

BEEKEEPING AS A LIVELIHOOD FOR RURAL PEOPLE OF DISTRICT DANTEWADA

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ABSTRACT

"Beekeeping as a livelihood" the study was carried out in KVK Dantewada, in the year of 2018 was used as base year for the establishment of apiculture as employment in the district. The Dantewada district having a dense forest area covers of about 79% of total geographical area. This district comprises of 78% tribal population and they are typically dependent on the forest produced, agriculture and smallholders farming. Krishi Vigyan Kendra Dantewada (Chhattisgarh) has initiated an effort as beekeeping in order to provide employment to the rural people and doubling their income as well. KVK Dantewada providing financial and technical support to the beekeepers through which they can enhance their income by selling the bee products. Beekeeping has proven to be such an alternative livelihood option with potential of providing alternative income security to smallholder farmers living in forest area. 500 Beneficiaries of 16 villages were taken as unit of analysis to check the enhancement of farmer's income annually, where 470 beneficiaries was found highly benefited by the apiculture and they are being well established thorough it.

Keywords: Beekeeping, Livelihood, KVK Dantewada, Honey Bee, Rural people.

Introduction:

Apiculture or Beekeeping is the art and science of collecting, processing honeybee colonies of desired species having them in specified and standard boxes, installing at appropriate sites, managing optimum number of colonies scientifically round the year and harnessing both direct and indirect benefits of the activities. As such a degree or high qualification is not essential in order to work in this profession. Apiarists can be developed and trained to handle the enterprise. There is vast potential and scope from diversification in Apiculture i.e. besides honey its offers scope for production and marketing of other bee products like bee pollen, bee propels, bee way bee venom and Royal selling. Honeybees can also be managed as and when required for pollination of field and Horticultural crops and for hybrid seed production in vegetables and other bee pollination crops technologies for the production of different products i.e. Royal jelly, bee pollen, bee porpoise, bee venom, Queen bees, package bees etc. now available in India. Beekeeping is an environmentally friendly and non-farm business activity that has immense Contribution to the economy of segments of the society and to a national economy (Bersmp 2008). In Dantewada district, where land holding is less than 0.5 ha beekeeping can provide better food, balanced nutrition and employment to small and marginal farmers. It can also provide the unemployed and underemployed persons with full employment and extra income. Modern bee hives also enable beekeepers to transport bees, moving from field to field as the crop needs pollinating and allowing the beekeeper to charge for the pollination services. They provide, revising the historical role of the self employed beekeeper and favoring large scale commercial operations. Today, beekeeping is an important, sustainable, integral agricultural activity and opportunity for the farmers to adopt as an enterprise. It provides nutritional, economic, and ecological security and balance. The knowledge of agro-climatic conditions, the diversified flora, changing agri / horticultural pattern of the crop, the types of bees, the management practices etc. play a pivotal role in transforming the beekeeping industry in the Chhattisgarh. Rural poor dependent on subsistence agriculture and small farm lands often rely on alternative sources of income for their livelihoods. For such circumstances, (Yap, Devlin, 2015; Wolff *et al.*, 2015) propose that beekeeping is often promoted in the context of rural development because the practice provides monetary, nutritional, and social benefits to poor families, without requiring land ownership or large amounts of capital investment. According to (Lietaer, 2007), beekeeping can be practiced as an additional source of income for farmers in rural areas and has been successfully implemented in poverty-alleviating projects. (Joni, 2004) also states that beekeeping plays a major role in the socio-

economic development of rural livelihoods. (Mazorodze Brian T., 2015) suggests that beekeeping not only contributes to uplifting the livelihoods of rural communities but protects the trees and ultimately contributes to protecting our planet earth. He further argues that beekeeping is ecological friendly, requires few resources to start up production, can be quickly taken up again after a crisis period and the necessary skills are easily transmitted from one generation to the other making it a sustainable livelihood strategy. Arguing on resource requirement and investment in beekeeping endeavors, (Bradbear, 2009) also concluded that beekeeping does not require expensive equipment, as simple hives can be made from local materials by local artisan.

Material and methods

Dantewada district has vast resources of bee flora and there is a great scope for further expansion of beekeeping in district. To keep this view KVK Dantewada has initiated an effort as beekeeping to provide employment rural people as well as doubling the income of the farmer of district Dantewada. In Chhattisgarh state beekeeping is practiced in mountains, foot hills, forest, agricultural lands and Mangrove forests especially in Dantewada. The geographical area of Dantewada is (3,410.50 km²). The latitude of Dantewada, Chhattisgarh, India is **18.900764**, and the longitude is **81.345177**. **Dantewada, Chhattisgarh, India** is located at *India* country in the *Towns* place category with the gps coordinates of 18° 54' 2.7504" N and 81° 20' 42.6372" E. **Dantewada, Chhattisgarh, India** elevation is a 352 meters height, that is equal to 1,155 feet. The geographical area of Dantewada district is full of nature's most beautiful, systematic and well-woven streams and springs. Forests are extended into rugged and inaccessible area. KVK, Dantewada has been started many enterprises as employment for the rural people which includes Kadaknath poultry farming, Mushroom cultivation, Moringa Powder etc. But Beekeeping may prove to be one of the best income generating enterprises. In these way Comprehensive methods approaches were used to collect data of the farmers from different villages of district. Initially the training of beekeeping was started with 700 beneficiaries. It has found that some of them are incapable to adopt beekeeping afterwards 500 beneficiaries from 16 villages were taken as unit of analysis to observe enhancement of farmer's income annually. KVK Dantewada organized four training of 2 days in relation to beekeeping under the supervision of honey bee experts and scientists. As per beekeeping selected people received training and election of the beneficiaries has been decided on the basis of interest and land holding area. In addition, Self Help Group's (SHG's) of woman were also received training of beekeeping and they have implemented it successfully in their own fields.

Table: 1 Training schedule

S. N.	No. of training organized	Duration of the training	No. of beneficiary trained in the KVK	No. of selected beneficiaries
1	5	3 days	700	500

Result and discussion

Beekeeping as an Employment" the effort was initiated by the Krishi Vigyan Kendra Dantewada. Initially the training of beekeeping was started with 700 beneficiaries. It has found that some of them are incapable for adopting beekeeping later 500 beneficiaries from 16 villages were taken as unit of analysis. Selected villages and their belonging people are categorized in different zones via; Zone-1, Zone-2, Zone-3, Zone-4, Zone-5 as per location and distribution of the bee boxes has done on the basis of availability of bee flora in their fields and land holding area. Krishi Vigyan Kendra Dantewada also provided financial and technical support to the beekeepers such as: bee veil, bee boxes, honey harvesting tools etc. As per expectations all the beekeepers performed well in their level. The production of honey was found maximum in the months of honey flow period later production of honey were gradually decreased as the less availability of bee flora in the fields. Beekeeping is being famous as enterprise in the district and around 470 beneficiaries were found highly benefited by the apiculture and they are becoming well established through it.

Table: 2 Estimate of Beekeeping for 500 Beekeepers

Establishment of beekeeping

S. N.	Description	Qty.	Rate	Amount (Lakh)
1	Bee Hive Box (ISI-A)	500	2000/-	10.00/-
2	<i>Apis Cerena</i> Bee Colony (Livestock)	500	2000/-	10.00/-
3	Honey Extractor-Steel (For ISI-A type super frames)	500	1500/-	7.5/-
4	Stand for Bee- Hive Boxes	500	500/-	2.5/-
5	Smoker	500	350/-	1.75/-

6	Bee-veil	500	400/-	2.0/-
7	Hive Tools	500	150/-	0.75/-
8	Comb foundation sheet	40000	30/-	12.0
9	Transportation	5000	400/-	2.0/-
10	Salary for two Technical field officer for 24 months	2	12000/-	5.76/-
11	Two Honey man and a Driver for mobile honey processing unit (Bus) for 24 month	3	8000/-	5.76/-
12	Training (each training 2 days)	500	600/-	3.0/-
13	Exposure visit of farmers to Muraina District (M.P)	50	1500/-	0.75/-
14	POL	-	-	2.0/-
15	Contingency	-	-	1.0/-
16	Publication f folder/Training manual/bulletin	02	-	0.6/-
17	Video Camera	01	60000/-	0.60/-
18	Motor cycle	02	80000/-	1.60/-
19	Activa/scooty	01	75000/-	0.75
Total				70.32

Table: 3 Honey productions from the different area of the district Dantewada

S. N.	Beneficiary of different villages	Beneficiaries	No. of boxes distributed to the beneficiaries	Honey production (Kg/Annum)	Honey production Zone wise (Kg/Annum)
ZONE-1	Prokameli	40	40	327	1,393
	Dhurali	70	70	483	
	Bhansi	25	40	289	
	Nerali	25	40	294	
ZONE-2	Binjam	35	60	589	1,361
	Siyanar	25	25	191	
	Jhodiabadam	45	45	407	
	Kutulnaar	15	15	90	
ZONE-3	Samloor	15	15	84	1,583
	Heeranar	50	80	752	
	Kasoli	35	70	609	
	Barsur	20	20	126	
ZONE-4	Hidpal	15	15	96	621
	Teknar	25	25	183	
ZONE-5	Gumda	35	60	438	157
	Purantarai	25	25	157	
Total production = 5,115 kg/annum					

Source* as per the previous data of Livelihood College, Dantewada, (CG) and Rural people of the district

Potential Role of Beekeeping in Doubling the Income of the Rural People:

1. Increases production through pollination: Dantewada, Chhattisgarh has vast resources of bee flora; there is a great scope for further expansion of beekeeping in district. Ingrid (2004) stated that apiculture which depends on the natural vegetation for nectar sources, the richness of natural vegetation assures the richness of the nectar source and sustains the honey production. The greatest added value of beekeeping lies in the fact that bees pollinate agricultural and horticultural plants. About one third of all plants or plant products eaten by humans depend directly or indirectly on bees for their pollination (Bradbear 2009). Crops pollinated by bees have been proven to produce higher yields and better quality, often at no extra cost for the farmer, rather crop seed yield increment. Yet, many farmers consider bees and other as harmful insects (Berenbaum 2007). Ideally, a good beekeeping area is the one in which nectar and pollen plants grow abundantly and with a relatively long blooming season. Such areas are however not always available or easy to find. Beekeepers must know the time and duration of the blooming season of every major honey plant including the environmental factors affecting them and carrying capacity of the area, which includes the number of colonies that can be put for maximum production Rajan, B. (1980). Production of honey and other products depend on availability of floral resources (bee forage) and is a very important field for most beekeepers in the world Rucker et al (2002).

2. Provides livelihood and source of income generation

Beekeeping not only produces a nutritious and high-value food product which generates income, but it also creates employment possibilities along the honey value chain (input provision, production, processing, and marketing). Beekeeping does not consume large amounts of land – a backyard is sufficient – so it releases people from land-demanding activities and reduces pressure on land (Mengistu, 2011). Indian government has launched Krishi Kalyan Abhiyan-II (KKA-II) which emphasize greater participation of women and young people in all the states, included sectors under KKA has been worked together for awareness of rural people.. Krishi Vigyan Kendra, Dantewada visited around 25-30 villages of the district in order to aware the rural people in relation to beekeeping. In addition, Livelihood College Dantewada was also worked for welfare of farmer with regard to beekeeping. As beekeeping requires relatively lower levels of investment and is a non-physically demanding work, it is also favorable for women and landless youth. Recently, the Ethiopian government is intensively working in organizing jobless urban and landless rural youth and women to involve in them in bee equipment production and beekeeping activities. A significant number of people are currently engaged in honey and beeswax collection, “tej” (honey wine) making, honey and beeswax processing and marketing (MoARD, 2007). One key discovery has been the transformative power of new technologies. In the past, few women became beekeepers because traditional hives are usually placed high up in trees. But modern hives set on the ground make it far easier for them. Traditional beehives mounted on trees in forest areas are usually managed by men, but transitional and framed beehives are located in the backyard, providing women with the opportunity to combine household activities with a remunerative beekeeping enterprise, increasing the number of females engaged in beekeeping activities by 160% Paulos (2011). Even though the country’s honey production increases by about 90 %, several factors impede beekeeping in Ethiopia and it remains a largely untapped industry (ILRI and MoA, 2013). Among others, lack of modern production techniques, constraints in market access, missing financial support, and a low degree of institutionalization continue to be significant roadblocks (Mengistu, 2011). For example, Ethiopian beekeepers still largely rely on traditional production techniques, like beehives in treetops, which yield only around 6 kilograms per harvest. Transitional and modern hives, on the other hand, can yield up to 20 kilograms and are managed at ground level (Tamrat, 2015).

Conclusions

In the district bee hives has been harvesting with traditional method since many years ago. Rural people harvests bees hive only one time by burning. When they use of bee boxes may harvest many times from single bee box. Beekeeping has proven as alternate and additional source of livelihood by providing additional income to the farmer and employment as well. Therefore is an ideal activity for small scale resource-poor farmers. Beekeeping is a non-physically demanding work; it is also favorable for women and landless youth. It may provide stability to the young, man and women.

Recommendations

- Beekeeping is a non-physically demanding work; it is also favorable for women and landless youth. So if such like off-farm activity be encouraged through special attention of women and youth, one step forwarded in terms of the country’s plan of Krishi Kalyan Abhiyan (KKA) which Emphasize greater participation of women and young people.
- The Indian government has recognized the role of the apiculture and has put in its development agenda, mainly as a non-farm income generating activities, to increase income of the rural and urban households and to promote the export sector. There is an encouraging support from the government and NGOs to develop micro and small scale enterprises in apiculture. It should be also understood that the market problem, beekeepers _knowledge gap and extension support increasingly improving (though a lot still remains). This will give a possibility of increasing bee product export revenue and improving the production efficiency.
- Indian government has initiated the programme KKA in state level which including all the sector where Krishi Vigyan Kendra Dantewada played a vital role in dissemination of knowledge, encouragement and support to the farmer and rural people of the district to adopt beekeeping as livelihood so it may great opportunities for the farmer to get additional income.
- Application of advanced technology for collection, and processing of honey.
- Recognition of bee keeping as agro-industry.
- Developing an efficient export marketing network to optimize the production and exports.
- Livelihood of communities in rural mountains is mainly dependent on subsistence agriculture; they always require an alternative source of income.

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