共有しており、CSB と DOS の連携はよい。

二化性養蚕対策室 (Bivoltine Cell) と養蚕普及所 (TSC) のカウンターパートは、CSB のエキスパートと共に、Enlightenment Programmes や Group Discussion、Study Tour など二化性養蚕に対する理解と普及啓発に関する各種研修会を開催している。

付 属 資 料

- 1 . ミニッツ
- 2 . PDM2 (和文)
- 3 . プロジェクト実施体制図
- 4 . 関連施設リスト及び位置図

**MINUTES OF MEETING
ON
THE JAPANESE MID-TERM EVALUATION TEAM
AND
THE AUTHORITES CONCERNED OF THE GOVERNMENT OF
THE REPUBLIC OF INDIA
FOR
THE PROJECT FOR STRENGTHENING EXTENSION SYSTEM FOR BIVOLTINE
SERICULTURE IN INDIA**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Project Mid-term Evaluation Team, headed by Mr. Hiroyuki ARAI, to India from 22 November to 2 December 2004, for the purpose of conducting the joint mid-term evaluation of the Project for Strengthening Extension System for Bivoltine Sericulture in India (hereinafter in referred to as "the Project").

The Joint Evaluation Committee, which consists of members from JICA and members from the Government of India, was jointly organized for the purpose of conducting the mid-term evaluation and preparation of necessary recommendations to the respective governments.

After intensive study and analysis of the activities and achievements of the Project, the Joint Evaluation Committee prepared the Joint Mid-term Evaluation Report (hereinafter referred to as "the Report"), which was presented to the Joint Coordinating Committee.

The Joint Coordinating Committee discussed the major issues pointed out in the Report, and agreed to recommend to the respective governments the matters attached hereto.

Bangalore, November 30, 2004

荒井博之

Mr. Hiroyuki ARAI
Leader
The Japanese Mid-term Evaluation Team
Japan International Cooperation Agency

H. Basker

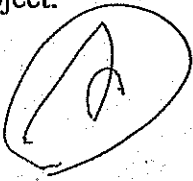
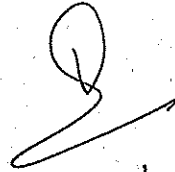
Dr. H. Basker
Member Secretary and Project Manager
Central Silk Board
Ministry of Textiles
Government of India

酒井利文

Mr. Toshifumi SAKAI
Resident Representative
India Office
Japan International Cooperation Agency

ATTACHMENT

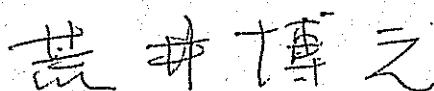
1. The Joint Evaluation Committee, which was jointly organized by JICA and India, has presented the Report to the Joint Coordinating Committee.
2. The Joint Coordinating Committee has accepted the Report and taken notes of the recommendations aimed at successfully sustaining and extending the achievement of the Project.

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JOINT MID-TERM EVALUATION REPORT
ON
THE PROJECT FOR STRENGTHENING EXTENSION SYSTEM
FOR
BIVOLTINE SERICULTURE IN INDIA

Bangalore, November 30, 2004

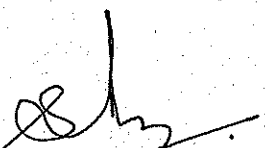
JAPANESE-INDIAN
JOINT MID-TERM EVALUATION COMMITTEE



Mr. Hiroyuki ARAI

Leader

The Japanese Mid-term Evaluation Team



Dr. S. Raje Urs

Leader

The Indian Mid-term Evaluation Team

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Abbreviation

| | |
|--------|--|
| BSF | Basic Seed Farm |
| BVC | Bivoltine Cell |
| CB | Cross Breed |
| CRC | Chawki Rearing Center |
| CSB | Central Silk Board |
| CSR&TI | Central Sericultural Research and Training Institute |
| CSTRI | Central Silk Technological Research Institute |
| DOS | Department of Sericulture |
| Imp.CB | Improved Cross Breed |
| NSSO | National Silkworm Seed Organization |
| SSPC | Silkworm Seed Production Center |
| SSTL | Silkworm Seed Technology Laboratory |
| STS | Sericulture Training School |
| TSC | Technical Service Center |

1. Introduction

1-1 Objective of the Evaluation Study

- 1) To review the degree of achievement of Input, Output, and Project Purpose based on the Project Design Matrix attached as ANNEX 1 (hereinafter referred to as "PDM¹"). Plan of Operation (hereinafter referred to as "PO¹") was also reviewed for the evaluation. Modification of PDM and PO are discussed in the Chapter 3.
- 2) To evaluate the Project for Strengthening Extension System for Bivoltine Sericulture in India in terms of five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability).
- 3) To make recommendations regarding measures to be taken for the improvement of the Project as well as to draw lessons for the improvement in planning and implementation of similar Technical Cooperation Projects.

1-2 Methodology of Evaluation

The Project was evaluated by the Japanese and Indian Joint Evaluation Team (hereinafter referred to as the "Team"). The Team was composed of five members from Japan and three members from India respectively. The Team visited CSB, DOS and project sites, and carried out a series of interviews and discussions with Indian counterpart personnel, farmers and Japanese experts. Evaluation analysis was made on the five evaluation criteria described below:

a) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the development policy of the Republic of India (hereinafter referred to as "India") as well as the needs of beneficiaries.

b) Effectiveness

Effectiveness refers to the extent to which the expected benefit was brought about as a result of the Project (not of the external factors)

c) Efficiency

Efficiency refers to the productivity of the implementation process, examining if the input of the Project was efficiently converted into the output.

d) Impact

Impact refers to direct and indirect, positive and negative impacts caused by implementing the Project, including the extent to which the Overall Goal has been attained.

e) Sustainability

Sustainability refers to the extent to which India can further develop the Project, and the benefits generated by the Project can be sustained under the Indian policies, technology, systems, and financial state.

1-3 Members of the Evaluation Team

1-3-1. Japanese side

| Name | Job title | Occupation |
|----------------------|------------------------|--|
| Mr. Hiroyuki ARAI | Team Leader | Executive Technical Advisor to the Director, Rural Development Department, JICA |
| Dr. Kiyoshi KAWAKAMI | Extension | Expert, The Dainippon Silk Foundation |
| Dr. Shigeo IMANISHI | Sericulture Technology | Team Leader, Insect Cell Engineering Laboratory, Insect Biotechnology and Sericology Department, National Institute of Agrobiological Sciences |
| Mr. Mamoru WATANABE | Cooperation Planning | Staff, Field Crop Based Farming Area Team 1, Group 2, Rural Development Department, JICA |
| Mr. Atau KISHINAMI | Evaluation Analysis | Permanent Expert, International Development Associates, Ltd |

1-3-2. Indian side

| Name | Job title | Occupation |
|----------------------|-------------|--|
| Dr. S. Raje Urs | Team Leader | Director, Seribiotech Research Laboratory |
| Prof. R. Dwarakinath | Member | Former Vice Chancellor, University of Agriculture Sciences, Bangalore |
| Prof. M. C. Devaiah | Member | Professor & Head, Sericulture, University of Agriculture Sciences, Bangalore |

1-4 Schedule of the Study

| No | Date | Day | Details of Visits & Meetings |
|----|--------|-----|--|
| 1 | 22 Nov | Mon | 9:30 Visit JICA India Office 10:30 Visit Ministry of Finance 11:30 Visit Ministry of Textiles 14:30 Visit Japanese Embassy 17:15 Leave Delhi for Bangalore |
| 2 | 23 Nov | Tue | 10:00 Meeting with PEBS Chief Advisor and Coordinator 14:00 The 1 st Joint Evaluation Team meeting, including discussion with the Indian evaluation team on evaluation methods Presentation by Mr. Jayaswal on project progress |
| 3 | 24 Nov | Wed | 10:00 Meeting with C/P of CSTRI, NSSO, SSTL, CSR&TI and BC CSB 12:00 Meeting with Directors of CSB 13:30 Meeting with Member Secretary 14:00 Meeting with JICA Experts 15:30-16:30 Meeting with BC Karnataka, TN, AP and CSB |

| | | | |
|----|--------|-----|---|
| 4 | 25 Nov | Thu | 8:30 Leave for Mysore 14:00 Visit and hearing of CSRTI, Discussion with Director and C/P |
| 5 | 26 Nov | Fri | 8:30 Leave Mysore 9:30-10:30 Visit Grainage Mandya (Karnataka) 11:00-13:00 Visit and hearing JICA farmers 13:00 CRC Visit Keremegala Dodi 15:00 TSC Koppa 17:00-18:00 Visit STS K.R.Pet (Karnataka) P2.GSF Chikkonahalli (Karnataka) 19:30 Arrive Mysore |
| 6 | 27 Nov | Sat | 7:30 Leave Mysore 9:30 Visit Reeling unit 10:30 Visit Reeling TSC (Ramanagaram) 11:00-12:00 Visit Cocoon market (Ramanagaram) 15:00 The 2 nd Joint Evaluation Team meeting |
| 7 | 28 Nov | Sun | Preparation of report |
| 8 | 29 Nov | Mon | 8:30 Departure Hotel Visit Seed farmers and NSSO Afternoon: Preparation of report |
| 9 | 30 Nov | Tue | 10:00 Meeting with DOS Karnataka, A.P., T.N. and CSB 12:00 Meeting with CSB and Joint Evaluation Team 14:30 Joint Coordination Committee Meeting, Signing of the Minutes |
| 10 | 1 Dec | Wed | Leave for Delhi |
| 11 | 2 Dec | Thu | Report to Ministry of Textiles Government of India, Japanese Embassy, JICA India Office |

2. Outline of the Project

2-1 Background of the Project

In India, the production of raw silk was approximately 14,600mt in 2003 against an estimated requirement of 22,000mt. 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 of multivoltine variety which is not suitable for warp, the government of India is according high priority for improving the quality of Indian silk and also to enhance production and productivity. Under this 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 from June 1991 to March 1997.

Based on the achievement of the BSTDP, the Project for Promotion of Popularizing Practical Bivoltine Sericulture Technology (PPPPBST) was initiated from April 1997 for the period of five years for verification of technology developed by BSTDP under field

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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.

With the success PPPBST, and monitoring 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 demands 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 of Bivoltine sericulture (hereinafter referred to as "the Project") with aiming at developing functional extension system for bivoltine sericulture. In response, JICA dispatched the Preparatory Study Team in December, 2001 and as a consequence, the Project started in August 2002.

2-2 Summary of the Project

2-2-1 Overall Goal

Enhancing production and quality of bivoltine raw silk and thereby raising the income levels of farmers and reelers.

2-2-2 Project Purpose

Extension system for bivoltine sericulture will be functional.

2-2-3 Outputs

- (1) Action plan for promotion of bivoltine sericulture will be formulated.
- (2) Coordination/collaboration mechanism among CSB and DOSs for extension of bivoltine sericulture will be established.
- (3) System for mass production of quality seed will be established.
- (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.
- (5) Extension model for bivoltine sericulture will be established.

3. Modification of PDM and PO

3-1 Modification of PDM

PDM¹ was formulated based on a series of discussions among relevant personnel and is considered to be logical. It should be noted, however, that even though climate conditions, such as drought, were not mentioned as important assumptions in PDM, they have affected

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the Project activities. The Team, therefore, has determined that a new Important Assumption "Natural conditions do not drastically change" be added at the Output and Project Purpose levels. Modified PDM is attached as ANNEX 2 (hereinafter referred to as "PDM²").

3-2 Modification of PO

Regarding PO¹, the following activities have been modified and attached as ANNEX 2 (hereinafter referred to as "PO²").

(1) Activity 3-2-1 "The one way system for maintenance and multiplication of silkworm race is established by discrimination of male and female, and prevention of race mixing"

Currently used "CSR18XCSR19" is tolerant against high temperature in summer, however, its yield per 100dfis is low compared to "CSR2XCSR4" and farmers are not willing to produce it, which has caused an unexpected negative effect on the extension activities. The activity, therefore, will be extended for one year, till 2005, for the identification and adoption of a new bivoltine hybrid for summer season rearing acceptable to the farmers.

(2) Activity 3-3-1 "Establishment of rearing techniques assuring more than 85% of pupation rate and 45g/kg seed cocoon"

In some of the DOS Grainages, getting high quality seed cocoons has not been up to the mark because of the present system of purchase of seed cocoons through the seed cocoon market. Direct linkage between Grainages and seed cocoon farmers is essential, therefore, DOS Grainages like that of CSB Grainages should adopt seed farmers in order to improve the quality of seed cocoons. The system requires at least one more year to establish and, hence, the activity will be extended for one year; i.e., 2005.

4. Project Performance

4-1 Project Purpose Level

Verifiable indicators at the Project Purpose level have partly been fulfilled as follows. These figures are as of the end of July 2004.

➤ **Project Purpose:**

Extension system for bivoltine sericulture will be functional.

➤ **Verifiable Indicators:**

1. The number of bivoltine sericulture farmers will be increased to 3,600 by the end of the project in target area

The number of farmers selected by JICA is 786, which is 87.6% of the target figure.

2. The quantity of bivoltine cocoon transaction in cocoon markets in target states increase to about 2000 MT from base year 2002 by the end of project

The quantity of bivoltine cocoons transacted in the cocoon markets in target states has increased to 317 MT from base year 2002.

3. Production and supply of quality bivoltine seed will increase to 36 lakh dfls by the end of project

The supply of quality bivoltine seed has increased to 460,000dfls.

4. Selected TSCs, CRCs, STSs, BSFs and Grainages will acquire requisite facilities.

Facilities and equipment have been arranged at TSCs, CRCs, STSs, BSFs and Grainages and activities have been started.

4-2 Output Level

Achievement of each Output is evaluated as follows in accordance with the verifiable indicators. These figures are as of the end of July 2004.

➤ **Output 1:**

Action plan for promotion of bivoltine sericulture will be formulated.

➤ **Verifiable Indicators:**

1-1. CSB and DOSs will jointly formulate action plan with necessary budget allocation.

Necessary information for the formulation of the action plan has been collected. At the same time, specific plans with respect to promotion of bivoltine sericulture have already started to be implemented.

1-2. Infrastructure development/improvement plan for extension of bivoltine sericulture will be formulated with necessary budget allocation on annual basis.

Based on the JICA model, facilities and equipment have been arranged as planned at TSCs, STSs, BSFs, Grainages and Reeling TSC with CSB and DOSs budget.

➤ **Output 2:**

Coordination/collaboration mechanism among CSB and DOSs for extension of bivoltine sericulture will be established.

➤ **Verifiable Indicators:**

2-1. Information/data regarding bivoltine sericulture will be compiled annually

at Bivoltine Cells in CSB and DOSs

2-2. Monthly Bivoltine Cell Meetings will be held regularly during the project period in order to share plan and challenges with CSB and DOSs.

A total of 14 Bivoltine Cell Meetings have been held. JICA, CSB and DOSs have had series of discussions on important issues such as the Project progress. Relevant personnel now share the information regarding the problems as well as necessary future actions.

➤ **Output 3:**

System for mass production of quality seed will be established.

➤ **Verifiable Indicators:**

3-1. Hatching will be over 90 % in selected BSFs and F1 seed will also have 90 % and above hatching.

The average hatching rate at BSF and Grainage was approximately 90% in 2003. The rate at some Grainages of DOSs, however, is below 90%.

3-2. Defective cocoon rate will be less than 5% in selected BSFs.

The average defective cocoon rate is 6.5%.

3-3. Mixing of different races and sex will not occur in selected Grainages

The average mixing rate is 4.4%.

3-4. Pupation rate will be over 85% in selected Grainages

The average pupation rate at Grainages is 85%. The rate at some Grainages of DOSs, however, is below 85%.

3-5. Recovery rate of seed from seed cocoons will be over 45g/kg in selected Grainages

The average recovery rate of seed from seed cocoons is 48g/kg in selected Grainages. However, in some of the DOS Grainages, it is less than 45g/kg of seed cocoons.

3-6. Training Programme will be conducted for BSF/Grainage staff (200 participants/year) and seed farmers (30 farmers/year) in CSR&TI and SSTL.

A total of 272 BSF/Grainage staff (68% of the target number) and a total of 36 seed farmers (60% of the target number) have participated in the training Programmes.

➤ **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.

➤ **Verifiable Indicators:**

4-1. TSC staff (315 participants/ 5 years), STS staff (60 participants/5 years) and Reeling TSC staff (100 participants/5 years) will be trained by CSR&TI and CSTRI

A total of 172 TSC staff (137% of the target number), 40 STS staff (167% of the target number) and 14 Reeling TSC staff (35% of the target number) have already participated in the training Programmes.

4-2. Field oriented bivoltine sericulture training courses will be formulated in selected STSs (more than 2 courses/ STS)

Field oriented bivoltine sericulture training courses have been formulated and conducted. STSs courses were conducted twice in Karnataka and Tamil Nadu, while the same were conducted four times in Andhra Pradesh.

4-3. Training materials will be improved and developed (textbooks in 5 subjects in local languages, training videos in 5 subjects in local languages and picture panels for selected STSs)

Textbooks on mulberry cultivation, cocoon rearing and disease control have been published in English, Kannada, Telugu and Tamil. Training materials on silk reeling have been developed in English, Kannada, Telugu, Tamil and Hindi. In addition, a technical manual on silk reeling has been revised and published.

4-4. DOS staff (600 participants /5 years) will be trained at selected STSs

A total of 190 DOS staff (79% of the target number) has participated in the training Programmes in STSs.

➤ **Output 5:**

Extension model for bivoltine sericulture will be established.

➤ **Verifiable Indicators:**

5-1. 9 booklets and 5 pamphlets in English and local languages will be utilized

Four kinds of booklets and one pamphlet on extension have been published in

English, Kannada, Telugu, and Tamil.

5-2. The number of Chawki rearing houses managed by Quality Clubs in selected area will be increased from 40 as of 2002 to 100 in 5 years.

The number of Chawki rearing houses managed by Quality Clubs was increased to 94 in 2003. However, the number of Chawki rearing houses managed by Quality Clubs is only one in Karnataka.

5-3. Sericulture related tools (rotary moutage, cocoon defloshing machine, cocoon cutting machine, leaf chopping machine and incubation frame) will be developed and introduced to BSFs, Grainages and farmers

A trial model of rotary moutage was made with Indian materials and tested at CSR&TI, however, it needs to be improved. Other four tools are also expected to be improved by reflecting the opinions of TSC staff and farmers.

5. Results of Evaluation

5-1 Relevance

Relevance of the Project is considered high for the following reasons.

(1) National and Regional Development Policies

As mentioned, India's current silk production is 14,600mt against an estimated requirement of 22,000mt. 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 of multivoltine variety which is not suitable for warp, the government has been trying to improve the quality of Indian silk as well as the production and productivity. The government of India has set up a long-term plan in order to achieve a self-sufficiency in bivoltine raw silk, aiming to produce up to 6,700mt. It also established "Catalytic Development Programme (CDP)" to support farmers/reelers for creation of infrastructure such as construction of rearing houses, purchase of rearing equipment, establishment of CRCs, multi-end reeling machines and others. In addition, BVCs have been established in CSB and in DOSs for the purpose of sharing information and promoting bivoltine sericulture. The Project aims to strengthen the entire extension system in the sericultural sector and clearly matches the Indian national policies.

(2) Interest of Beneficiaries

Karnataka, Andhra Pradesh and Tamil Nadu produce approximately 90% of the total

amount of India's raw silk. The target group, sericultural farmers of these states, has observed the positive effects of the Project by participating in various activities such as study tours, and been willing to introduce new technologies verified by the Project in order to enhance the production and income. The Project Purpose, therefore, matches the needs of the beneficiaries.

5-2 Effectiveness

Effectiveness of the Project is evaluated high.

It can be said that the Project Purpose has been gradually achieved according to verifiable indicators both at the Project Purpose and Output levels. The number of selected farmers was 786 in July 2004, which accounts for about 87.4% of the target figure of 900. The number has now increased to 1309 by the end of October 2004. Considering the droughts of three consecutive years and sharp decline of cocoon price in 2002, the number is considered to be sufficient. In general, activities specified in PDM and PO have satisfactorily been conducted and the Project Purpose will be expected to be achieved within the Project duration. One of the important assumptions of the Project Purpose level, "Price of quality bivoltine raw silk will not drastically fall" could not be met in 2002. The sharp drop in the price, however, was offset by a special scheme drawn jointly by the CSB and DOSs. Thereafter, the price has remained relatively stable.

With regard to the Outputs, as shown in the previous chapter, although the verifiable indicators are gradually achieved, some indicators have not been fulfilled, especially in terms of the number of trainees and activities in the Grainages. The main reason for this is because in the earlier stage of the Project, higher priority was put on the selection and preparation of facilities, trainers' training, textbooks and extension panels, which took more time than planned. This was also partly due to inadequate DOSs budget. In addition, the indicators such as mixing rate of different races and sex are not low enough in some of the DOS Grainages. Hence, the one-way-system should be strengthened to improve the indicator and to enhance the production of quality seed cocoons as well as F1 seeds. These shortcomings have now been gradually improved and are expected to be overcome by the end of the Project period. It should be noted that some farmers expressed confidence in their technical skill and in meeting the financial requirements themselves.

All the Outputs are set up in order to achieve the Project Purpose and have directly contributed to the Project progress.

5-3 Efficiency

Evaluation in terms of efficiency is considered relatively high for the following

reasons.

5-3-1 Inputs from the Japanese Side

1) Dispatch of Japanese Experts

A total of eight long-term experts, nine short-term experts have been dispatched as shown in ANNEX 4.

2) Acceptance of Indian Counterpart Personnel for Training in Japan

A total of nine Indian counterpart personnel have been trained in Japan in accordance with the PO¹ as shown in ANNEX 5.

3) Provision of Machinery, Equipment and Materials

Machinery, equipment and materials worth JPY6.482 million and of Rs17.571 million have been provided in accordance with the PO¹ as shown in ANNEX 6.

4) Local Cost

Local cost of JPY8.395 million and of Rs35.558 million has been provided in total to support the Project as shown in ANNEX 7 and used for the necessary project activities.

5-3-2 Inputs from the Indian Side

1) Assignment of Counterpart Personnel

A total of 162 Indian counterpart personnel have been assigned in accordance with the PO¹ as shown in ANNEX 8.

2) Provision of land, buildings and facilities

Office spaces for the Japanese experts and necessary facilities have been provided. In addition to this, land, building and other facilities have also been provided in different identified project sites/subsites.

3) Operation Cost

Local cost valued at Rs161.155 million has been provided in total as shown in ANNEX 9 and used for necessary project activities.

5-3-3 Linkage between Inputs and Outputs

Japanese inputs have generally been appropriate in terms of timing, quantity and quality. Indian counterpart personnel who were provided with training in Japan have utilized their skills and knowledge obtained throughout the training courses in order to provide proper guidance for DOS personnel and farmers. However, some DOS staff could not participate in the country-focused-training-courses due to complex administrative procedures. Provision of equipment and machinery and payment of local cost have also properly been carried out in order to achieve the Project Outputs and the Purpose. Indian counterpart personnel highly

valued the Japanese inputs.

Indian inputs are considered generally satisfactory. In Karnataka, however, some training courses have been delayed in STSs mainly due to insufficient budget of DOS. The DOS Karnataka has also not yet posted sericulture extension officers in some of the TSCs. Likewise, in Tamil Nadu, training Programme for TSC staff was carried out only once and is now suspended due to depletion of underground water caused by the continuous drought.

5-4 Impact

- The progress of the Overall Goal "Enhancing production and quality of bivoltine raw silk and thereby raising the income levels of farmers and reelers" has partly been observed at the time of the Mid-term Evaluation. For instance, the average bivoltine commercial cocoon price is ruling around Rs120/kg, which is approximately higher than Imp.CB by Rs20/kg. In addition, bivoltine cocoon produced by "JICA farmers" is more appreciated at Ramanagaram cocoon market.

- Counterpart personnel at Bivoltine Cells and TSCs, together with CSB experts, have planned enlightenment Programmes, group discussions and study tours on their own initiative. Approximately 2,000 farmers and reelers participated in these events and actively discussed with CSB experts and DOS counterpart personnel with regard to advantages as well as technical issues in introducing bivoltine sericulture.

- Private companies have been involved into the establishment of CRCs in Karnataka and Tamil Nadu since more CRCs will be necessary with the increasing number of farmers introducing bivoltine sericulture. In addition, a workshop on CRC operation and management was held in May 2004 by the cooperation of CSB and DOS Karnataka with many participants. These events show high concerns for introduction of chawki rearing as well as CRC operation and management.

5-5 Sustainability

Overall sustainability is considered relatively high.

(1) Institutional Sustainability

Institutional sustainability is considered relatively high for the following reasons.

As mentioned, the Indian government has accorded high priority to the development of bivoltine sericulture and accordingly established a long-term plan and "Catalytic Development Programme (CDP)" to improve the productivity and quality of Indian silk as

well as to achieve self-sufficiency in bivoltine silk production. Hence, it can be said that the Government continues to support the sector.

Regarding the coordination between CSB and DOSs, Bivoltine Cell Meetings have been held almost every month in order to share the information on the Project progress, problems as well as necessary future actions. Continuation of the meeting is inevitable for the enhancement of the institutional sustainability.

Concerning the personnel, the Directors of CSB are fully responsible for the implementation of the Project, however, they have not exposed to advanced sericulture technologies especially at the managerial level.

(2) Technical Sustainability

Technical sustainability is considered relatively high for the following reasons.

There are approximately 60 counterpart personnel in DOS of three target states and currently they do not have sufficient knowledge and experience with regard to bivoltine sericulture. CSB experts have been guiding and working together with DOS counterpart personnel, who are the crucial players, to enhance their technical skill. CSB experts clearly stated that they are confident in their technical ability and in continuing the technology transfer activities. It should be pointed out, however, that several personnel transfers mainly in DOSs are observed, which is not desirable for smooth implementations of the Project.

(3) Financial Sustainability

Financial sustainability is considered intermediate for the following reasons.

At the place of the workshop held by JICA, CSB and DOS Karnataka in June 2004, some subsidies were provided for farmers. It indicates that the financial support system is functioning in connection with the Project activities to promote bivoltine sericulture. Insufficient DOSs budget, however, has caused suspension of training courses at some STSs and DOSs budget may continue to be a critical issue in the future.

6. Conclusions

Based on five evaluation criteria, it was assessed that the Project has appropriately been progressed. The Team concluded that the Project shall be completed in August 2007 in accordance with the Record of Discussions signed on the 30th of April 2002.



7. Recommendations

As discussed in the previous chapters of the Report, despite the influence of important assumptions, the Project has been implemented as planned and produced expected results. The Team, therefore, strongly recommends that Japanese experts, Indian counterpart personnel and relevant personnel continue to make every effort in order to strengthen sustainability as well as achieve the Project Purpose by the Project completion. The following issues and necessary measures are recommended by the Joint Evaluation Committee in order to further develop and sustain the achievement of the Project.

(1) Assurance of Appropriate Budget

Facilities and equipment have been arranged as planned in TSCs, STSs, BSFs, Grainages and Reeling TSCs by CSB and DOS budget. Insufficient DOS finance, however, has been a cause for the delay in some activities of the Project. Training courses, in particular, have not been conducted at some STSs because of the deficient budget. It is recommended, therefore, that the DOSs should provide adequate budget to ensure that the activities are continuously carried out.

(2) Improvement and Extension of Rotary Mountage

Rotary mountage is considered to be inevitable for the promotion of bivoltine sericulture. Both Japanese and Indian sides should take necessary measures in order to improve and extend rotary mountage to the farmers.

(3) Training of CSB Coordinators in Japan

The CSB coordinators of the Project, although they bear full responsibility for the implementation of the Project, have not been exposed to advanced sericulture technologies especially practiced in Japan. The Team recommends that holding training courses for them be considered.

(4) Strengthening of Seed Production

The production of quality seed cocoon and F1 seed in DOS Grainages is a serious concern. Hence, the Team recommends that the DOS may give high priority for improvement of seed quality and continuously monitor the progress.

(5) Minimum Attrition of Counterpart Personnel

Despite the agreement that no changes in relevant personnel should be made, apart from resignation and promotion, there have been frequent changes in personnel, which could

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hinder the Project activities. In addition, cancellations, by the Indian side, of the country focused training courses in Japan happen almost every year. Since counterpart personnel are the fundamental factor of the Project, it is essential that they be fixed in the same position for the Project period of time in order to extend their skills, knowledge and experiences obtained by the Project.

Project Design Matrix 1

Project Title: The Project for Strengthening Extension System for Bivoltine Sericulture in India.

Target Group: Bivoltine Sericulture farmers in target areas. Target Areas: Karnataka, Andhra Pradesh, Tamil Nadu.

| Narrative Summary | Objectively Verifiable Indicators | Means of Verification | Important Assumption |
|--|--|---|--|
| <p>(Overall Goal) Enhancing production and quality of bivoltine raw silk and thereby raising the income levels of farmers and reelers.</p> | <ol style="list-style-type: none"> 1. Bivoltine sericulture farmers in target areas will increase income from sericulture 2. The production of quality raw silk (above 2A level) in target areas will be increased. | <ul style="list-style-type: none"> ·Reports/documents of CSB/DOSs. ·Baseline Survey ·Repeat Survey on farmers and reelers ·Data from Cocoon markets | <ul style="list-style-type: none"> ·Policy of CSB and DOSs for promoting bivoltine sericulture will not be changed. |
| <p>(Project Purpose) Extension system for bivoltine sericulture will be functional</p> | <ol style="list-style-type: none"> 1.The number of bivoltine sericulture farmers will be increased to 3,600 by the end of the project in target area 2. The quantity of bivoltine cocoon transaction in cocoon markets in target states increase to about 2000 MT from base year 2002 by the end of project 3. Production and supply of quality bivoltine seed will increase to 36 lakh dfls by the end of project 4.Selected TSCs, CRCs, STSs, BSFs and Grainages will acquire requisite facilities. | <ul style="list-style-type: none"> ·Baseline Survey ·Reports of CSB/DOSs | <ul style="list-style-type: none"> ·Price of quality bivoltine raw silk will not drastically fall. ·Demand for quality bivoltine raw silk will not decrease. |
| <p>(Outputs)</p> <ol style="list-style-type: none"> 1. Action plan for promotion of bivoltine sericulture will be formulated. 2. Coordination/collaboration mechanism among CSB and DOSs for extension of bivoltine sericulture will be established. 3. System for mass production of quality seed will be established. 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. 5. Extension model for bivoltine sericulture will be established. | <ol style="list-style-type: none"> 1-1. CSB and DOSs will jointly formulate action plan with necessary budget allocation. 1-2. Infrastructure development/improvement plan for extension of bivoltine sericulture will be formulated with necessary budget allocation on annual basis. 2-1.Information/data regarding bivoltine sericulture will be compiled annually at Bivoltine Cells in CSB and DOSs 2-2.Monthly Bivoltine Cell Meetings will be held regularly during the project. period in order to share plan and challenges with CSB and DOSs 3-1.Hatching will be over 90 % in selected | <ul style="list-style-type: none"> ·Baseline survey ·Quarterly reports ·Reports/documents of CSB/DOSs ·Repeat Survey on farmers and reelers ·Minutes of meetings ·Annual reports of CSB/DOSs. | <ul style="list-style-type: none"> ·New disease will not breakout. |

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| | <p>BSFs and F1 seed will also have 90 % and above hatching.</p> <p>3-2. Defective cocoon rate will be less than 5% in selected BSFs.</p> <p>3-3. Mixing of different races and sex will not occur in selected Grainages</p> <p>3-4. Pupation rate will be over 85% in selected Grainages</p> <p>3-5. Recovery rate of seed from seed cocoons will be over 45g/kg in selected Grainages</p> <p>3-6. Training program will be conducted for BSF/Grainage staff (200 participants /year) and seed farmers (30 farmers/year) in CSR&TI and SSTL</p> <p>4-1. TSC staff (315 participants/ 5 years), STS staff (60 participants/5 years) and Reeling TSC staff (100 participants/5 years) will be trained by CSR&TI and CSTR</p> <p>4-2. Field oriented bivoltine sericulture training courses will be formulated in selected STSs (more than 2 courses/ STS)</p> <p>4-3. Training materials will be improved and developed (textbooks in 5 subjects in local languages, training videos in 5 subjects in local languages and picture panels for selected STSs)</p> <p>4-4. DOS staff (600 participants /5 years) will be trained at selected STSs</p> <p>5-1. 9 booklets and 5 pamphlets in English and local languages will be utilized</p> <p>5-2. The number of Chawki rearing houses managed by Quality Clubs in selected area will be increased from 40 as of 2002 to 100 in 5 years.</p> <p>5-3. Sericulture related tools (rotary moutage, cocoon defloshing machine, cocoon cutting machine, leaf chopping machine and incubation frame) will be developed and introduced to BSFs, Grainages and farmers</p> | | |
|--|---|--|--|

(Activities)

1. Formulation of Action Plan for Promotion of Bivoltine Sericulture.
 - 1-1 Baseline Survey (Survey on target farmers current extension system, current extension plan and government policy to support small sericulture farmers and to strengthen farmers group, etc.)
 - 1-2 Promotion of full introduction of cocoon marketing system with quality assessment
 - 1-3 To examine the need for modification on current extension system, extension plan, Government policy to support small sericulture farmers.
 - 1-4 Action Plan for promotion of bivoltine will be formulated with close coordination of CSB and DOSs.
2. Establishment of coordination/ collaboration mechanism among CSB and DOSs.
 - 2-1 To formulate plan of activities for Bivoltine Cell.
 - 2-2 To monitor project activities through regular Joint meetings.
3. Strengthening of system of Seed Production.
 - 3-1 To formulate plan for mass production of quality seed.
 - 3-2 To establish one-way system of seed multiplication at CSB and DOSs.
 - 3-3 To establish quality control guidelines and checkpoints at P3 level and below.
 - 3-4 To formulate guidance plan to BSF, grainage staff and seed farmers.
 - 3-5 Strengthening of seed production facilities
4. Strengthening of Training
 - 4-1 To formulate training master plan for bivoltine sericulture.

(Inputs)

(Japanese side)

1. Dispatch of long-term experts
 - Chief Advisor
 - Coordinator
 - Seed production
 - Training
 - Extension
2. Dispatch of short-term experts
3. Acceptance of Indian personnel for training in Japan.
4. Provision of machinery/ equipment , training tools, Others

(Indian side)

1. Assignment of counterpart personnel
 - Project Manager
 - Deputy Project Manager
 - Director of CSB institutions and DOSs
 - Subject Matter Specialist (in necessary field)
2. Administrative personnel
3. Land, buildings and facilities necessary for the Project.
4. Budgetary allocation for local costs.

- Counterpart personnel of the Project will not be shifted.
- Trained CSB/DOSs staff will be fully utilized.
- Law and order in the target areas will not get worse.

(Pre-condition)

- Bivoltine Cell will be established in CSB and target states.
- Memorandum of Understanding among CSB and DOSs on coordination/ collaboration mechanism for the Project will be signed.
- Counterpart personnel of CSB and DOSs who had trained during PPPBST will be utilized to the extent possible.

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- 4-2 To formulate facility development plan
- 4-3 Strengthening of training facilities.
- 4-4 To revise training curriculum to be field oriented.
- 4-5 To conduct trainers training.
- 4-6 To conduct farmers training (by DOS)
- 4-7 To devise training curriculum and materials in each field
- 4-7-1 Silkworm race maintenance/seed production
- 4-7-2 Mulberry cultivation
- 4-7-3 Silkworm rearing/disease control
- 4-7-4 Reeling
- 4-8 To conduct training course for extension staff

- 5 Establishment of Model for Bivoltine Sericulture Extension.
- 5-1 To select target TSCs
- 5-2 To plan and implement model extension activities in the target areas.
- 5-3 To tune up technical package developed by PPPBST.
- 5-4 To prepare method of monitoring and evaluation for extension activities.
- 5-5 Strengthening of TSCs.

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Project Design Matrix 2

Project Title: The Project for Strengthening Extension System for Bivoltine Sericulture in India.

Duration: 11 August, 2002 - 10 August, 2007

Target Group: Bivoltine Sericulture farmers in target areas. Target Areas: Karnataka, Andhra Pradesh, Tamil Nadu.

Date: 30 November, 2004

| Narrative Summary | Objectively Verifiable Indicators | Means of Verification | Important Assumption |
|--|--|---|--|
| <p>(Overall Goal) Enhancing production and quality of bivoltine raw silk and thereby raising the income levels of farmers and reelers.</p> | <ol style="list-style-type: none"> 1. Bivoltine sericulture farmers in target areas will increase income from sericulture 2. The production of quality raw silk (above 2A level) in target areas will be increased. | <ul style="list-style-type: none"> ·Reports/documents of CSB/DOSs. ·Baseline Survey ·Repeat Survey on farmers and reelers ·Data from Cocoon markets | <ul style="list-style-type: none"> ·Policy of CSB and DOSs for promoting bivoltine sericulture will not be changed. |
| <p>(Project Purpose) Extension system for bivoltine sericulture will be functional</p> | <ol style="list-style-type: none"> 1. The number of bivoltine sericulture farmers will be increased to 3,600 by the end of the project in target area 2. The quantity of bivoltine cocoon transaction in cocoon markets in target states increase to about 2000 MT from base year 2002 by the end of project 3. Production and supply of quality bivoltine seed will increase to 36 lakh dfls by the end of project 4. Selected TSCs, CRCs, STSs, BSFs and Grainages will acquire requisite facilities. | <ul style="list-style-type: none"> ·Baseline Survey ·Reports of CSB/DOSs | <ul style="list-style-type: none"> ·Price of quality bivoltine raw silk will not drastically fall. ·Demand for quality bivoltine raw silk will not decrease. ·Natural conditions do not drastically change. |
| <p>(Outputs)</p> <ol style="list-style-type: none"> 1. Action plan for promotion of bivoltine sericulture will be formulated. 2. Coordination/collaboration mechanism among CSB and DOSs for extension of bivoltine sericulture will be established. 3. System for mass production of quality seed will be established. 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. 5. Extension model for bivoltine sericulture will be established. | <ol style="list-style-type: none"> 1-1. CSB and DOSs will jointly formulate action plan with necessary budget allocation. 1-2. Infrastructure development/improvement plan for extension of bivoltine sericulture will be formulated with necessary budget allocation on annual basis. 2-1. Information/data regarding bivoltine sericulture will be compiled annually at Bivoltine Cells in CSB and DOSs 2-2. Monthly Bivoltine Cell Meetings will be held regularly during the project period in order to share plan and challenges with CSB and DOSs 3-1. Hatching will be over 90 % in selected | <ul style="list-style-type: none"> ·Baseline survey ·Quarterly reports ·Reports/documents of CSB/DOSs ·Repeat Survey on farmers and reelers ·Minutes of meetings ·Annual reports of CSB/DOSs. | <ul style="list-style-type: none"> ·New disease will not breakout. ·Natural conditions do not drastically change. |

- BSFs and F1 seed will also have 90 % and above hatching.
- 3-2. Defective cocoon rate will be less than 5% in selected BSFs.
 - 3-3. Mixing of different races and sex will not occur in selected Grainages
 - 3-4. Pupation rate will be over 85% in selected Grainages
 - 3-5. Recovery rate of seed from seed cocoons will be over 45g/kg in selected Grainages
 - 3-6. Training program will be conducted for BSF/Grainage staff (200 participants /year) and seed farmers (30 farmers/year) in CSR&TI and SSTL
 - 4-1. TSC staff (315 participants/ 5 years), STS staff (60 participants/5 years) and Reeling TSC staff (100 participants/5 years) will be trained by CSR&TI and CSTR
 - 4-2. Field oriented bivoltine sericulture training courses will be formulated in selected STSs (more than 2 courses/ STS)
 - 4-3. Training materials will be improved and developed (textbooks in 5 subjects in local languages, training videos in 5 subjects in local languages and picture panels for selected STSs)
 - 4-4. DOS staff (600 participants /5 years) will be trained at selected STSs
 - 5-1. 9 booklets and 5 pamphlets in English and local languages will be utilized
 - 5-2. The number of Chawki rearing houses managed by Quality Clubs in selected area will be increased from 40 as of 2002 to 100 in 5 years.
 - 5-3. Sericulture related tools (rotary moutage, cocoon defloshing machine, cocoon cutting machine, leaf chopping machine and incubation frame) will be developed and introduced to BSFs, Grainages and farmers

(Activities)

1. Formulation of Action Plan for Promotion of Bivoltine Sericulture.
 - 1-1 Baseline Survey (Survey on target farmers current extension system, current extension plan and government policy to support small sericulture farmers and to strengthen farmers group, etc.)
 - 1-2 Promotion of full introduction of cocoon marketing system with quality assessment
 - 1-3 To examine the need for modification on current extension system, extension plan, Government policy to support small sericulture farmers.
 - 1-4 Action Plan for promotion of bivoltine will be formulated with close coordination of CSB and DOSs.
2. Establishment of coordination/ collaboration mechanism among CSB and DOSs.
 - 2-1 To formulate plan of activities for Bivoltine Cell.
 - 2-2 To monitor project activities through regular Joint meetings.
3. Strengthening of system of Seed Production .
 - 3-1 To formulate plan for mass production of quality seed.
 - 3-2 To establish one-way system of seed multiplication at CSB and DOSs.
 - 3-3 To establish quality control guidelines and checkpoints at P3 level and below.
 - 3-4 To formulate guidance plan to BSF, grainage staff and seed farmers.
 - 3-5 Strengthening of seed production facilities
4. Strengthening of Training
 - 4-1 To formulate training master plan for bivoltine sericulture.

(Inputs)

(Japanese side)

1. Dispatch of long-term experts
 - Chief Advisor
 - Coordinator
 - Seed production
 - Training
 - Extension
2. Dispatch of short-term experts
3. Acceptance of Indian personnel for training in Japan.
4. Provision of machinery/ equipment , training tools, Others

(Indian side)

1. Assignment of counterpart personnel
 - Project Manager
 - Deputy Project Manager
 - Director of CSB institutions and DOSs
 - Subject Matter Specialist (in necessary field)
2. Administrative personnel
3. Land, buildings and facilities necessary for the Project.
4. Budgetary allocation for local costs.

- Counterpart personnel of the Project will not be shifted.
- Trained CSB/DOSs staff will be fully utilized.
- Law and order in the target areas will not get worse.

(Pre-condition)

- Bivoltine Cell will be established in CSB and target states.
- Memorandum of Understanding among CSB and DOSs on coordination/ collaboration mechanism for the Project will be signed.
- Counterpart personnel of CSB and DOSs who had trained during PPPBST will be utilized to the extent possible.

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- 4-2 To formulate facility development plan
- 4-3 Strengthening of training facilities.
- 4-4 To revise training curriculum to be field oriented.
- 4-5 To conduct trainers training.
- 4-6 To conduct farmers training (by DOS)
- 4-7 To devise training curriculum and materials in each field
- 4-7-1 Silkworm race maintenance/seed production
- 4-7-2 Mulberry cultivation
- 4-7-3 Silkworm rearing/disease control
- 4-7-4 Reeling
- 4-8 To conduct training course for extension staff

5 Establishment of Model for Bivoltine Sericulture Extension.

- 5-1 To select target TSCs
- 5-2 To plan and implement model extension activities in the target areas.
- 5-3 To tune up technical package developed by PPPBST.
- 5-4 To prepare method of monitoring and evaluation for extension activities.
- 5-5 Strengthening of TSCs.

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Progress of Activities (PO²)

ANNEX 3

(from August 2002 to July 2004)

| Activities (Plan of Operation) | | | | | | State of Activities | | | | | Rate of Achievement | Final Goal (Output) |
|--|--|--|---|---|---|---------------------|---|--|--|---|---|--|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | Activities done up to July 2004 | Remarks for Remaining period | Result and evaluation at this stage | | |
| 1. Formation of action plan for promotion of Bivoltine sericulture (Mainly implemented by CSB-BC, DOSs-BC) | 1-1 Baseline survey (on target farmers, current extension system, current extension plan, and government policy to support small sericulture farmers and to strengthen farmers group etc.) [Mainly implemented by CSB-BC, DOSs-BC and CSR&TI] | 1-1-1 Send out questionnaires (farming scale, facilities, equipments economical and technological level, etc.) to selected farmers from TSC before and after the baseline survey | ■ | ■ | ■ | ■ | | Baseline data from farmers were collected through structured questionnaire and compiled. | Since it is a continual activity, data will be collected for every year and compiled. | Based on results of the baseline survey, the farmers facilities were upgraded. The government policies and extension system are found to be appropriate for developing/ supporting sericulture farmers and technology extension. More Quality Clubs are coming forward to promote cocoon testing and grading. | 100% | Action Plan for promotion of bivoltine sericulture will be formulated. |
| | | 1-1-2 Study on present status of government (CSB and DOSs) policies for developing small sericulture farmers (it is compilation of policies in CSB and DOSs) | | | | | | | The current sericulture policy of CSB & DOSs were studied in detail. Besides, to support sericulture farmers to compensate fall in the price of cocoons from September 2002 to December 2002, Govt. of India on the request of Departments of Sericulture in the project area, sanctioned a sum of Rs.826.00 lakh. A sum of Rs.268.04 lakh was released as CSB's share to provide price incentives to the primary producers in the cocoon market @ Rs.10/- per kg over and above the price offered by the reelers. Moreover, bivoltine farmers were supported under the Catalytic Development Programme (CDP) for infrastructure development to sustain the rearing of successful bivoltine crops. | The support programme will continue for infrastructure building up with the identified farmers and special emphasis with the decisions taken in the JCC meeting. | Provision made under CDP for construction of rearing houses etc. for the farmers is sufficient. | |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | |
|--------------------------------|---|---|---|---|---|---------------------|---|--|---|---|---------------------------------|------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period |
| | | 1-1-3 Study on present status of government (CSB and DOSs) policies for extending the bivoltine sericulture | | | | | | The present sericulture policy of the government were studied in detail and found sufficient for promotion of bivoltine in the country | The present sericulture policy will be followed. It is getting renewed thrust by the CSB DOSs. | 100% | | |
| | | 1-1-4 Study on present extension system in the selected states | | | | | | Present extension system followed for promotion of bivoltine sericulture was studied and the same was found adequate to meet the objectives set under the project. | The extension system as is in vogue to continue. | 100% | | |
| | | 1-1-5 Details of the plan of CSB and DOSs for strengthening Quality Clubs and farmer's groups | | | | | | Under CDP, Govt. has programmed to provide assistance like organization of CRCs, Cocoon testing & grading to the Quality Clubs for promotion of bivoltine sericulture. | The scheme will be continued to encourage more Quality clubs to take care for promotion of bivoltine sericulture. | 100% | | |
| | | 1-1-6 Study on common silkworm facilities (rearing house, etc.) operated by farmer's groups | | | | | | During baseline survey, the requirement of rearing house for the farmers were studied and assistance were extended for construction of rearing house etc. under CDP. | | 100% | | |
| | 1-2 Promotion of full introduction of cocoon marketing system with quality assessment [Mainly implemented by DOS and CSTRI] | 1-2-1 Selection criteria for evaluation of raw cocoons | | | | | | Criteria for evaluation of raw cocoons in the cocoon markets were studied and modified as per the need and cocoons testing method has been developed. | Criteria evolved for evaluation of raw cocoons will be monitored in the cocoon markets. | Farmers will get better price for their produce. Quality club members and farmers have appreciated the importance of cocoon quality assessment and shown interest for introduction and follow up. | 100% | |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|--------------------------------|---|--|---|---|---|---------------------|---|--|---|--|---------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | | 1-2-2 Study rapid and simple evaluation method of raw cocoons | | | | | | Rapid and simple evaluation system of raw cocoons in the cocoon markets were developed with the help of JICA experts and the same is being practiced. | Evaluation system of raw cocoons in the cocoon markets will be monitored | 100% | |
| | | 1-2-3 Introduce new evaluation system of raw cocoons in cocoon markets | | | | | | Evaluation system of raw cocoons were introduced in Ramanagaram cocoon market with the help of JICA experts and the same is being practiced | Introduction of simple cocoon testing method in other cocoon markets | 100% | |
| | | 1-2-4 Plan for cocoon testing by the Quality Clubs to facilitate marketing of cocoons | | | | | | Interactions meetings with Quality Clubs were organized at CSTRI. Necessary budget provision has been made by CSB for supporting Quality Clubs on purchase of necessary equipment. | Popularization of cocoon testing in different project sites will be continued with Quality Clubs. | 100% | |
| | 1-3 To examine the need for modification on current extension system, current extension plan, government policy to small sericulture farmers and to strengthen farmers [Mainly implemented by CSB-BC, DOSs-BC and CSR&TI] | 1-3-1 Examining present status of extension system and extension plan to clarify problems for improving small sericulture farmers starting bivoltine sericulture | | | | | | The present extension system practiced in the project sites were studied and found appropriate for extension of bivoltine sericulture in the states covered under the project. | The system will continue. | Current extension system, plan and policy for small sericulture farmers were found appropriate. Necessary budget provision has been made to meet the requirement of the new farmers subsequently to be identified in the TSCs under the project. | 100% |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|--------------------------------|---|--|---|---|---|---------------------|---|--|-----------------------------|---|---------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | | 1-3-2 Determine budget plan for the modification and development of equipment essential to small sericulture farmers | | | | | | Action plan for providing inputs to the small sericulture farmers under CDP were drawn and arrangements were made to extend the facilities to JICA farmers on priority. | | 100% | |
| | 1-4 Action plan for promotion will be formulated with close coordination of CSB and DOSs [Mainly implemented by CSB-BC, DOSs-BC and CSR&TI] | 1-4-1 Preparation of practical Action Plan for small sericulture farmers | | | | | | Action plan for promotion of bivoltine sericulture has been formulated jointly by CSB and DOS of the targeted Project states. A sum of Rs.11,524.10 lakh has been allocated under CDP to support bivoltine farmers for creating infrastructure for a period of 5 years starting from 2002-03. The CDP Scheme prepared to support bivoltine farmer include all the critical areas. Besides the above, as an exigency plan, farmers had been supported and provided price incentive in the cocoon market at the rate of Rs.10/- per kg of cocoon produced to compensate fall of the price of cocoons and the scheme was operational till December, 2002. For this special support, a sum of Rs.826 lakh was allocated and out of which Rs.268.04 lakh was done as CSB's share to provide succor to the farmers from falling prices of the primary produce. | The same will be continued. | Assistance for small sericulture farmers with close coordination with CSB and DOSs has yielded better results in terms of higher cocoon price and the same will be continued. | 100% |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | |
|--|---|---|---|---|---|---------------------|---|--|--|---|---------------------------------|--|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period |
| | | 1-4-2 Preparation of support plan to strengthen activities of TSC, Reeling TSC, STS, Grainage and BSF including facilities | | | | | | CSB and DOSs cooperated to realize plans and policies for supporting activities of TSCs, Reeling TSCs, CRCs, STSs, Grainages, BSFs and farmers (training of staff, buildings, improvement of facilities and equipment, support price for cocoons and raw silk) Sufficient fund allocation has been jointly made, both by the CSB and DOS of the 3 states for strengthening the activities and infrastructure in the identified units and also farmers. These measures will make the infrastructure complete as per the model suggested to support the Project to realise its objectives. | | 100% | | |
| 2 Establishment of coordination/collaboration mechanism among CSB and DOS [Mainly implemented by CSB-BC and DOSs-BC] | 2-1 To formulate plan of activities for Bivoltine Cell [Mainly implemented by CSB-BC and DOSs-BC] | 2-1-1 Bivoltine Cell of CSB and DOSs will collect practical activity plan (annual reports, statistics, surveys, etc.) in relation to bivoltine sericulture | | | | | | DOS and CSB have compiled the information on base line survey which have been taken as bench-mark, for promotion of sericulture, before the starting of the project. | Collection and compilation of data will be continued to study the impact of the project. | Bivoltine Cell in CSB and DOSs are functioning as the project coordination office. Bench mark for evaluation of the project was established based on the information collected. | 100% | Coordination/collaboration mechanism among CSB and DOSs for extension of bivoltine sericulture will be established |
| | | 2-1-2 CSB and DOSs prepare Annual Report activity plan for publishing (PEBS-News Letter, Annual Report, etc.) and planning workshops for bivoltine sericulture technologies | | | | | | The detailed activity plan for publishing PEBS- News Letter, Annual Plan etc has been worked out and 3 issues of PEBS-News Letter were published. Besides, Project Home page was established. Compilation of Annual Report is in progress. A workshop has been organized jointly by JICA, CSB and DOS Karnataka. | The same will be continued. | | 100% | |

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| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | |
|--|--|--|---|---|---|---------------------|---|---|---|--|---------------------------------|--|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period |
| | 2-2 To monitor project activities through regular joint meetings [Mainly implemented by CSB-BC and DOSSs-BC] | 2-2-1 CSB-BC and DOSSs-BC will hold regular meetings for reviewing the progress of project activities | | | | | | Periodical meetings were held to discuss various issues including strategies for realizing the objectives of the Project and based on the information available, decisions are arrived at. All connected have shared their experience to coordinate and realize the objectives set under the Project. Meeting details are given below: No. of BV Cell Meetings - 14; No. of Joint Meeting - 9; No. of Group Meetings on Seed Production - 4; No. of Group Meetings on Extension - 5; No. of Group Meetings on Training - 4; No. of Joint Meetings - 6; No. of Quarterly meetings - 2; No. of JCC Meeting 2. | The system of coordination and collaboration will be continued and if necessary, the system will be fine-tuned. | Coordination-collaboration mechanism for promotion of bivoltine sericulture have been established and the project activities have been monitored through regular meetings. | 100% | |
| 3. Strengthening of system of seed production [Mainly implemented by NSSP and DOSSs] | 3-1 To formulate plan for mass production of quality seed [Mainly implemented by NSSP and DOSSs] | 3-1-1 Determine the standard and select Grainage and BSF | | | | | | Standards for BSF and Grainage were made to develop as model and nine BSFs and eleven Grainages were selected based on the standard decided. | | | 100% | System for mass production of quality seed will be established |
| | | 3-1-2 Mass production of high quality silkworm seeds will be formulated adhering to the guideline for the production and quality control of silkworm seeds | | | | | | Mass production of high quality silkworm seed provided formulated. Guidelines were made for the production and quality control of silkworm seed which included ISO 9001: 2000 certification in quality silkworm seed production. | | | 100% | |

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| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | |
|--------------------------------|---|---|---|---|---|---------------------|---|---|---|---|---------------------------------|------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period |
| | 3-2 To establish one-way system at CSB and DOS [Mainly implemented by NSSP and DOSs] | 3-2-1 The one way system for maintenance and multiplication of silkworm race is established by discrimination of male and female, and prevention of race mixing | | | | | | One way system of basic seed multiplication was followed at CSB and DOSs. Training for sex separation was given in Grainages. But lot of error occurred during sex separation in some of the DOS Grainages. | Improvement of Grainage work for discrimination of male and female, and prevention of race mixing. Identification and adoption of new bivoltine hybrid for summer season rearing. | One way system of basic seed multiplication was followed at CSB and DOSs. But lot of error occurred during sex separation in some of the DOS Grainages. Besides, popularization of present summer hybrid CSR18 x CSR19 is found to be rather difficult due to various reasons. | 70% | |
| | 3-3 To establish quality control guidelines and checkpoints at P3 level and below [Mainly implemented by NSSP and DOSs] | 3-3-1 Establishment of rearing techniques assuring more than 85% of pupation rate and 45g/kg seed cocoon (egg recovery) in Grainage | | | | | | Quality control guidelines for BSFs and Grainages were prepared and guidance was given to carry out the work based on guidelines. Purchase of high quality seed cocoons are very important for quality seed production. Therefore, identified good P1 seed farmers were trained for production of quality seed cocoons. Last year, the pupation rate of seed cocoons at selected Grainages were 89% and recovery rate was 41g/kg. | To establish quality control guidelines and checkpoints at BSFs and Grainages. Improvement of seed crop rearing and direct purchase of seed cocoon from identified farmers by selected Grainages for improvement of quality of seed cocoon. | Quality control guidelines for BSFs and Grainages were prepared and activities were carried out by following the guidelines. But in Grainages of DOSs getting the high quality seed cocoons was not up to the mark because of the present system of cocoon purchase mainly through market. Therefore, pupation rate of seed cocoons was below 85% and recovery rate of seed from seed cocoons was below 40g/kg at majority of the selected Grainages of DOSs. | 70% | |

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| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | |
|--------------------------------|---|---|---|---|---|---------------------|---|---|---------------------|--|---------------------------------|------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period |
| | 3-4 To formulate guidance plan to BSF staff, Grainage staff and seed farmers [Mainly implemented by NSSP, DOSs, SSTL and CSR&TI] | 3-4-1 Formulate guidelines for BSF staff, Grainage staff and seed farmers | | | | | | Standard guidance for selected BSFs/GSFs and Grainages was made. Guidance for the BSFs/GSFs and Grainage staff was given by the team. | | Guidance plan was formulated for the BSF/GSF and Grainage staff. Training at SSTL and village level were conducted for seed farmers. Village level training was found to be very effective because of the one full rearing training on raising of seed crops. In addition training on mulberry cultivation technology, disinfection, rearing technology were also given to sustain generation of quality seed cocoons. | 100% | |
| | 3-5 Strengthening of seed production facilities [Mainly implemented by NSSP and DOSs] | 3-5-1 Strengthen facilities and equipment in BSFs and Grainages for quality seed production | | | | | | Inspection of BSFs and Grainages for strengthening of seed production facilities was done. | | Upgrading done by NSSP and DOSs based on inspection report. However, a few areas need upgrading in some of the selected sites. | 90% | |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | | |
|--|--|---|------|---|---|---------------------|---|---|---------------------|---|---------------------------------|--|---|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period | |
| 4 Strengthening of training [Mainly implemented by CSR&TI, CSTRI and DOSs] | 4-1 To formulate training master plan for Bivoltine sericulture and reeling [Mainly implemented by CSR&TI, CSTRI, SSTL and DOSs] | 4-1-1 Determine the standard and select STSs | 100% | | | | | The criteria for model STS and Reeling TSC were made. Six STSs and two Reeling TSCs were selected based on the model. | | The target STSs and Reeling TSCs were selected. Training master plans were formulated in each of the identified fields. | 100% | DOS staff will be equipped with necessary skills and knowledge for extension of bivoltine sericulture, and training facilities will be improved for bivoltine sericulture. | |
| | | 4-1-2 Formulate training master plan which emphasizes practices for the bivoltine sericulture technology (mulberry culture, rearing, disease control, etc.) | | | | | | Training master plans for the bivoltine sericulture technology were formulated at CSR&TI and STSs. | | | | | 100% |
| | | 4-1-3 Formulate training master plan for seed production | | | | | | Training master plans for the bivoltine seed production were formulated at CSR&TI and SSTL. | | | | | 100% |
| | | 4-1-4 Formulate training master plan which emphasize practices for reeling | | | | | | Training master plan for reeling technology were formulated at CSTRI. | | | | | 100% |
| | 4-2 To formulate facility development plan [Mainly implemented by DOSs] | 4-2-1 Formulate a plan for developing training facilities especially for bivoltine sericulture practices including reeling | 100% | | | | | Information was collected through surveys of STSs and Reeling TSCs. The plan for developing training facilities was formulated. | | | | | Gave instructions to concerned units to develop training facilities at STSs and Reeling TSCs. |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | | |
|--------------------------------|---|--|---|---|---|---------------------|---|--|---|--|---------------------------------|------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 | Remarks for Remaining period |
| | 4-3 Strengthening of training facilities (by DOS) [Mainly implemented by DOSs] | 4-3-1 DOSs strengthen training facilities and equipment especially for bivoltine sericulture practices including reeling | | | | | | The STSs were strengthened training facilities, Chawki and late age mulberry garden and rearing equipments based on inspection report. Reeling TSCs were strengthened by introduction of reeling training facilities like Multi end reeling machine etc. based on inspection report. | Improvement of boiler room in Reeling TSC Sidlaghatta. Further improvement of the facilities as like irrigation of mulberry garden in STS Channapatna and Kuderu. | Strengthening of training facilities were done by DOSs. | 100% | |
| | 4-4 To revise training curriculum to be field oriented [Mainly implemented by CSR&TI, DOSs, CSTRI and SSTL] | 4-4-1 CSR&TI, CSTRI and SSTL in consultation with DOSs revise training curriculum which emphasize practices for the bivoltine sericulture and reeling technology | | | | | | Revised training curriculum were made ready for implementation on the training programme in each training institutions. | | Revised training curriculum are utilized in planned training programmes. | 100% | |
| | 4-5 To conduct trainer's training [Mainly implemented by CSR&TI] | 4-5-1 Conduct advanced training for STS staff | | | | | | The trainers training programmes for STS staff was conducted by CSR&TI. | | Planned training programmes were conducted on schedule. | 100% | |

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| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|--------------------------------|--|---|---|---|---|---------------------|---|---|--|--|---------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | 4-6 To conduct farmer's training (by DOSs) [Mainly implemented by DOSs] | 4-6-1 DOSs conduct practical and efficient training for bivoltine sericulture farmers | | | | | | Two training courses were conducted for farmer at three STSs in Karnataka and one STS in Andhra Pradesh. Four training courses were conducted for farmers at one STS in Tamil Nadu. | More budget will be allotted for farmers training at STSs in Karnataka by DOS. | The training courses were conducted well at STSs in Andhra Pradesh and Tamil Nadu. Training in Karnataka, especially at STS Channapatna and Kuderu, were not adequate in terms of quality and the number of participants due to insufficient facilities and drought like condition that prevailed. | 80% |
| | 4-7 To devise training curriculum and materials in each field [Mainly implemented by CSR&TI, CSTRI and SSTL] | 4-7-1 Silkworm race maintenance/seed production [Mainly implemented by CSR&TI, SSTL and NSSP] | | | | | | The curriculum on silkworm race maintenance/seed production was prepared in consultation with CSR&TI and SSTL. FAQ on silkworm breed and seed crop rearing and two Guidelines on bivoltine silkworm race maintenance and production of loose eggs of bivoltine hybridre were prepared for BSF/Grainage staff. | Training video on silkworm seed production is to be made. | Devised training curricula and materials were prepared in each field except video. | 100% |
| | | 4-7-2 Mulberry cultivation [Mainly implemented by CSR&TI] | | | | | | Training curriculum on mulberry cultivation was revised. Manual on mulberry cultivation is translated in local languages (Kannada, Telugu and Tamil), prepared and distributed to TSC and STS staff. | Training video on mulberry cultivation is to be made. | | 100% |

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| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|--------------------------------|--|--|---|---|---|---------------------|---|--|--|---|---------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | | 4-7-3 Silkworm rearing/disease control [Mainly implemented by CSR&TI] | | | | | | Training curriculum on silkworm rearing/disease control was revised. Two manuals on bivoltine silkworm rearing and silkworm disease control were translated in local languages (Kannada, Telugu and Tamil), prepared and distributed to TSC and STS staff. | Training video on silkworm rearing and silkworm disease control is to be made. | 100% | |
| | | 4-7-4 Reeling [Mainly implemented by CSTRI] | | | | | | Training curriculum on bivoltine silk reeling was revised. Operation manuals for reelers on bivoltine silk reeling technology was translated in local languages (Kannada, Telugu, Tamil and Hindi), prepared and distributed for reelers. Revised English manual on bivoltine silk reeling technology was prepared. Training video on bivoltine silk reeling was prepared. | Picture panels on bivoltine silk reeling technology are to be made for reeling TSCs. | 100% | |
| | 4-8 To conduct traing courses for extension staff [Mainly implemented by CSR&TI, CSTRI and SSTL] | 4-8-1 CSR&TI, CSTRI and SSTL conduct recurrent training course for extension, BSF and Grainage staff | | | | | | Training programme for TSC, Reeling TSC, BSF and Grainage staff were implemented by CSR&TI, CSTRI, SSTL and STSs. | | Planned training programme were conducted on schedule at CSR&TI, SSTL and STS in Andhra Pradesh. Implement of training at CSTRI and STS in Tamil Nadu were less than planned programme. Training programme for seed farmers was conducted at village level as it is more useful for seed farmers. | 90% |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|---|---|---|---|---|---|---------------------|---|---|--|---------------------|---|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | | 4-8-2 SSTL conduct practical and efficient training for bivoltine seed farmers | | | | | | Training programme for seed farmers was implemented by SSTL. | Selected seed farmers will be trained with priority. | 100% | |
| 5 Establishment of model for bivoltine sericulture extension [Mainly implemented by CSB-BC, DOSs-BC and CSR&TI] | 5-1 To select target TSCs [Mainly implemented by CSB-BC, DOSs-BC and CSR&TI] | 5-1-1 Determine the standard and select TSC, Reeling TSC and bivoltine sericulture farmers in Karnataka, Andhra Pradesh and Tamil Nadu | | | | | | Criteria for selection of TSC, CRC and farmers were prepared. 18 TSCs and 2 Reeling TSCs were selected. | | 100% | Extension model for bivoltine sericulture will be established |
| | 5-2 To plan and implement model extension activities in the targeted area [Mainly implemented by CSB-BC, DOS-BC, CSR&TI and CSTR] | 5-2-1 CSR&TI will prepare and publish extension manuals/pamphlets written in languages for model extension activities and promotion of Bivoltine sericulture in selected area | | | | | | Manuals/booklets were published in different languages. Charts on bivoltine sericulture technologies were distributed to TSCs for illustration while teaching extension programmes. | The manuals and booklets will be updated as and when required. Pamphlets will be prepared on sericulture technologies for using them in enlightenment programmes and group discussion. | 100% | |
| | | 5-2-2 Organization of enlightenment programme, field days, group discussion, study tour for promotion of bivoltine sericulture | | | | | | Enlightenment programme, Study tour, Group discussion, Quality awareness programme, Field days, Interaction meetings were organized. | As per the requirement of DOS, enlightenment programme, field days, group discussion, study tour will be conducted for promotion of bivoltine sericulture. | 100% | |

| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|--------------------------------|--|--|---|---|---|---------------------|---|---|---|---|---------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | | 5-2-3 Detailed brushing program for each crop with F1 seed requirement, organizing chawki rearing and crop monitoring will be drawn by CSR&TI, in consultation with DOSs and NSSP (Transferred from 5-1-2) | | | | | | The crop plans were made, the brushing date and layings requirement were decided in the Joint meeting for Extension. Chawki rearing were conducted in identified CRCs. Accordingly, the crop inspection and guidance were made in different stages by guidance team from CSB to DOS staff. | The same will be continued. | | 100% |
| | 5-3 To tune up technical package developed by PPPBST [Mainly implemented by CSB-BC, DOSs-BC, CSR&TI, CSTRl, NSSP and SSTL] | 5-3-1 Bivoltine sericulture technology package (race maintenance, seed production, mulberry cultivation, rearing, disease control, reeling) developed and certified by PPPBST will be fine tuned | | | | | | Planting system of 3' x 3' was also being continued along with paired row system of mulberry plantation. Rotary moutage by using indigenous cardboard was made and it is under testing, as the commercial availability of rotary moutages is not at the expected level. Denier indicator is developed in CSTRl. | The technology package will be fine tuned as per the needs of the farmers. Rotary moutage for extension will be improved. Denier indicator will be developed. | The list of manufacturers and companies who are involved in preparation of tools was prepared/updated. This list was used for purchasing of sericulture machine, equipment. | 100% |
| | 5-4 To prepare method of monitoring and evaluation for extension activities [Mainly implemented by CSR&TI and DOSs] | 5-4-1 Study the monitoring and evaluation method for the extension activity based on the baseline survey | | | | | | Inspection book was prepared in Kannada, Telugu and Tamil to record the observations of the guidance team and DOS staff while visiting the farmers to monitor the crops. Joint meetings and Group meetings were conducted regularly to monitor and evaluate the extension activities. | Regular crop monitoring, reporting and joint and group meetings will be conducted to monitor and evaluate the extension activities. | Established a monitoring and evaluation method. All the information were collected through Joint meeting and group meeting which helped in solving identified problems. | 100% |

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| Activities (Plan of Operation) | | | | | | State of Activities | | Result and evaluation at this stage | Rate of Achievement | Final Goal (Output) | |
|--------------------------------|--|--|---|---|---|---------------------|---|--|--|--|---------------------------------|
| Title | Item | Sub Item | 1 | 2 | 3 | 4 | 5 | | | | Activities done up to July 2004 |
| | 5-5 Strengthening of TSC (DOS) [Mainly implemented by DOSSs] | 5-5-1 DOS strengthen TSC according to the action plan | | | | | | Selected TSCs are functioning as extension stronghold. Selected TSC staff were trained in bivoltine sericulture technologies. | DOSSs will take up strengthening of other TSCs according to the JICA model. DOS will plan and organize extension programme. | Maintained JICA model TSCs and CRCs. The TSCs and the CRCs strengthened under the project will work as model facilities for extension activities. | 100% |
| | | 5-5-2 DOS will promote to establish CRCs as per the requirement linked to the commercial TSCs to organize young silkworm rearing | | | | | | Model CRCs with the required facilities and equipment were established under the project. CRC staff and workers were trained at CSRTI, Mysore. | More CRCs will be established as per JICA model by DOS to cover increased number of farmers. | | 100% |

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Dispath of Japanese Experts

JICA Long Term Expert

| No. | Name | Field | Period (D/M/Y) | Post in Japan & Remarks |
|-----|----------------------|--------------------------------------|---------------------|---|
| 1 | Dr. Hiroaki YANAGAWA | Chief Adviser | 11/8/2002-10/8/2005 | - |
| 2 | Mr. Akira NISHIKORI | Coordinator | 11/8/2002-10/8/2004 | Japan Overseas Cooperation Association |
| 3 | Mr. Soji AOMORI | Training | 11/8/2002-10/8/2004 | - |
| 4 | Mr. Hitoshi TSUCHIYA | Extension | 11/8/2002-10/8/2004 | - |
| 5 | Mr. Akio YAMAGUCHI | Race Maintenance/ Seed Production | 8/9/2002-7/9/2005 | Kanebo LTD. (8/9/2002- 31/3/2004) |
| 6 | Dr. Toshio YAMAMOTO | Training | 25/7/2004-24/7/2006 | Successor to Mr. S. AOMORI |
| 7 | Mr. Keigo KOJIMA | Extension | 25/7/2004-24/7/2006 | Successor to Mr. H. TSUCHIYA |
| 8 | Ms. Eriko KAWAGUCHI | Coordinator | 19/8/2004-18/8/2006 | Successor to Mr. A. NISHIKORI |

JICA Short Term Expert 2002-03

| No. | Name | Field | Period (D/M/Y) | Post in Japan |
|-----|------------------------|--|-----------------------|--|
| 1 | Dr. Takeshi KAWARABATA | Technology Extension | 17/10/2002-25/12/2002 | Emeritus Professor, Kyushu University |
| 2 | Dr. Keisuke MASE | Silkworm Maintenance/ Multiply Technology | 31/10/2002-25/12/2002 | National Institute of Agrobiological Sciences |
| 3 | Dr. Shigeo IMANISHI | Training | 31/10/2002-31/01/2003 | National Institute of Agrobiological Sciences |

JICA Short Term Expert 2003-04

| No. | Name | Field | Period (D/M/Y) | Post in Japan |
|-----|-------------------------|-----------------------|-----------------------|--|
| 1 | Dr. Takeshi KAWARABATA | Technology Extension | 19/10/2003-28/01/2004 | Emeritus Professor, Kyushu University |
| 2 | Dr. Kunikatsu HAMANO | Training | 19/10/2003-25/12/2003 | Tokyo University of Agriculture & Technology |
| 3 | Dr. Chiyuki TAKABAYASHI | Raw Cocoon Evaluation | 15/2/2004-30/3/2004 | National Institute of Agrobiological Sciences |

JICA Short Term Expert 2004-05

| No. | Name | Field | Period (D/M/Y) | Post in Japan |
|-----|------------------------|--------------------------------------|----------------------|--|
| 1 | Dr. Takeshi KAWARABATA | Technology Extension | 14/9/2004-10/12/2004 | Emeritus Professor, Kyushu University |
| 2 | Ms. Noriko IIDA | Race Maintenance/ Seed Production | 26/10/2004-21/1/2005 | Institute of Sericulture, Dainippon Silk Foundation |
| 3 | Dr. Masahiko KOBAYASHI | Sericulture Training | 16/11/2004-21/1/2005 | Emeritus Professor, Tokyo University |

Acceptance of India Counterpart Personnel for Training in Japan

JICA Counterpart Training in JAPAN 2002-03

| No. | Name | Position | Training Subject | Period (D/M/Y) | Main Training Places |
|-----|-------------------------|---------------------|--------------------------------------|---------------------|------------------------------|
| 1 | Mr. Hameed Beig | ADS, Karnataka | Silkworm Seed | 4/11/2002-1/3/2003 | Dainippon-sanshikai, Tsukuba |
| 2 | Dr. G.K. Srinivasa Babu | DD, NSSP, Bangalore | Silkworm Race Maintenance | 4/11/2002-1/3/2003 | NIAS, Matsumoto & Tsukuba |
| 3 | Mr. Arasappillai Mani | SRO, RSRS, Salem | Silkworm Rearing and Disease Control | 21/11/2002-1/3/2003 | NIAS, Matsumoto & Tsukuba |

JICA Counterpart Training in JAPAN 2003-04

| No. | Name | Position | Training Subject | Period (D/M/Y) | Main Training Places |
|-----|--------------------|---------------------|--------------------------------------|-----------------------|------------------------------|
| 1 | Dr. B.V. Vasumathi | SRO, CSTRI, | Raw Cocoon Evaluation | 29/04/2003-30/07/2003 | NIAS, Okaya |
| 2 | Mr. O. Dhanraj | ADS, Andhra Pradesh | Silkworm Seed | 29/04/2003-30/08/2003 | Dainippon-sanshikai, Tsukuba |
| 3 | Mr. V. S. Raj | ADS, Tamil Nadu | Silkworm Rearing and Disease Control | 29/04/2003-30/08/2003 | NIAS, Matsumoto |

JICA Counterpart Training in JAPAN 2004-05

| No. | Name | Position | Training Subject | Period (D/M/Y) | Main Training Places |
|-----|------------------------|-----------------|---|--------------------|------------------------------|
| 1 | Dr. K. S. Chandrakanth | SRO, CSTRI, | Silkworm Rearing | 9/5/2004-11/9/2004 | NIAS |
| 2 | Mr. I. Devasagayam | ADS, Tamil Nadu | Silkworm Race Maintenance & Seed Production | 9/5/2004-11/9/2004 | Dainippon-sanshikai, Tsukuba |
| 3 | Mr. B. Rudrappa | ADS, Karnataka | Silkworm Rearing and Disease Control | 9/5/2004-11/9/2004 | NIAS |

JICA Country focused Training Course in JAPAN 2002-03

| No. | Name | Position | Training Subject | Period (D/M/Y) | Main Training Places |
|-----|---------------------|-------------------------|-------------------------------------|--|------------------------|
| 1 | Mr. Jayant Jayaswal | JD, NSSP, Bangalore | Extension for Bivoltine Sericulture | 10/9/2002-24/10/2002 | TBIC, Gunma Pref., TIC |
| 2 | Mr. C.R. Chikkamath | Commissioner, Karnataka | Extension for Bivoltine Sericulture | 16/9/2002-24/10/2002 | TBIC, Gunma Pref., TIC |
| 3 | Mr. D. Subramanyam | ADS, Andhra Pradesh | Extension for Bivoltine Sericulture | 16/9/2002-24/10/2002 | TBIC, Gunma Pref., TIC |
| 4 | Mr. R.K. Yadav | Director, Tamil Nadu | Extension for Bivoltine Sericulture | Canceled due to circumstances of Govt. of Tamil Nadu | |

JICA Country focused Training Course in JAPAN 2003-04

| No. | Name | Position | Training Subject | Period (D/M/Y) | Main Training Places |
|-----|-----------------------|--------------------------------|-------------------------------------|--|----------------------|
| 1 | Mr. T. Muthiah | DDS, Tamil Nadu | Extension for Bivoltine Sericulture | 20/08/2003-19/09/2003 | TBIC, Gunma Pref. |
| 2 | Mr. N.Y. Chigari | ADS, Karnataka | Extension for Bivoltine Sericulture | 20/08/2003-19/09/2003 | TBIC, Gunma Pref. |
| 3 | Dr. K. Giridhar | DD, NSSP, Bangalore | Extension for Bivoltine Sericulture | 20/08/2003-19/09/2003 | TBIC, Gunma Pref. |
| 4 | Mr. B. Venkateswarulu | Addl.Dir.Seri., Andhra Pradesh | Extension for Bivoltine Sericulture | Canceled due to circumstances of Govt. of Andhra Pradesh | |

JICA Country focused Training Course in JAPAN 2004-05

| No. | Name | Position | Training Subject | Period (D/M/Y) | Main Training Places |
|-----|--------------------|--------------------------------|-------------------------------------|-----------------------|----------------------|
| 1 | Mr. K. Jayakumar | ADS, Tamil Nadu | Extension for Bivoltine Sericulture | 18/08/2004-17/09/2004 | TBIC, Gunma Pref. |
| 2 | Mr. S.N. Srinivasa | SEO, Karnataka | Extension for Bivoltine Sericulture | 18/08/2004-17/09/2004 | TBIC, Gunma Pref. |
| 3 | Dr. S.M.H. Qadri | JD, RSRS, Selam, CSB | Extension for Bivoltine Sericulture | 18/08/2004-17/09/2004 | TBIC, Gunma Pref. |
| 4 | Ms. D. Vani | Bivoltine Cell, Andhra Pradesh | Extension for Bivoltine Sericulture | 18/08/2004-17/09/2004 | TBIC, Gunma Pref. |