

# A Value Chain on Lac and Lac Based Products for Domestic and Export Market

## Environmental and Social Safeguards Management in NAIP

### A. Basic information

#### 1. Project statistics

Component code	:	2
Name of the CPI	:	Dr. Niranjan Prasad (Sr. Scientist)
Name of CoPIs		Dr. S.K. Giri, Scientist (Sr. Scale), ASPE Dr. S. Ghosal (Sr. Sc., Agronomy) Dr. Sanjay Srivastava (Sr. Sc., Organic Chemistry) Dr. Govind Pal (Scientist, S.S., Agril. Economics) Er. S.K.Pandey (Scientist, S.S., Mechanical Engineering)
Institution		Indian Institute of Natural Resins and Gums, Ranchi
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Consortium partners	:	1.M/s Tajna Shellac Pvt. Ltd., Khunti, Jharkhand 2.M/s Gupta Brothers (Shellac), Ranchi, Jharkhand 3.Nav Bharat Jagriti Kendra (NBJK), Khunti, Jharkhand

**2. Proposed date of start:** 3rd February, 2009

**3. Planned duration:** 3 years 5 months

**4. Project cost:** 227.413 lakhs

#### 5. Project objectives:

- i. To promote cultivation of high yielding lac insects (*kusmi*) for continuous supply chain management
- ii. To promote primary processing of lac (seedlac) at village level

- iii. To reduce losses during processing, improve quality, develop suitable packaging for lac (shellac) and lac based products (bleached lac and aleuritic acid) for domestic and export markets
- iv. To recover and purify the byproduct of lac industry (lac dye from wash water) for economic benefits

## **6. Brief project description:**

The proposed project “ Value chain on lac and lac based products for domestic and export market” will be undertaken by Indian Institute of Natural Resins and Gums, Ranchi (lead centre) and three partners namely M/s Tajna Shellac Pvt. Ltd., Khunti and M/s Gupta Brothers (Shellac), Ranchi, Jharkhand (Private sector) and NBJK, Khunti, Jharkhand (NGO). All these partners are carefully chosen for manageability and to deal on different aspects of lac cultivation, processing and byproducts utilization. The partners M/s Tajna Shellac Pvt. Ltd., Khunti and M/s Gupta Brothers are among the leading manufacturer and exporter of shellac and bleached lac.

The project broadly consists of four objectives with different activities under them. The first objective aims at increasing productivity and production of kusmi lac in the region for continuous supply chain management. The interventions here are promoting cultivation of identified high yielding kusmi lac insect on different hosts; establishing model plantation of ber and semialata for lac cultivation demonstration programmes; providing training on scientific method of lac cultivation on existing hosts and on plantation basis to targeted farmers.

Second objective involves promoting primary processing of lac at village level. The raw sticklac will be processed into seedlac with the help of improved machineries developed at the institute for crushing, washing, drying, winnowing and grading. These machines can be run both by electric power and manually, and hence will be suitable for village level where there is no electricity. For this purpose, a model primary processing unit will be established at the Institute and will be demonstrated to interested stakeholders for its popularization.

Third objective aims at refinement of existing processing technologies/machineries of selected lac based products (shellac, bleached lac and aleuritic acid) with the emphasis to reduce losses during processing and to improve quality of these products. A few currently used machineries/process has been identified where improvement will be done and also some new machineries will be introduced for manufacturing of selected lac based products. It is also aimed to identify suitable packaging materials and packaging interventions to enhance better marketability of lac based products. Feed-back on consumer preference will be elicited to make necessary modifications and also target them to domestic and export markets.

In the fourth objective, value addition of by-product utilization is envisaged to increase the profit of enterprises as well as to reduce environmental pollution. One such potential by-product of lac industry is lac dye, which will be recovered from wash water and purified by technology developed at the Institute. The technology will be up-scaled at entrepreneurs level through establishment of plant for production of lac dye.

Total fund required is Rs. 227.413 lakhs

#### 7. Environmental category issues in the subproject

- **Social:** The major social issues likely to arise related to how we target the most deserving of the stakeholders in the cluster in terms of project interventions, whether the technology interventions will have impact on employment for the landless and whether the interventions will have impact on the women, particularly either increasing her work or reducing drudgery. Other issues relate to the treatment of common property resources and what impact it will have on the landless who are using such resources for their livelihood.
- **Environmental :** The project will have mostly positive impact on environment as it focuses on establishment of lac host plantations on barren and wastelands, conserving forest resources and biodiversity. The interventions will also focus on minimizing chemical pesticide use in the environment through promotion of IPM and NPM practices in lac cultivation.

#### 8. Safeguard policies triggered (World Bank policies)

Safeguard policies triggered	Yes	No
Environmental assessment (OP/BP 4.01)	X	
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

- Adoption of improved package of practices of lac cultivation in a holistic way may be a problem for poor lac growers if funds are inadequate.
- Raising of lac host plantations and protecting it from grazing may be difficult in certain areas

- Training programme among uneducated and un-organized tribal lac growers may be a problem
- Industry may hesitate carrying modification without adequate support
- Some poor farmers may prefer financial support for adopting improved technologies

## **9. Impact assessment**

Given below, and adequately addressed

## **10. Potential indirect and/or long-term Impacts due to anticipated future activities in the project areas (assessment of anticipated conflict/complimentarily with the current as well as those proposed for the next five years in the areas of activities of the sub-project):**

- The production of kusmi lac will increase there by increasing the farm income of tribal lac growers
- The indirect benefits will be sustainability of lac cultivation in the region where frequent crop failure takes place, offering continuous supply to industry and export
- Primary processing at village level will give more remunerative to the farmers and also will solve the problem of storage of raw sticklac
- Rural entrepreneurship will help in reducing migration to urban areas through enhanced employment and income generation
- Improved product quality will help in better price of Indian lac based products in export markets, thereby increasing export earnings for the country
- Large scale cultivation of lac on existing lac hosts will help in conservation of tree resources thereby maintaining ecological balance

## **11. Identify the key stakeholders and describe mechanism for consultation with and to them done/disclosure so far done including pre-project consultations with stake holders workshop before formulating the full proposal, discussing the full proposal with some stakeholders before submission to the PIU:**

### **Public Institutes:**

1. IIP, Hyderabad
2. IIM, Ahmedabad
3. Farmers and Consumers

### **Private Participation:**

4. M/s Tajna Shellac Pvt. Ltd., Khunti, Jharkhand
5. M/s Gupta Brothers (Shellac), Ranchi, Jharkhand

### **NGOs**

6. Nav Bharat Jagriti Kendra (NBJK), Khunti, Jharkhand

### **International Institutes:**

7. Texas A & M University, USA
8. Clemson university, USA

Preliminary discussions were held with few stakeholders and NGOs before organizing stakeholders workshop. They were made aware of NAIP project, objectives and expected outputs and impact. The final modalities will be worked out after the project approval

## **12. Chronology of meetings/ activities held in connection with preparation of the concept note and full proposal**

<b>Sl. No.</b>	<b>Date &amp; Location</b>	<b>Programme</b>	<b>Participants</b>	<b>Remarks</b>
1	05.08.2008	Meeting with consortium partners	Co-PIs of consortium groups	Interaction meeting
2	29.08.2008	Meeting with consortium partners	Co-PIs of consortium groups	Fine tuning of objectives & activity
3	25-27.09.2008	Interactive workshop at NAARM, Hyderabad	National Coordinator (Component 2), Experts, PIs, and Co-PIs	To revise project proposal
4	13.10.2008	Revision as per NAARM Workshop suggestions and guidelines	Consortium partners	Suggestions attended
5	6-7.11.2000	Meeting of Expert Group	National Coordinator (Component 2), Experts, PIs, and Co-PIs	To revise project proposal
6	17-18.11.2008	RPC meeting	Chairman, RPC and Members	To revise project proposal
7	25.11.2008	Cost committee meeting	National Co-ordinator (Comp.-2), Dy. Dir. Finance (NAIP) and director Finance, IARI	To revise budget

## **13. Measures to Address the Issues:**

A document on Safeguard Matrix has been prepared. Farmer's education and training for use of IPM and NPM practice in lac cultivation will be conducted for the participating farmers in the sub project.

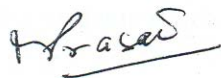
Awareness of risk related factors will be addressed to the stakeholders through orientation session on topic such as adoption of improved package of practice in a holistic way using technologies such as scientific method of lac cultivation, raising and protecting lac hosts

plantation, educate the unorganized tribal lac growers about benefit of modern method of lac cultivation. Hesitation of industries for modification in their plant and machinery will be addressed through explaining them the benefits of improving lac products quality and refining their process, which will provide them edge in both domestic as well as in global competitive export market.

#### **14. Consultation/disclosures to be done in future**

Local disclosure through mechanism such as launch workshop, interfaces during the implementation stage of the subproject for sharing the results and soliciting feed-back, one will circulate project brochures and implementation progress from time to time, putting up annual reports on the web site and annual stakeholder workshops wherever feasible.

The consultation/disclosures will be done as per NAIP guidelines depending on the progress of the project. Training, demonstration programmes and workshops on various themes relevant to farming, primary processing, value addition, packaging etc. will be conducted. The project findings will be disclosed time to time and necessary feed back will be collected for further improvement and better implementation. Assistance of different organizations will be taken as and when required.



**Consortium PI**

**National Coordinator**

**National Director**

**Safeguards Template for NAIP Projects**

**A: Environmental safeguard : Activities, Issues, Impact and Mitigation Measures**

**Table 1. Environmental safeguard: Activities, Issues, Impact and Mitigation Measures**

Activities	Issues	Anticipated level of impacts		Mitigation measures (negative impact)
		Positive	Negative	
Cultivation of high yielding Lac insect.	Use of pesticide for pest control.		√ (1)	Pesticide (other than those banned) will be used
Establishment of lac host plantation	Agro-biodiversity, afforestation, soil erosion control, Efficient utilization of barren lands	√ (4)		
Primary processing at village level	Increased consumption of water and discharge of lac wash water		√ (2)	Efforts will be made to utilize wash water for production of lac dye
Increased production of lac based value added products	More demand of raw lac that will encourage more production of lac	√ (2)		
	More use of water, chemicals etc.		√ (2)	Efforts will be made to treat the waste water before disposal
Utilization of lac wash water for recovery of lac dye	Reduce environmental pollution	√ (4)		

**B. Social Safeguards : Activities, Issues, Impact and Mitigation Measures**

Table 2. Social safeguard: Activities, Issues, Impact and Mitigation Measures

Activities	Issues	Anticipated level of impacts		Mitigation measures (negative impact)
		Positive	Negative	
Cultivation of high yielding lac insect	Increase in productivity and production of lac	√ (4)		
	More dependence on external resources i.e. broodlac (Lac seed )		√ (2)	Emphasis for production of broodlac would be laid generate more internal resources
	Unequal access to inputs		√ (2)	Institutional measures would be employed to make inputs available particularly to small farmers through collective action
Establishment of lac host plantation	Efficient utilization of barren lands	√ (3)		
Primary processing at village level	Employment generation at village level and increase in income.	√ (4)		
Increased production of lac based value added products	More consumption of law lac and increase in export earning for the country	√ (3)		
Recovery of lac dye from wash water	More utilization of by-product and increase in export earning for the country	√ (3)		

## **Brief note of Environmental and Social Safeguards**

Establishment of lac host plantations, crop diversification, utilization of lac wash water for recovery of lac dye, and production of lac based value added products are some of the activities that will create positive impact on the environment. Positive impacts include agro-biodiversity, conservation of soil and natural resources, increased availability of land. Use of chemicals, insecticides, pesticides and fertilizers might result in degradation of soil, air and water biological status and requires careful mitigation measures like integrated nutrient and pest management principles scientifically and judicially adopted by the target groups through facilitation of the consortium partner.

Increased livelihood security of the tribal lac growers, diversified income and occupational patterns, employment generation and value addition are the positive impacts generated as a result of project activities. Effective dissemination and wide spread adoption of these interventions would result in sustainable livelihood security among the targeted rural community, increase profit to farmers and entrepreneurs and more export earnings for the country. These interventions targeting the farming community might also result in the unequal access of the available inputs & knowledge. Also, promoting of advanced technologies generally will have some incremental cost & lack of availability or dependence on external resources. These negative impacts arising due to the developmental activities will be carefully mitigated through effective impartial institutional mechanisms & community participation will be ensured across all levels of decision making.

Other Governmental Bodies and line departments working in the cluster region will be sensitized through workshops. These mechanisms ensure augmented awareness among the line departments. Further more Cluster level coordinator of the project will liaise with village and district level authorities to execute program successfully. Identification and Selection of farmers for the cluster will be based on the time tested protocols followed by State Government and other Non governmental organizations.

As the two of the selected clusters for this project face insurgency problems, some jitters might occur which have been foreseen. But confidence of the local community accrued from the past projects and support from district collector will facilitate better execution of this project. Farmers, Panchayat Raj Institutions, research institutions, government and non-government institutions engaged in improving rural livelihoods are the key stakeholders for this project. Several rounds of discussions and brainstorming sessions with stakeholders and workshops were organized during the pre project consultation. After the launching also a stakeholders interaction meeting involving all the line departments and banks will be organized in each cluster. An advisory committee at the district level drawing from all the line departments to review the progress of the project from time to time is being proposed.