

Value Chain on Wild Honey Bee

Environmental and Social Safeguards Management in NAIP

Basic information Project data

1. Project statistics:

Component code : 2
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Name of CoPI : Dr. V. V.Belavadi
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Consortium partners

- :
- 1 National chemical Laboratories, Pune
 - 2 Tamil Nadu Agricultural University, Coimbatore
 - 3 Vivekananda Sevakendra-o-Sishu Uddyan (VSSU), Ullon, West Bengal

2. Proposed date of start : March, 2009

3. Planed duration : 3 year & 3 months

4. Project cost : 351.9525

5. Project objectives :

- 1: Extraction, isolation, testing and identification of bio-active compounds from selected plant species with calming ability of wild honey bee species.
- 2: Training of tribals in different states on sustainable harvest methodology of wild bee honey using available and newer technique.
- 3: Processing, testing, grading, packing of wild bee honey obtained at tribal areas and its evaluation and organic certification
4. Utilizing honey in making of value added bakery, dairy and fruit products

6. Brief project description

India produces about 70 thousand tons of honey annually. The major part of honey produced comes from wild bee colonies. Its harvest has been carried out very crudely by exposing the nest to smouldering fire as to chase the bees away from the comb area and then comb is cut and honey part is separated. Part of the comb containing larvae and egg stages of the honey bee is destroyed resulting in loss of huge number of bees and their colonies. This method is unhygienic and honey so obtained would not have acceptable appearance and gets spoiled soon. Recent technology available is the one which involves chasing of bees using thick smoke followed by removal of 'honey part' of the comb in the centre and leaving rest of the nest to recoup to its earlier form. This facilitates more than one harvest per colony and also colony is not destroyed. The project also aims at using certain plant extracts which have proven bee repellent characters in the harvest of honey so that even the use of smoke is done away with. Molecules responsible for bee repellent character will be isolated and attempted to be identified for use in safe method of honey harvest. These aspects will be covered under first objective. Under the second objective the transfer of technology of hygienic and safe harvesting of honey to the honey hunter groups would be done that would greatly help the production of clean honey. In addition, thousands of colonies will be saved and their multiplication will be facilitated. Large part of forest honey traded is not declared as organic and sold as normal honey. This accounts for huge monetary loss to the honey hunters, traders and to the nation. Creating facility of processing in the production area of wild honey and its grading packaging and organic certification as envisaged under objective three would enhance its demand and help fetching good amount of foreign exchange. The forest honey will have better taste and aroma which is therefore more suitable for value added of dairy, fruit and bakery products. Under the last objective these aspects are dealt with. Not only it will widen consumption pattern but also would create more demand for forest honey. Ultimately, the project envisages the enhancement of earning of honey hunting tribals vis-à-vis bee colonies' conservation in the wild.

Keeping these in view the present project is conceived as to introduce several interventions in the existing value chain on wild bee.

7. Environmental category issues in the sub-project

The project objectives encompasses conservation of eco-system through saving of wild bee colonies in nature with novel methods of honey harvest. Hence social and environmental issues are not anticipated. If such issue in case emerge they would be suitably addressed in the project (ANNEXURE I and ANNEXURE II).

8. Safeguard policies triggered (World Bank policies)

Safeguard Policies Triggered (World Bank Policies)		
	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

- In the event of drought honey production will be drastically reduced. Colony numbers will come down eventually affecting the success of the project. Alternate project area may be embarked upon for further studies
- In the event of banning of honey hunting by the government or the forest department, project will suffer in fulfilling the objectives. Special permission would be sought from the highest office of the forest department. The banning is quite remote since tribals are permitted to harvest honey as 'their right' in reserve forest areas in Karnataka. In Tamil Nadu peripheral crop areas are targeted. The little wild bee is quite prevalent in the latter state on which major focus is laid. The third partner will take up project in Sundarbans which is regular source of honey for tribals hunting for honey.
- Risk of forest fire may hinder the activity as well as the harvest. Forest department will be instructed to safeguard the tree bearing colonies from the forest fire.
- Pests and disease of bees may affect the harvest. To avoid pests like wax moth spread to other colonies the tribals will be guided to remove deserted combs of bee soon after the desertion.
- Aggressiveness may be fatal to the harvester. A mitigation measure, the harvest kit including bee overall will be used. Insurance coverage of the people will be tried through their societies.
- Value added product may not find immediate market demand. Therefore while developing the product its consumer acceptance will be studied side by side. The timely guidance of entrepreneurs would be undertaken.

9. Impact Assessment

Base line data will be developed by the economist and partners working on bakery, fruit and dairy value added products on all aspects of the project. With this reference line impact assessment will be made. The assessment made will be evaluated from time to time as to make mid-term corrections.

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)

- Wild bees are wealth of nature, particularly wealth of forest. They should be conserved and propagated judiciously. Tribal are often unaware of honey bee value to nature and mankind. The project focuses in awareness creation among tribals in this regard. They would know that wild bees are not only source of honey but also pollination agents of majority of flora around them.

- Bee colonies are natural resources and they would be tracked digitally and documented. Therefore, it would serve as referable document for conservation of bees
- Tribals and honey hunters would be made more nature conscious through the project admonitions and efforts and they would be enabled to harvest honey without causing any destruction of the wild bee colonies and also they would be able to attract wild bees to raft for easier honey collection
- Under the project, the tribals/ honey hunters would join together in the form of SHGs or become members of Lamp societies and they would be guided to work together to collect organic honey hygienically and process the honey to fetch better price.
- Use of plant species having repellent/ tranquilizing effect on wild honey bee would facilitate non-destructive method of honey harvest. This would enhance quantum of honey harvested from wild. Further, this will open up new line of research due to ease of handling this bee in the interest of the bee species conservation.
- Processing of honey from Wild bee would help increase its quality tremendously and enhance shelf life as well at producer's level.
- Trained personnel in honey quality testing are generated and made available for tribal groups for their trade.
- Wild bee honey fetches organic honey certification as facilitated through the project and thereby enter into in high end market as premium produce.
- Expertise becomes available with production know how of Value added bakery product, dairy products and fruit products with honey blending

11. Identify the key stakeholders and describe mechanisms 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 :

Most of the partners were contacted telephonically and through e-mail. The discussions were made continuously during the formulation of the project.

		Partners	Mechanism of consultations/criterion of selection of partner
Consortium Partners	1	National chemical Laboratory, Pune	The partner scientists was contacted after ascertaining his contribution and expertise in the area of natural product chemistry
	2	Tamil Nadu Agricultural University, Coimbatore	The partner scientist has long experience in the area of honey bee research therefore would be able to deliver the goods.
	3	Vivekananda	The NGO is a service oriented one and works

		Sevakendra-o-Sishu Uddyan (VSSU), Ullon, West Bengal	for the poor. Their credentials are high and it is serving the people since long time
Associate Partners		Public institutions	
	1	SHGs, LAMP societies, NGOs working for tribal groups	These are to be contacted according the project area selected.
	2	State Forest Department	The service of forest department was solicited through personal meeting with the forest officers of the cadre of DFO and PCF
	3	Mother Dairy,(Karnataka Milk Federation) Bangalore	The mother dairy was contacted through the manager who had shown keen interest in the honey based product development
	4	Central Bee Research And Training Institute, Pune;	This has been contacted continuously but the cooperation is anticipated in course of the project implementation. They were chosen earlier as partners but later dropped to the level of associate partners owing to lack the permission granted to the scientists concerned by their head quarters. The effort is on.
Private partners/consultants			
	1	Centre for Bee Development, Nalwadi, Wardha (MS), 442 001;	With the lack of participation in the project by central bee research and training institute this institute was chosen to be associate partners since they have long experience in handling of wild bee species
	2	APOF Organic Certification Agency, Bangalore;	The agency is Bangalore based and are authorised global certification agency.
	3	Cosmos consultant Inc. Bangalore	Agency would provide technical guidanc in honey processing and bakery product developemnt

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

Sl. No.	Date & Location	Programme	Participants	Remarks
1	28-05-2008 USA, GKVK, Bangalore	Communication from DR to prepare concept note	CPI and Associate Scientists	Concept note preparation initiated
2	30-05-2008 USA, GKVK, Bangalore	Finalization of concept note for submission	CPI and Associate Scientists	Concept note was submitted
3	30-05-2008 to 25-09-2008 USA, GKVK, Bangalore	Telephonic communication, Email exchange with the partners to	CPI and partners	Consortium Partners were finalised with the possible designated work
4	25 th -27 th September 2008 NAARM, Hyderabad	Workshop on how to prepare winning proposal	CPI and selected consortium partners	Participated in the workshop to learn how to prepare winning proposal. Comments were noted.
5	13 th to 14 th October 2008 UAS, GKVK, Bangalore	Meeting with consortium partners	CPI and Consortium partners	As per the advice of experts VSSU-WB was included and other 3 centres were deleted. Full draft proposal was prepared.
6	6 th and 7 th Novemeber NAIP HQS	Presentation before TAG-2	PI and CPI from TNAU, Coimbatore	Himalayan Drug Company was dropped from the consortium as per the advice. Further , CBRTI, Pune was also dropped as a partner due to failure of KVIC Mubai to grant permission to the scientists to participate in the project so far.

13. Measures to address the issue:

Imparting training to tribal men to harvest honey from wild bee in sustainable and harmless manner so that colonies survive. Training them to avoid indiscriminate harvesting. Training to be provided to separate clean honey from combs and further subjecting the honey to processing in the plant to be run by their societies monitored by govt. dept such as forest department/ govt recognised NGOs.

Facilitating processing, packing and providing market linkage to the society involved in the setting up of the plant.

Demand creation for forest honey through organic certification and development of value added bakery, dairy and fruit products with honey.

14. Consultancy / disclosures to be done in future:

The consultation/ disclosures will be done as per NAIP guidelines depending on the progress of the project. The information generated in the project will be shared during various interactive activities such as workshops, seminars, symposia among the interested

students, scientists, entrepreneurs and others on selective basis (barring the patentable items). A web page will be developed as to make available of the generated information to everyone. The information available through feed back from all quarters will be accepted for future improvement and better implementation of the project. The project would document impact and the findings in the form of brochures/ CDs/ videos/ literatures and make it available to the interested public. All stake holders in the project would share responsibility in this endeavour. From time to time dissemination of information and sensitization of relevant line departments of state would be made. The value added products developed will be demonstrated to the stake holders for further popularisation among entrepreneurs. The stake holders will be advised to propagate the skills taught in the project to all other relevant beneficiaries who may not be directly connected to the project as to make it trans-national.

Consortium PI

National Coordinator

National Director

Annexure I

Environmental safeguard: Activities, issues, impact and mitigation measures

Activities ¹	Issues	Anticipated level of Impacts ³		Mitigation measures (Negative Impact) ⁴
		Positive	Negative	
Utilising specific plant species with bee repellent property for moderation of aggressive nature of wild bee	No Bee repellent plant species are used in honey harvest so far. Its use would facilitate harmless harvest of honey	4	0	
Sustainable method of harvest of honey	Crude method of harvest of wild bee honey is being followed. Suggested method would save bee colonies from damage vis-à-vis safeguard brood, adult bees and queen bee.	4	0	
	The method underlines the concept of sharing of honey between man and bees	4	0	
Hygienic harvesting of honey.	Presently, production of raw honey is by squeezing of comb along with lot of extraneous matter like pollen, wax, brood etc. suggested method would produce ready to trade honey	4	0	
	Low shelf life of honey		2	Honey will be subjected to processing to reduce moisture content and removal of extraneous matter
	Harvest of immature honey		2	Constant advise to tribal men to harvest honey at appropriate time of maturity will be given
Training in Conservation of wild bee colonies will be imparted	Bee colonies are being destroyed in coconut gardens. The activity would save hundreds of bee colonies and help coconut pollination	4	0	
Processing technologies				
Processing of honey	Removal of wax, pollen and other extraneous material from honey		1	Some organic waste produced will be diverted into composting
Assessment of environmental impact of interventions in the project	Improved bee population and enhancement of honey production	4	0	

Annexure II

Social safeguard: Activities, issues, impact and mitigation measures

Activities ¹	Issues	Anticipated level of Impacts ³		Mitigation measures (Negative Impact) ⁴
		Positive	Negative	
Base line survey	Poor availability of bench mark information		2	Involvement of forest dept and tribal societies help to carry out the survey
Enhancement of income of honey hunting tribals	Enhancement of income by imparting training in production of hygienically harvested clean honey that would fetch higher price	4	0	
Prevention of harm to harvester during the harvest of wild bee honey in case of unskilled /lowly skilled persons	Harvesting honey using bee suit and other materials provided in the harvest kit for easy harvest of honey	4	0	
Adequate supply of good honey to processing plant	Supply of poor/ adulterated honey to processing unit.		2	Selection of potential place for setting up plant Using Honey testing kit to vet the samples.
Strengthening of market linkage to the tribals	Ensuring better price for honey harvested by tribals through providing processing facility and market linkage	4	0	
Developing methods of value addition and organic certification	Enhancement of demand for value added products of wild bee honey	3	0	
Strengthening the poorly organised honey collecting tribals and prevention of exploitation of them by honey traders.	Strengthening the groups and creating awareness through training programmes in the value chain on honeybee	3	0	
Entrepreneurship development	Imparting training in bakery products and dairy products	4	0	