

VALUE CHAIN ON FLOWERS FOR DOMESTIC AND EXPORT MARKETS
ENVIRONMENTAL AND SOCIAL SAFEGUARDS MANAGEMENT

A. Basic information

- 1. Project statistics** :
- Component code** : 2
- Name of Consortium Leader** : **Dr. P. Murugesu Boopathi, Vice Chancellor**
- Name of CPI** : **Dr. M. Jawaharlal, Ph.D.**
- Name of CoPI** : i) **Dr.M.Ganga**
ii) **Dr.M.Kannan**
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Consortium Partners

(A) Consortium Partners

1. **M/s. AVT Natural Products Ltd.,
Sathyamangalam, Erode Dt., Tamil Nadu**
2. **M/s. Salem Spices Pvt. Ltd., Salem, Salem
Dt., Tamil Nadu**
3. **M/s. Vanguard Exports Pvt. Ltd.,
Coimbatore, Coimbatore Dt., Tamil
Nadu**
4. **M/s. Elkhill Agrotech Pvt. Ltd., Ooty, The
Nilgiris Dt., Tamil Nadu**

- 2. Date of start** : 28.08.2008
- 3. Duration of project** : 4 years
- 4. Project cost** : Rs. 353.29 lakhs

5. Project objectives

- 1) To optimize cost effective production technologies for potential flower crops
- 2) To standardize technologies for post harvest management and value addition
- 3) To impart training to growers and entrepreneurs on production and post production technologies
- 4) To create floriculture database and to facilitate market linkage and supply chain management in flowers for domestic and export trade

6. Brief project description

The project entitled '**Value chain on flowers for domestic and export markets**' is being proposed with the ultimate aim of promoting the floriculture enterprise in the country. The present project which is planned for a timeframe of five years with a budget outlay of **Rs. 353.29 lakhs** is proposed with the aim of possibly addressing all the missing links in the various levels of the value chain on flowers through a consortia approach involving all the relevant stakeholders, to make the Production to Consumption (PCS) Value Chain holistic and commercially viable. The technical programme consists of four major components as follows.

- (A) Optimization of cost effective production technologies for potential flower crops.
- (B) Standardization of technologies for post harvest management and value addition.
- (C) Imparting training to growers and entrepreneurs on production and post production technologies.
- (D) Creating database and facilitating market linkage and supply chain management.

Standardization of cost effective production technologies is proposed as a possible way to mitigate the problem of high investment cost involved in floriculture. Inadequate scientific technologies in the production and post harvest levels of the value chain will be addressed through research programmes formulated to standardize reliable technologies. The experiments formulated to achieve the first objective include standardization of precision production technology for jasmine, marigold and carnation, standardization of eco-friendly methods to manage major pests and diseases of these crops, cost effective protected structures of carnation and development of techniques to manage calyx splitting in carnation.

The second objective will be achieved through standardization of post harvest technologies for jasmine, marigold and carnation and standardization of technologies for dry flowers.

Poor knowledge and adoption level of scientific flower production and value addition technologies by the Indian growers which is another major missing link in the chain will be addressed through imparting floriculture technical know-how and do-how to the growers which will be achieved through Faculty training (HRD), Growers' training (Capacity building) and organizing workshops and demonstrations. Growers, entrepreneurs, women and unemployed youth will be given entrepreneurial skill development training and hands on training on production and post harvest technology of jasmine, marigold and carnation, value addition and export of jasmine, dry flower technology and commodity group formation.

The bottlenecks existing in the marketing level of the cut flower value chain will be addressed and rectified through creation of a database, establishment of market linkage, supply chain management strategy and supply chain infrastructure.

Of the Consortium Partners, M/s. Vanguard Exports Pvt. Ltd., Coimbatore would collaborate with TNAU in standardizing precision production technologies and imparting hands-on-training to entrepreneurs, women and unemployed youth on value addition and export of jasmine. M/s. AVT Natural Products Pvt. Ltd, Erode District would collaborate in standardizing precision production technology and technologies to enhance xanthophyll content using micronutrients and biostimulants in marigold.

M/s. Salem Spices Pvt. Ltd., Salem would involve in activities pertaining to development of new dry flower products for export market, standardization of export packaging technology for dry flower products, hands-on- training to women and unemployed youth on dry flower technology and imparting entrepreneurial skill development training on processing of dry flowers. M/s. Elkhill Agrotech Pvt. Ltd., Ooty will work in collaboration with TNAU to standardize precision production technology for carnation and to impart training on hi-tech carnation cultivation to growers.

The two Associate Partners, KVK, UPASI and Deepam Self Help Group will facilitate training on production and post-production technologies of flowers to growers.

7. Environmental category issues in the subproject

The environmental and social issues pertaining to the project are discussed in the table furnished in Annexure I & II.

8. Safeguard policies triggered

| Safeguard Policies Triggered (World Bank Policies) | | |
|--|-----|-----|
| | Yes | No |
| Environmental Assessment (OP/BP 4.01) | [] | [] |
| Natural Habitats (OP/BP 4.04) | [] | [] |
| Pest Management (OP 4.09) | [✓] | [] |
| Cultural Property (draft OP 4.11-OPN 11.03 -) | [] | [] |
| Involuntary Resettlement (OP/BP 4.12) | [] | [] |
| Indigenous Peoples (OD 4.20) | [] | [] |
| Forests (OP/BP 4.36) | [] | [] |
| Safety of Dams (OP/BP 4.37) | [] | [] |
| Projects in Disputed Areas (OP/BP 7.60) | [] | [] |
| Projects on International Waterways (OP/BP 7.50) | [] | [] |

B. Risk analysis and related issues:

| S.No. | Anticipated risk | Mitigation strategy proposed |
|-------|---|---|
| (1) | Growers misunderstanding the concept and expecting the project to grant them subsidies / incentives instead of the institutional support in the form of technical know-how and do-how and facilitation of access to basic essentials for the floriculture venture such as suitable varieties, quality planting materials, inputs, marketing, infrastructure | Growers and their associations have already been provided with information that the present project is not meant for granting subsidies / incentives, but to facilitate / create a platform to help improvement of the floriculture industry by way of addressing the missing links in the existing cut flower value chain so as to make it a viable one. |
| (2) | Possibilities of sustainability of the project and its impact would be less unless appropriate measures are taken for same | Infrastructure created for research on production, post harvest management and dry flower making would be used as pilot models for training the growers even after project period so as to attain sustainability. |

9. Impact assessment:

The social and environmental safeguards are discussed below.

10. Potential indirect and/or long-term impacts due to anticipated future activities in the project areas (Assessment of conflict / complimentarity with the likely anticipated activities current as well as proposed in the next five years)

Direct impacts

- The enhanced income from good quality produce (flowers) will improve economic status of flower growers
- Improved awareness of growers on additional income sources such as value addition with flowers
- Improved awareness of growers on better and reliable marketing approaches
- Improved entrepreneurial opportunities to womenfolk, unemployed youth and SHG's.
- Creation of alternate and highly remunerative job opportunities to the literate groups who are unemployed due to saturation of employment opportunities in the public sector.
- This is one of the agricultural ventures which invites literate groups, due to its high-tech nature coupled with the 'low volume high value concept'.

Indirect impacts

- Sustainability of commercial flower cultivation and dry flower production in the country
- Improved socio-economic status of the growers
- Improved mental attitude among people through improved consumption of flowers
- Empowerment of growers with small farm holdings by adoption of floriculture venture based on the 'low volume - high value' concept
- Expansion of area under protected floriculture
- Increased productivity leading to improved input use efficiency in terms of planting materials, fertilizers, water, etc.
- Enhanced volume of flowers for export
- Improved returns due to reduced air freight costs resulting from higher production volume
- Increased export of flowers and value added products
- Increased replacement of less remunerative crops with high value flower crops
- Reduced environmental hazards resulting from minimized use of plant protection chemicals inside protected structures

11. Identify the key stakeholders and describe mechanisms for consultation/disclosure so far done (widely sharing the documents on the subproject, other mechanisms to get a buy-in with the stakeholders including the farmers).

The following are the key stakeholders involved in the project:

- ◆ Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu
- ◆ M/s. AVT Natural Products Ltd., Erode Dt., Tamil Nadu
- ◆ M/s. Salem Spices Pvt. Ltd., Salem, Tamil Nadu
- ◆ M/s. Vanguard Exports Pvt. Ltd., Coimbatore, Tamil Nadu
- ◆ M/s. Elkhill Agrotech Pvt. Ltd., The Nilgiris, Tamil Nadu
- ◆ KVK, UPASI, Coonoor, The Nilgiris, Tamil Nadu

- ◆ Deepam Self Help Group, The Nilgiris, Tamil Nadu
- ◆ State Horticulture Department, Tamil Nadu
- ◆ State Department of Agricultural Marketing and Agribusiness, Tamil Nadu
- ◆ Authorized plant propagators of imported cut flowers varieties
- ◆ Flower growers and Growers' Associations

12. Chronology of meetings/ activities held in connection with preparation of the Concept Note and Full Proposal

Details of the activities undertaken to develop the Concept Note and consequently to strengthen the Full Proposal are furnished below

| S. No. | Programme | Location | Date |
|--------|---|-------------------------------|--|
| 1. | Preparation of Concept Note and submission to the University (to the DPM, TNAU) | TNAU, Coimbatore | 2 nd week of Sept. 2006 |
| 2. | NAIP Satellite Workshop attended by the Director of Planning and Monitoring of TNAU | CIMR, Cochin | 16.09.06 |
| 3. | Submission of the refined Concept Note to NAIP through the University | TNAU, Coimbatore | 25.11.06 |
| 4. | NAIP Sensitization Workshop | NAIP, New Delhi | 12-13, Jun. 2007 |
| 5. | Interactions with regional Horticultural Research Stations of TNAU regarding their collaboration in the project | TNAU, Coimbatore | 2 nd week of Nov., 2007 |
| 6. | Pre-Stakeholders' Workshop | NAARM, Hyderabad | 28, Nov. 2007 |
| 7. | Stakeholders' Workshop | TNAU, Coimbatore | 14.12.07 |
| 8. | Online submission of Concept Note to NAIP | TNAU, Coimbatore | 25.12.07 |
| 9. | A pro-active Interaction Workshop of the prospective proponents of the successful Concept Notes chaired by DG, ICAR - attended by the Director of Research and CPI of the Lead Centre | NASC Complex, PUSA, New Delhi | 28.12.07 |
| 10. | Preparation and submission to NAIP Helpdesk and subsequent refinement of 'Core body of the NAIP project' | TNAU, Coimbatore | 1 st week of Jan.2008 |
| 11. | Preparation of the Full Proposal | TNAU, Coimbatore | 1 st week of Jan. 2008 |
| 12. | Submission of full proposal to NAIP Help Desk | TNAU, Coimbatore | 10.01.2008 |
| 13. | First review of Full proposal by TAG of NAIP | ICAR Complex, New Delhi | 22 nd & 23 rd Jan 2008 |

| | | | |
|-----|--|----------------------------------|---|
| 14. | Revision (1 st revision) of Full Proposal by incorporation of more research component as per the suggestions of the TAG | TNAU, Coimbatore | 25 th Jan to 17 th Feb 2008 |
| 15. | Second review of revised proposal to TAG of NAIP | ICAR Complex, New Delhi | 7 th and 8 th March, 2008 |
| 16. | Discussion with NAIP Helpdesk | 3 rd week of April | 2 nd week of Apr 2008 |
| 17. | Revision (2 nd revision) of Full Proposal as per the suggestions of the TAG | TNAU, Coimbatore | 1 st and 2 nd weeks of May 2008 |
| 18. | Review of project by RPC of NAIP | ICAR Complex, New Delhi | 16 th and 17 th of June 2008 |
| 19. | Workshop / Training programme on procurement goods, works and consultants' services in accordance with World Bank guidelines | TNAU, Coimbatore | 19 th and 20 th June, 2008 |
| 20. | Review of project by PMC of NAIP | NAIP, New Delhi | 31 st July, 2008 |
| 21. | Intimation of NAIP's Final sanction of the project | August, 2008 | |
| 22. | Launch workshop of the project | TNAU, Coimbatore | 26.08.08 to 18.08.08 |

13. Measures to address the issues

Adequate measures are being taken to educate all the stake holders regarding risk related factors pertaining to the project. Apart from imparting training on improved production, post production, value addition technologies, marketing and supply chain management, the beneficiaries of the training programmes are also being exposed to social and environmental issues pertaining to the project viz., threat posed to environment by green house cladding materials, hazards in using chemicals inside green houses etc. The possible social and environmental issues likely to be encountered in the project and measures to mitigate the negative issues have been discussed in Annexure I

14. Consultation / disclosures in future (Local disclosure through mechanisms such as launch workshop, interfaces during the implementation stage of the sub-project for sharing the results of the project and soliciting the feedback)

- a. Launch Workshop
- b. Interaction Workshops with relevant Stakeholders every year during the project period to share results and collect feedback
- c. Annual reports
- d. Training programmes and field demonstrations during the project
- e. Publications of project findings- brochures, leaflets/ pamphlets, CDs, hosting on websites
- f. Exposure visits

Consortium PI

National Coordinator

National Director

Environmental safeguard: Activities, issues, impact and mitigation

| Activities | Issues | Anticipated level of Impacts (Maximum score 5) | | Mitigation measures (For Negative Impact) |
|---|--|---|----------|--|
| | | Positive | Negative | |
| Research on protected cultivation technologies of flowers | Disposal of greenhouse cladding material | | 2 | Recyclable cladding materials will be identified for use as cladding material for protected structures; the used materials will be recommended for recycling |
| | Hazards to workers due to use of chemicals in a closed environment | | 2 | Appropriate training is given to greenhouse managers, trainees and workers to take up protective measures |
| Organizing training programmes, demonstrations and exposure visits for flower growers / growers' associations | Improved input use efficiency enabling conservation of natural resources | 4 | | |
| | Reduced environmental hazards due to lower usage of plant protection chemicals in protected floriculture | 4 | | |

Social safeguard: Activities, issues, impact and mitigation

| Activities | Issues | Anticipated level of Impacts (Maximum score 5) | | Mitigation measures |
|--|---|---|----------|--|
| | | Positive | Negative | |
| Organizing training programmes, demonstrations and exposure visits for flower growers / growers' associations | Improved awareness on protected floriculture which is one of the fast growing ventures in the global scenario | 5 | | |
| | Conflicts arising in beneficiary selection | | 2 | Beneficiaries are being selected on consultation with the State Dept. of Horticulture and Self Help Groups |
| Research on value addition in flowers | Enhanced marketing (domestic and export) opportunities | 4 | | |
| Imparting training on preparation of value added products to womenfolk and unemployed youth | Export promotion | 4 | | |
| | Entrepreneurship development and enhanced employment opportunities | 4 | | |
| | Women empowerment | 4 | | |
| | Supply chain management of flowers will be in place | 4 | | |
| <ul style="list-style-type: none"> • Establishment of market linkage • Supply chain management • Establishment of supply chain infrastructure | Market glut | | 1 | The surplus flowers will be utilized for value added product preparation |
| Market surveys | Availability of actual benchmark information | 4 | | |