ROLE OF KVIC IN BEEKEEPING AND RURAL DEVELOPMENT IN INDIA

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The vast agriculture, horticulture and forest cover of India coupled with overdominance of its majority of rural population on agriculture and allied occupations make beekeeping one of the most important potential village industry. Because of the low level of mechanization involved, the beekeeping industry offers direct employment to lakhs of people especially hill dwellers, tribals. Sustainability of this industry is therefore vital to the country's economic well being and development. With the advancement of scientific knowledge, the pot hives, clay hives and the old method of bee rearing was replaced by movable frame, standard bee hives and improved technology.

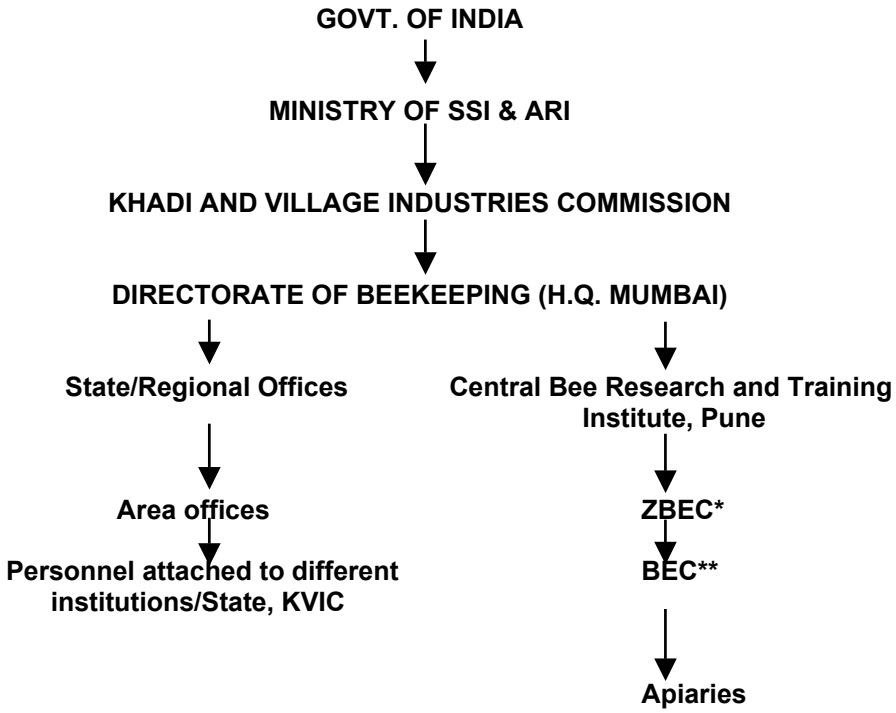
History of beekeeping in India

In earlier days, bee colonies were hunted for collection of honey by crude and destructive methods. Several efforts were made to improve the method of honey collection. It was around 1910, that Rev. Father Newton designed a small hive, suitable for the Indian honeybee *Apis cerana indica* in Kanyakumari and successfully maintained it in hives. This was followed by similar efforts in Karnataka, Maharashtra, Orissa, U.P., and Jammu and Kashmir etc. However these efforts were restricted to small pockets in different states of India. Mahatma Gandhi, realized the importance of beekeeping industry and included it in his rural development programme. After independence, the Government of India took a policy decision to revive various traditional industries and an All India Khadi an Village Industries Board was constituted to undertake this work. The task of development of beekeeping industry was also entrusted to this Board.

This Board was later reconstituted in 1956 as Khadi and Village Industries Commission (KVIC), a statutory body under the Ministry of Industry. It was only after the establishment of KVIC at the industry level, and Khadi and Village Industries Board in State level, the beekeeping Industry received serious attention for its development in a co-ordinated manner throughout the country.

Organisational set up

The liberal financing by the KVIC coupled with the technical support followed by the marketing umbrella support to the beekeepers has led to the present scale development of beekeeping industry. The organizational set up is the key to effective planning and implementation of beekeeping programmes and is as under:



**Zonal Beekeeping Extension Centre (ZBEC); **Beekeeping Extension Centres (BEC)*

Finance

The success of the industry depends upon viability of schemes. Finance is the backbone of any industry. The plan-wise financial assistance given by KVIC under beekeeping industry is given as below.

Plan period	Years	Finance availed (Rs. Lakhs)		
		Grant	Loan	Total
First	1953-56	7.94	1.41	9.35
Second	1956-61	48.60	6.88	55.28
Third	1961-66	82.41	12.39	94.80
Fourth	1966-73	35.72	6.95	42.67
Fifth	1973-78	85.04	25.44	110.48
Sixth	1978-84	99.29	160.21	259.50
Seventh	1984-90	215.47	263.02	478.49
Eighth	1990-95	134.13	378.96	513.09

The finance is provided to the eligible institutions, co-operatives and individuals for setting up of Modern Honey Processing Plants and apiary Units of different scales, in the form of loan and grant. The projects received from the implementing agencies are scrutinized at Directorates and banking division level. Once the project approved and sanctioned, loan in released in addition to 25% margin money which is adjusted as grant after successful completion of the Project.

The share component of the assistance is as under:

Implementing agencies share = 10%
Margin money from KVIC = 25%
Loan component = 65%

Under **Common Facility Center Scheme**, the Margin Money, Loan and beneficiary Component are 45%, 45% and 15% respectively.

For small beekeepers, the funds are provided as per pattern formed for 25/50 *Apis mellifera* and 30/60 *Apis cerana* colonies.

Marketing

The Directorate of beekeeping has taken up marketing of honey as departamental activity since 1970's to help the beekeepers co-operatives in disposing of stock of honey. There are departamental marketing depots at Ernakulam (Kerala), Pune (Maharashtra) and Delhi to take care the marketing aspect of south, central and north India respectively. These depots purchased, processed, graded and marketed the honey. A floor price for honey is fixed on season to season and place to place basis, considering the local factors. The beekeepers can supply their excess honey at the floor price to the depots. This protects both the producer and the consumers from exploitation by private traders. Besides this, there is a chain of marketing, sales outlets throughout the country owned by KVIC departamental such as Major Bhavans (Seventeen) and Institutions/Cooperatives (Fifteen thousands).

Some beekeepers co-operative societies as well as institutions are also marketing honey having established their own processing plants and Agmarking facilities. Besides this, the private limited such as, Dabar, Baidyanath, Charak, Zandu, etc. are also processing and marketing honey through their own marketing outlets.

Honey processing plant developed by KVIC and installed by institutions has moisture reduction system to reduce percentage of moisture in the honey, which can facilitate for export of honey.

Training

For development of beekeeping industry, training is an essential input. Various graded training courses such as Apiariat Training Course (9 months), Fieldman Training Course (3 months), Beekeepers Training Course (1 month), and specialized courses as Queen rearing, Pollination, Bee pathology, Comb foundation, etc. (7 days), Processing & handling of honey (7 days), Analysis of honey (7 days), Technology of honey and Bee product (7 days) were envolved and syllabi prepared. The Central Bee Research and Training Institute, KVIC, Pune, through its ZBEC and field centers established in different zones conduct training programmes. Apart from departamental units the prominent directed aided institutions of KVIC, state KVI Boards also conduct one month duration beekeeping courses for tribal/farmer beekeepers. To these trainees stipendia ets. Are paid by KVIC.

Progress during last decade

It is evident from the achievement that the rate of growth during last years has been quite substantial in respect of its coverage of villages, beekeepers, number of bee colonies and honey production. There was a decline in colonies and honey production in South India, due to thai sac brood disease. During the last 40 years, the development of modern beekeeping has shown rapid growth, as a result of integrated efforts of extension, marketing, research and training wings under one umbrella, the Directorate of Beekeeping of

KVIC. With the wide organizational spread of the programmes, the KVIC covered almost all the potential areas of the country under beekeeping development, including particularly the hill, border, tribal, and weaker section areas. There has been a hundred fold increase in the number of bee colonies and beekeepers and the average yield of honey increased from 2 kg to 10 kg per colony in *Apis cerana* and 15 to 30 kg in *Apis mellifera*.

India is the only developing country to achieve such spectacular growth in the industry, by using its own aid. This prompts several developing Asian and African countries to seek technical assistance from India in developing beekeeping in their countries. The Central Bee Research and Training Institute, the premier Institute in Asia of KVIC assumed a place in the international world through its contribution in bee research. 2nd International Conference on Apiculture in tropical countries was organized at New Delhi and Pune during 1980. The 8th AAA conference is also scheduled in Bangalore, India in 2002.

Progress of beekeeping during last 5 years

Year	Beekeepers (Lakh)	Bee colonies (Lakh)	Honey production (Lakh)	Sale value
1995-96	2.73	6.10	2743.04	3173.46
1996-97	2.56	7.96	3182.72	3807.82
1997-98	2.41	8.14	3257.80	3196.45
1998-99	2.41	8.21	3282.30	4253.62
1999-00	2.29	7.64	4584.22	4321.07

Special programmes

In the hour of natural calamity and fall in economy, KVIC had adopted special programmes. Bee disease in South India, Rural employment in north eastern states, marketing of honey and value added products and its export, extension of consultancy, manufacturing and supply of equipments etc. are given prior importance.

Rehabilitation of *Apis cerana* in South India

In the southern states of Kerala, Tamil Nadu, Karnataka etc., which were considered to be the honey basket of India, a dreaded viral disease “Thai sac brood disease” played havoc in 1991 by ravaging up to 95% of the industry, leaving beekeepers helpless and under tremendous misery.

KVIC under the monitoring of Beekeeping Directorate and Central Bee Research and Training Institute, prepared an action plan worth Rs. 2.00 crores (ten million) for revitalizing the industry in these states. It includes firstly, the identification, isolation and multiplication of resistant native Indian bee (*Apis cerana*) secondly the introduction of European bee *Apis mellifera* and thirdly, the training in *Apis mellifera* management.

North Eastern Council (NEC) and KVIC joint programme

KVIC in collaboration with North Eastern States has taken up a grand programme of apiculture development focusing on youth employment at a cost of 1.30 crores. A center has been established at Boko in Assam implementing multiplication and supply of colonies, training and small nursery followed by such centers in different states.

Cluster programme

The main objective of the cluster is to provide the facilities of processing, packaging, comb sheet foundation under single window system at a very reasonable cost at the doorsteps of beekeepers. Under rural development programme the Ministry has approved 50 cluster in the country in first phase, out of which 15 is meant for beekeeping.

UNDP-KVIC beekeeping programme

UNDP has sanctioned 3-crore project (1998-2002) for Beekeeping focusing on growth with equity, poverty alleviation, employment generation and the advancement of women. The strategy on beekeeping will help in protection of environment, maintaining the ecological balance. It aimed at creation of awareness about modern methods of beekeeping, generation of more employment and improve socio-economic condition of rural poor, tribal etc. The project will impart the modern skill to the beekeepers in the *Apis mellifera* management, processing of honey and product diversification. The beekeepers were given knowledge in latest technology and developments in the beekeeping. This will help them for the optimum utilization of natural resources, which will help in creation of employment opportunities in rural and tribal areas. The subprogramme would help in conducting training, workshop, seminars, conferences, etc., to solve the problems faced by the beekeeping industry. It envisages strong infrastructure development for research and training, more availability of equipments and bee colonies, marketing and product development awareness.

Zonal Beekeeping Extension Centers

Under the national programme, keeping in view the various strategic policy guidelines of KVIC vis-à-vis potentially of the beekeeping, and also to improve the working arrangement of various field offices and research centers, the KVIC has decided to restructure the field offices and accordingly six zonal beekeeping extension centers were established. The main objectives are 1) Extension programme through distribution of bee colonies and equipments, 2) Training to beekeepers and entrepreneurs in bee management, 3) Transfer of scientific knowledge to bee hunters and tribals etc., 4) Research and Development programme considering the local need. And 5) Linkage with state Government and other allied agencies for development of beekeeping.

Central Bee Research and Training Institute

The Khadi and Village Industries Commission (KVIC) recognized the importance of a strong research base in beekeeping development and KVIC established Central Bee Research and Training Institute at Pune in 1962. The institute has completed 40 years of its bee research and training work and is the ultimate authority on Beekeeping technology and research in Asia today.

The different scientific disciplines like Apiculture, Bee botany and Pollination, Bee chemistry, Entomology, Wild bees, Training of CBRTI undertook field oriented research programme. Zonal Beekeeping Extension centers and Branch Extension Centers with experimental apiaries are established in different agroclimatic conditions. The organizational set up of CBRTI is unique because all the related aspects of beekeeping are taken care of under one roof. The work done in the above departments was regularly published in national and international journals. About 300 scientific papers were published by the CBRTI. The institute also provided about 19 draft standards to the Bureau of Indian Standards to ally down Indian Standards for beekeeping equipment and bee products. CBRTI received national recognition by organizations like Bureau of Indian Standards, AGMARK and APEDA. The University of Poona accepted it a Centre for postgraduate studies. International Bee Research Association (IBRA) London, recognized as its branch library in Asia.

Ongoing projects

From 1975 onwards KVIC had approved beekeeping research projects dealing with improvement of the efficiency of bees, survey and exploitation of inaccessible areas and cultivated crops for beekeeping, bee pollination and its improvement in the crop production, bee chemistry and diversification of other bee products etc. These projects are continued till date by merging them in management, transfer of technology, bee chemistry and product diversification.

Conclusion

The beekeeping projects are all in tune with more traditional interpretations or in other words they have more relevance to economic and social progress in the country even during this high tech-wizardry. The rational use of resources both human and natural – in ways that take advantage of existing circumstances to progress one step at a time. They are involved in small-scale appropriate technologies that tapped meagre resources for their success. Moreover it covers a vast area big or small, urban or rural, local or national, but intended to solve specific problems, ranging from increasing crop productivity to higher honey production. In short, the research and efforts done by KVIC and CBRTI are **"seeds of development of beekeeping in the country."**