

# Apiculture (Beekeeping):

a promising livelihood option for the Sunderban people

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*Beekeeping can prove to be a sustainable livelihood activity for enhancing the income of farmers and may help in poverty alleviation. It does not require additional land for set up, is easy on maintenance and also helps in enhancing the yield of farmers by 30–40%. KRC of CIBA popularized the beekeeping technology in West Bengal as an income generating avenue.*

**Keywords:** Apiculture, Farming, Sunderban

**H**ONEY bees are important 'friends of farmers' that act as natural pollinators of agricultural crops and orchard, and enhance the quality and quantity of agricultural production besides providing employment, additional income and good nutritional supplementary food with medicinal properties. Beekeeping offers a potential livelihood option and is comparatively less demanding in terms of investment, labour and time (Table 1). Beekeeping could be a family activity and it does not require any extra land other than plants and trees from which the bees can collect nectar. Sunderban is bestowed with a dense natural forest cover where apiculture could be an additional income generating activity. Beekeeping has proved to be a good component of homestead farming in coastal parts of West Bengal and Bangladesh. Having agricultural activity as a main source of income for the farming community of the Sunderban, the huge potential of apiculture has not been fully realized by the rural households mainly due to the lack of

awareness on its role as pollinator as well as an additional income provider for a span of 8–9 months a year. The Kakdwip Research Centre of Central Institute of Brackishwater Aquaculture (KRC of CIBA) has introduced and popularized the beekeeping technology in South 24 Parganas district with the aegis of National Agricultural Innovation Project (NAIP) to create awareness among the rural households as an income generating avenue. The technology package included provision of sufficient hands on training to the identified beneficiary farmers and supplying necessary

quality inputs for apiculture.

Mr. Anup Nayak aged 37 is a progressive farmer with middle school education residing at Uttar Chandanpiri village, Namkhana block of south 24 Parganas district of West Bengal. He was the only income bearer for his family of four. Agriculture was his primary occupation with 0.5 ha land. He had a household pond with fish and shrimp polyculture for his domestic use and sale. This was also supported with a small piece of land wherein horticulture crops were grown for home consumption and sale. During south-west monsoon, the farmer remains busy with his paddy crop, however that alone could not provide him enough employment and income. He was progressive but had no access to any other avocation as an employment and income generating activity. He was identified as one of the beneficiaries of the NAIP project of KRC of CIBA programme on apiculture and was given the package including capacity building. The farmer was provided with two honey beehive boxes with the capacity to



Mr. Anup Nayak demonstrating the apiculture livelihood activity to his fellow farmers.



Honey bee, *Apis cerana indica* reared by the progressive farmer

### Issues and interventions

The KRC of CIBA had provided the awareness and access to beehives in small numbers to the farmers. Further, it had facilitated the bee keepers to form a cooperative to pool their honey and wax. However, the size of the bee keeping unit, availability of bee plantations and access to credit are the issues to be addressed. Hence, it is high time that the farmers of Sunderban are educated on the beneficial effects of bee keeping in the fields so that they may permit the bee keepers to keep their boxes in their lands. For that institutions like Department of Agriculture and Forestry should carry out demonstrations of beekeeping in a vegetable garden. As initiated by KRC of CIBA, cooperative mode is the best way to popularize apiculture and marketing. Hence, the concerned departments like Sunderban Development Board Department of Agriculture and forestry are to be involved in promoting honey cooperatives. Further, the government of West Bengal may include apiculture as one of the livelihood strengthening activities. Since beekeeping is a family based activity, women ought to be trained and involved in apiculture to make it as a movement.

### SUMMARY

Apiculture is an important complementary activity for rural households as it aids crop production, nutrition, enhanced income and natural resource management. It has the potential for poverty alleviation. This livelihood developmental activity addresses the issues of bee plantation, optimum unit size, cooperative action, capacity building and access to credit for procurement of raw materials. Policymakers should be made aware about the advantage of this subsidiary activity. At technical level, the importance of honey bee for agriculture production needs to be demonstrated across the Sunderban and other parts of the country.

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provide 7 kg honey per box annually. Honey bee *Apis cerana indica* is the species being reared though two other species (*A. dorsata* and *A. florea*) are available in rural India. European bee *A. mellifera* is also reared in some parts of the country but it is vulnerable to Indian tropical climate and several diseases. The beehives were placed in the vegetable garden around his homestead pond.

The vegetables grown were brinjal, tomato, cucurbits, bitter gourd, snake gourd, bottle gourd and lady's finger in addition to some fruit trees like mango and lime as bee plants.

As the subsequent years do not require any non-recurring expenditure, the income would be more from the second year. It is generally referred that the value of pollination service rendered by the bees is of 10 times more money value than the honey and wax. Further, it is proved that installation of honey bee boxes in the field crops and orchards at the time of flowering stage increases the yield up to 30–40%. The farmer felt that insufficient bee plants, poor management skills in handling bee boxes, timely killing of drones and use of pesticide in the surrounding paddy fields were the constraints. It is necessary to produce an adequate quantity of honey and wax to attract marketing channels. He had discussed with other honey producers supported by KRC of CIBA and formed an informal cooperative of 14 honey producers to pool the honey produced by them. The farmer opined that a beekeeping unit with 50 bee boxes could provide him 300–350 kg of honey in six months and fetch a monthly income of ₹10,000 and it would be a sustainable livelihood activity for any farming family.

**Table 1.** Economics of bee keeping (One unit = 2 Boxes)

<b>Non-recurring cost (₹)</b>	
Two beehive boxes	1800
Honey extractor	700
Smoker	120
Face veil	90
Knife	30
Queen excluder	170
Bee brush	50
<b>Total</b>	<b>2960</b>
<b>Recurring cost (₹)</b>	
Cost of sugar @2 kg/unit during lean period @₹35/kg	70
Depreciation @10%	296
Miscellaneous expenses/Unit	100
<b>Total</b>	<b>466</b>
<b>Income (₹)</b>	
Realization through honey yield @14 kg/unit/year and ₹200/kg	2800
Realization through bees wax @1 kg/unit/year and ₹100/kg	100
<b>Total</b>	<b>2900</b>
<b>Net income (₹)</b>	
C (Income)-B (Recurring cost)	2434