

Beekeeping Technologies Package Promotion Through Farmers Training Center in Woliso District, South West Shoa Zone

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Abstract

Original Research Article

This research activity was conducted with the main objectives to promote improved beekeeping technologies and management using Farmers Training Center. As to the method, selection of Obbi FTC and 40 beekeepers were selected for the promotion. Established apiary in the FTC used as centers of learning and technologies promotion. Farmers, development agents and experts trained and experimental colonies established. Honeybee colony follow up and technology promotion activities undertaken in partnership with beekeepers, development agents and experts. Box hive and management practices, transitional hive, honeybee forage, ant protection, honey and beeswax processing were the technologies promoted in the FTC. On average of 12.4kg pure honey per hive per harvest from box hive and 9.7kg crude honey per hive per harvest from transitional bar top hive produced during the study period. Plantation of more than 230 multipurpose tree seedlings and two types of herbaceous honeybee forages sown and managed in the compound during the technology promotion and model FTC apiary development. Field day arranged and 121 stakeholders participated on the field day and mass media from the Woreda invited on the field day and broadcasted the program and posted the event on Facebook account of Woliso Woreda communication office. FTC can be used as a center of learning and technology village if and only if stakeholders can cooperate to plan and implement technology demonstration and dissemination activities together. Therefore, it is suggested to further pre scale up the approach in other FTCs having similar resource, management and strong stakeholder's linkage.

Keywords: Beekeeping, FTC, promotion, technology.

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INTRODUCTION

Agriculture remains the cornerstone of Ethiopia's development and an enduring foundation for our national prosperity and a critical engine of inclusive growth. With 64% of our workforce employed in the sector, contributing 32% to GDP and most export earnings, agriculture is not only the mainstay of livelihoods but also the platform for ensuring food and nutrition security, resilience, and equitable transformation [3].

To improve this sector, agricultural extension should deliver services that can meet specific needs in diverse agro-ecology and socio-economic contexts to sustainably increase productivity, to stimulate diversification into high value products, to shift into value addition, and to enhance smallholder competitiveness in both domestic and export markets [4].

Since 2004, about 8, 500 Farmers Training Centers (FTCs) have been built established by

government with substantial contributions from rural communities so far and about 45,000 Development Agents (DAs) are engaged as service providers in these FTCs for the public extension [4]. While FTCs and the assignment of thousands of graduates as staff in these centers represent huge resource and opportunity to move forward, making the FTCs functional, responsive, effective and dynamic remains a real challenge [4]. According to [2], about 2,500 (30%) out of 8, 500 FTCs were somewhat functional. Many of these FTCs were not functioning as intended knowledge centers. Weak linkages between research, extension, cooperatives, and private sector, lack of operational budgets, equipment, water access, training materials, and inputs for demonstrations problems made the FTCs nonfunctional or underutilized [1]. Therefore, the main objective of this activity was to promote dissemination of beekeeping technologies through FTC by capacitating the stakeholders and develop model FTC in the study area.

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OBJECTIVES

- To build the capacity of the beekeepers on modern beekeeping technologies
- To strengthen linkage among stakeholders
- To develop model apiary to be used as learning center and technical exchange visits for surrounding communities

METHODOLOGY

FTC and Farmers Selection

The promotion and dissemination of modern beekeeping technologies package conducted in Obbi Kebele FTC, Woliso Woreda, Oromia Region. Selection of Obbi Kebele FTC is purposive considering accessibility of the FTC and farm land for plantation of bee forage and seedlings. Forty beekeepers selected, 2 Farmers Research Extension Groups (FREGs) established and participated in the dissemination and promotion of modern beekeeping technologies in and around the FTCs.

Technology Promotion and Dissemination Methods

Before starting implementation, memorandum of understanding signed with Woliso Woreda bureau of agriculture. Practical training for beekeepers, DAs and experts given two rounds during the technology promotion period. Obbi Kebele FTC used as center for technology promotion and dissemination. Hive stand and shade construction, experimental colony set up, land preparation and sowing bee forages, planting

multipurpose trees conducted after initial training on the technologies. Regular follow up of established honeybee colonies every season conducted with FREGs members, DAs and experts. Poster, field day and mass media coverage were the extension methods used for technology promotion and dissemination.

Method of Data Collection

Qualitative and quantitative data types from primary and secondary data sources, collected during the study period. To collect primary data, data collection sheet, personal observation and participant interview methods used. Secondary data collected from research reports and internet search.

Method of Data Analysis

Quantitative data analyzed descriptively by using statistical techniques such as frequency counts and arithmetic means. After analysis of the data obtained, the data presented using tables for easy understanding and representation. The qualitative data analyzed through explanation of idea, opinion and concept explanation method

RESULTS AND DISCUSSIONS

Capacity Building

Capacity of the beekeepers, DAs and experts on different modern beekeeping technologies built through two rounds theoretical and practical trainings conducted at their respective village administration.

Table 1: Number of Beekeepers, Development Agents and Experts participated on training

No	Category	Number of trainee		
		Male	Female	Total
1	Beekeeper	34	6	40
2.	Development Agent	4	0	4
3.	Expert	6	0	6

Source: Own data, 2024-2025

Besides the training, FREG members were participated on regular honeybee follow up activities seasonally, field visit and experience sharing among

members conducted during both active and dearth period.



Photos on theoretical and practical training at Obbi Kebele, 2025



Photos on field visit and experience sharing in the FTC, 2025

Model Apiary Development

Colony establishment and follow up

For the promotion process, three hive stands for 15 honeybee colonies constructed, and already constructed hive shade in the FTC compounded strengthened and maintained to accommodate 15 honeybee colonies. Fifteen honeybee colonies (10 in

modern box hive and 5 in transitional hive) transferred and experimental colony established under the shades in the FTC compound. Routine honeybee follow up activities such as inspection, adding hive volume, harvesting, reducing hive volume and feeding of the honey bee colonies every season undertaken seasonally with these FREG members during the study period.



Photos on established honeybee colonies in the FTC, 2024

Honeybee forages

To demonstrate honeybee forages as improved beekeeping technology package and improve honeybee forages availability in the FTC compound different herbaceous honeybee forages sown and multipurpose tree seedlings planted during the study period.

For two varieties of herbaceous honeybee forages named phacelia and melilotus alb four plots of each 1.5meter X 3meter long prepared, seeds sown, transplanted and managed till flowering in the FTC compound.

Herbaceous honeybee forages



Photos on herbaceous honeybee forages in the FTC, 2024

Multipurpose tree seedlings

Nine varieties of multipurpose tree seedlings planted and managed in the FTC compound to demonstrate and improve honeybee forage availability.

Table 2: multipurpose tree seedlings planted in the FTC

No	Seedling name	Quantity	No	Seedling name	Quantity
1	Coffee	20	6	Tree lucerne	20
2	apple	10	7	Bottle brush	30
3	Avocado	10	8	Daannisaa	10
4	Jacaranda	10	9	Koshimmii	100
5	Tebeb	20	Total		230

Source: Own data, 2025



Photos on transportation, plantation and management of multipurpose seedlings, 2025

Honey Yield Harvested

Honey from hive types, box and transitional hives, harvested in June 2025 harvesting season. On average, 12.4 kg/hive/harvest pure hone harvested from single box hive and on average of 9.7 kg/hive/harvest

crude hone harvested from single transitional hive during this harvesting season. Honey from box hives extracted and filled in honey jars for the promotion and crude honey from transitional hives used sliced and distributed for the field day attendants.



Photos on honey harvested and promoted on field day July, 2025

Field Day And Social Media Coverage

Using appropriate extension methods are very important in promotion and dissemination of improve beekeeping technologies and management practices for the wider none addressed beekeepers.

Field day

Awareness on improve beekeeping technologies and management practices created for 121 stakeholders through mass mobilization by arranging field day conducted on July 3/2017. On this field day, different category of stakeholders participated, share experience, visit works done so far in the FTC, plant and manage multipurpose tree seedlings and attend FTC handover session.

Table 3: Field day participants

No	Category	Number of participants		
		Male	Female	Total
1	Beekeepers	82	14	96
2	DAs	4	2	6
3	SMS	7	0	7
4	Obbi Kebele management	5	0	5
5	Others	5	2	7
Total participants				121

Source: Own data, 2025



Photos on field day July, 2025, Woliso

Mass media coverage

Journalists invited from Woliso Woreda communication office to broadcast the field day program and promote best experiences in the FTC. Accordingly,

the invited communication team broadcasted the program and posted on Facebook account of Woliso Woreda communication office.



Screen shoots photos of the field day from Woreda communication office Facebook account

CONCLUSION AND RECOMMENDATION

In conclusion, FTC can be used as a center of learning and technology village if and only if stakeholders can cooperate to plan and implement technology demonstration and dissemination activities together. Therefore, it is suggested to further pre scale up the approach in other FTCs having similar resource, management and strong stakeholder's linkage.

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