



Honey for generations:

Farmer FIRST Programme promoting beekeeping in Punjab

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Subsidiary enterprises offer an important alternative for increasing the income of small and marginal farmers practising traditional cropping system in Punjab. Beekeeping is one such subsidiary occupation which is suitable for small and marginal farmers, unemployed youth and farmwomen. For this purpose, farmers in the adopted village of Sangrur (Punjab) were apprised of the benefits of beekeeping and the process to start the enterprise under the Farmer FIRST Programme. The trainees were provided with hands-on practice in the management of honey bee colonies during different seasons, management of bee diseases and enemies, extraction of honey and purification of bee wax along with the inputs. As a result, 13 farmers adopted the beekeeping enterprise to generate additional income and most (87%) of the beekeepers were able to multiply their bee stock as well. A survey of the bee-keepers in 2021–22 revealed that farmers fetched the net returns of ₹4475 per box leading to the B:C ratio of 1.97:1. Some of the farmers further helped the other farmers to adopt the enterprise and guided them in managing the enterprise in efficient way.

Keywords: Beekeeping, Honey, Income, Subsidiary

THE Farmer FIRST Programme (FFP) of ICAR has been developed with farmer in a central role for research problem identification, prioritization and conduct of experiments and its management in farmers' conditions. The focus is on farmer's Farm, Innovations, Resources, Science and Technology (FIRST). Farmers tend to face problems related to production and natural resource management but they might not have found the solutions to overcome them. In such situations, Farmer FIRST is an opportunity for the researchers, extension professionals and farmers to work together and find appropriate ways through assessing different solutions.

In Punjab, Farmer FIRST Project was chosen to be implemented in the district Sangrur. The Project is operational in two villages in the Sangrur District of Punjab, i.e. Chatha Nanhera and Taranji Khera. Sangrur is one of those districts where the area under crop diversification has decreased. Crop patterns are dominated by wheat-paddy rotation, which occupies about 84% of cropped area of the selected villages. The Project activities started in selected villages Chatha Nanhera and Taranji Khera in February 2017. Based on the baseline survey, it was concluded that the farmers in these villages were mostly dependent on the Paddy-Wheat rotation for their livelihood and showed minimal interest in adopting subsidiary occupations. Further,

they were unaware of the prospects of the subsidiary occupations and unable to harness innovative techniques available in the region. The income from the crops reached a level from where it could be increased further. Subsidiary enterprises offer an important alternative for increasing the income of small and marginal farmers. However, these initiatives were lacking in the project area. So farmers in the selected villages needed to be educated and trained in these areas, entrepreneurship needed to be demonstrated and institutional convergence and networks had to be created to facilitate marketing and processing.

Popularization of beekeeping

Beekeeping is an important subsidiary occupation suitable for small and marginal farmers, unemployed youth and farmwomen. Beekeeping enterprise does not require intensive capital such as land, shed, sophisticated, costly equipment etc. At the same time, it can enhance farmers' income without putting any pressure on the land or water resources. For this purpose, farmers, both at the community and individual level, were apprised of the benefits of beekeeping and the process to start the enterprise. Several group meetings were conducted in the operational villages in which they were made aware

and motivated to start this new venture and add up to their farm income. The farmers were so motivated that instead of 10 farmers, as per project requirement, 15 farmers attended beekeeping training. Hands-on practical training in beekeeping was provided to the farmers from the selected two villages from October 11–17, 2017. The trainees were provided with hands-on practice in the management of honey bee colonies during different seasons, management of bee diseases and enemies, extraction of honey and purification of beeswax. The trained farmers were provided with a total of 70 honey bee colonies along with 70 bee hives with super chamber and queen excluder, feeders, bee veils, hive tools, comb foundations and sulphur etc. Every selected farmer got a unit of five bee boxes along with honey bees and other required equipment.

After the successful introduction of beekeeping in the area, the startup farmers were continuously monitored by the experts during the first year of adoption of this enterprise. They were provided with all technical know-how during every change in season. As a result, 13 out of 14 selected beekeepers not only successfully maintained their honey bee colonies but also produced honey. These beekeepers produced 20–60 kg honey worth ₹5000–15000 from their beekeeping unit of five colonies. Most (87%) of the beekeepers were able to multiply their bee stock as well. As far as the marketing of the honey is concerned Most of the farmers did direct marketing of honey and obtained prices as good as ₹300/kg of honey, however, some of them had also sold honey for ₹250/kg. Two farmers sold their honey through self-help groups at various platforms like kisan melas, exhibitions, SHG shop etc. With the help of the project team, they were linked to a self-help groups as well as consumers from nearby city of Ludhiana and the present situation is that they are not able to meet the demand for honey. In the first year of adopting enterprise, on an average farmers got 10–12 kg honey/box resulting in the net gain per from ₹6200–16800. But as the farmers got experienced in the honey production enterprise, the honey production and net returns increased. A survey in 2021–22 revealed that farmers produced 22.50 kg/box of honey on average and sold it at an average price of ₹300/kg, which resulted in gross returns of ₹6750 per box. By excluding the cost of production, i.e. ₹2275 per box, farmers fetched the net returns of ₹4475 per box leading to the B:C ratio of 1.97:1.

Triumph of beekeepers

Satisfied as beekeepers all the farmers want to increase the scale of production. Further farmers are provided with advanced training in honey processing. Some beekeepers are worth mentioning as they have done exceptionally well as far as the beekeeping as an enterprise is concerned. Nirbhai Singh (42) of village Chatha Nanhera, was engaged in wheat-paddy rotation for 15 years and was looking for generating additional income from subsidiary occupations. Later, he came to know about the prospects of beekeeping in Punjab. After meeting PAU scientists engaged in the Farmer

FIRST Project he adopted beekeeping as an additional source of income. After getting proper training in the operations, he got five boxes under the project and purchased 10 bee hive boxes worth ₹30,000 and opted for beekeeping as a subsidiary occupation. Within two years of starting the beekeeping, the number of boxes increased from 15 to 105 and the farmer generated an additional net income of ₹3–4 lakh annually.

The farmer is grateful to the Farmer FIRST Project operational in the village which had also provided the farmers with bee hive boxes and honey extractors for promoting Bee keeping in the Village. Nirbhai Singh is now an experienced beekeeper, who utilises the FFP-funded equipment and knowledge by extending his support to other smallholder beekeepers in the area. He is acting as the opinion leader and guide for other smallholder beekeepers and provide guidance through personal visits, phone calls or social media application. He is helping other farmers in the migration of bee-box to suitable places from time to time.

Considering his devotion, hard work and passion for the business, FFP helped his project for improving bee farm infrastructure with an increased number of beehives and equipment for honey extracting and processing. Nirbhai Singh told this with pride that he was forever grateful to the FFP for the help and motivation provided to him for starting and further scaling up of beekeeping enterprise. Now he is also inspiring farmers of the village to go for subsidiary occupations and generate additional income. He is



Hands-on training of farmers



A farmer with bee-hive and honey boxes at his farm



Exhibition of Honey by Nirbhay Singh at Kisan Mela



A farmer with bee frames and boxes to upscale the enterprise

also providing training to the youth of his own and neighbouring villages who are interested in opting for beekeeping as a subsidiary occupation and want to generate additional income along with traditional farming. He is currently developing a marketing plan to further upscale his enterprise. Several other farmers in the village are actively engaged in honey production among whom Boota Singh (25) is a budding beekeeper who has started honey production with 5 boxes and now has 20 boxes and has plans for expansion in the coming years. Ranjit Singh (42) and Naib Singh (50) have been doing marketing through self-help group approach by producing honey for the village and local market needs. Naib Singh has also utilized the market potential by direct marketing of honey at a retail outlet in the adjacent town.

SUMMARY

Close interaction and encouragement along with skill development can do the miracles. It is always difficult to take the first step because of state of mind is in inertia or resistance due to various socio-economic factors. Farmer FIRST Programme efforts accelerated the knowledge,

capabilities, innovativeness, risk-taking capacity and gave the motivation to start a new venture. Under the farmer FIRST Programme, PAU scientist trained the farmers in the adopted village of Sangrur (Punjab) regarding beekeeping and continuously made the efforts to enhance the adoption. As a result, a number of farmers are cultivating the sweet harvest of the enterprise and are getting handsome additional income from the enterprise without putting the pressure on existing resources. Farmers have produced about 22.50 kg/box of honey on average and sold it at an average price of ₹300/kg, which resulted in gross returns of ₹6750 per box. Thus, on an average, farmers fetched the net returns of ₹4475 per box. The progressive farmers among these are getting about ₹3–4 lakh income from the beekeeping enterprise. So, it can be summarized that FFP has created a positive impact on the livelihood of the farmers by successful introduction of honey bee enterprise.

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- ICAR-Enterprises resource planning (ERP)System to this manage the human resource in information of the council including pay roll, finance and budgeting.
- KVK Knowledge Network Portal (<http://kvk.icar.gov.in>) to share basic information and facilities of KVK with contingency plans, demonstration schedule, and advisories.
- Management System for Post-Graduate Education (MSPGE) enabling academic and e-learning modules while also being a repository of academic records.
- E-Samvad, an online interface of the Council to answer citizens queries.
- Krishi –A knowledge repository portal of digital information pertaining to research experiments, outputs, publications, etc.
- E-Krishi Manch, a dedicated portal for farmer-scientist interaction.