Transformation of smallholder subsistent beekeeping: evidence from Ethiopia

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Outline

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Introduction (1)

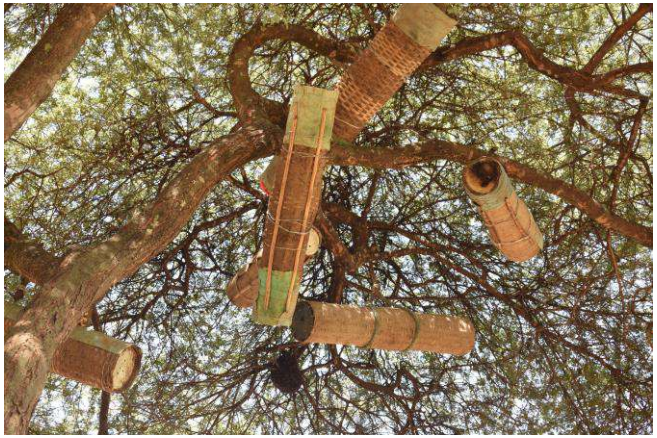
Ethiopia's estimated national production potential is:

- **500,000** tons of honey and
- **50, 000** tons beeswax.

Current production is only about 10% of the potential:

- **47,706** tons of honey, and
- **5,542** tons of beeswax.

The country has got around 2 million beekeeping farmers, and about 96% which are still using traditional hives despite years of promotion of modern hives.



Introduction (2)

Table 1: Number of beehives, production potential and average frequency of harvesting honey per year in Ethiopia

All types of Beehives	In number	Production in kilogram	Average frequency of harvests per year
Traditional beehives (forest and backyard)	5,902,624	42,927,921	1.64
Intermediate/transitional beehives	80,832	2,036, 969	1.94
Modern beehives	205,873	2,741,211	1.58
Total	6,189,329	47,706, 101	1.64

Source : Kenesa Teferi 2018. Status of Beekeeping in Ethiopia- A Review. Dairy and Vet Sci J. 8(4): 555743 p:03

- Most smallholder beekeepers maintain a few traditional hives around their backyards with very minimum management input.
- Pollen, propolis and bee venom are not yet harvested at a marketable volume, and sometimes not yet recognized.

Introduction (3)

- International Centre of Insect Physiology and Ecology *(icipe)* presents evidence from a completed pilot project that targeted delivery of a package of improved beekeeping practices to transform smallholder beekeeping from subsistence to commercial orientation to enhance contributions to household livelihoods.

Objectives and expected outcomes

Objective of the project:

- To improve the livelihood of poor rural community members through scaling up of beekeeping technologies.
- To conserve biodiversity through maintaining bee colonies and bee forage plant species.

Expected outcomes:

- Enhanced cash income to the target beekeepers.
- Unemployed and disadvantaged youth and women secure employment opportunities in their localities.
- Enhanced commercialization of beekeeping as a business in rural areas.
- Demonstrated practices in the set up and management of organically certified honey and beeswax production.

Key activities:

- To provide series of technical skills development trainings
- To distribute beekeeping starter kit
- To establish local honey aggregation and processing facility
- To demonstrate packaging of table honey at a marketplace
- To organize beneficiary youth and women into beekeepers' cooperatives
- To increase bee floral resources
- To set up organic certification protocol on the production and processing of honey and beeswax.

Methods

- Survey was conducted at the end of the project.
- Individual interviews conducted on 192 beekeepers from 10 beekeepers' cooperatives.
- Purposive random sampling method was used to select respondents from among 900 direct project beneficiaries.
- Descriptive statistics was used to analyse the data.

Results (1)


Group apiary

Individual apiary

- 83% of the 192 respondents continued following improved beekeeping practices in individual and group apiaries.
- 72% of them have established improved beekeeping practices in own backyard.
- 11% of them involved only in group apiaries.

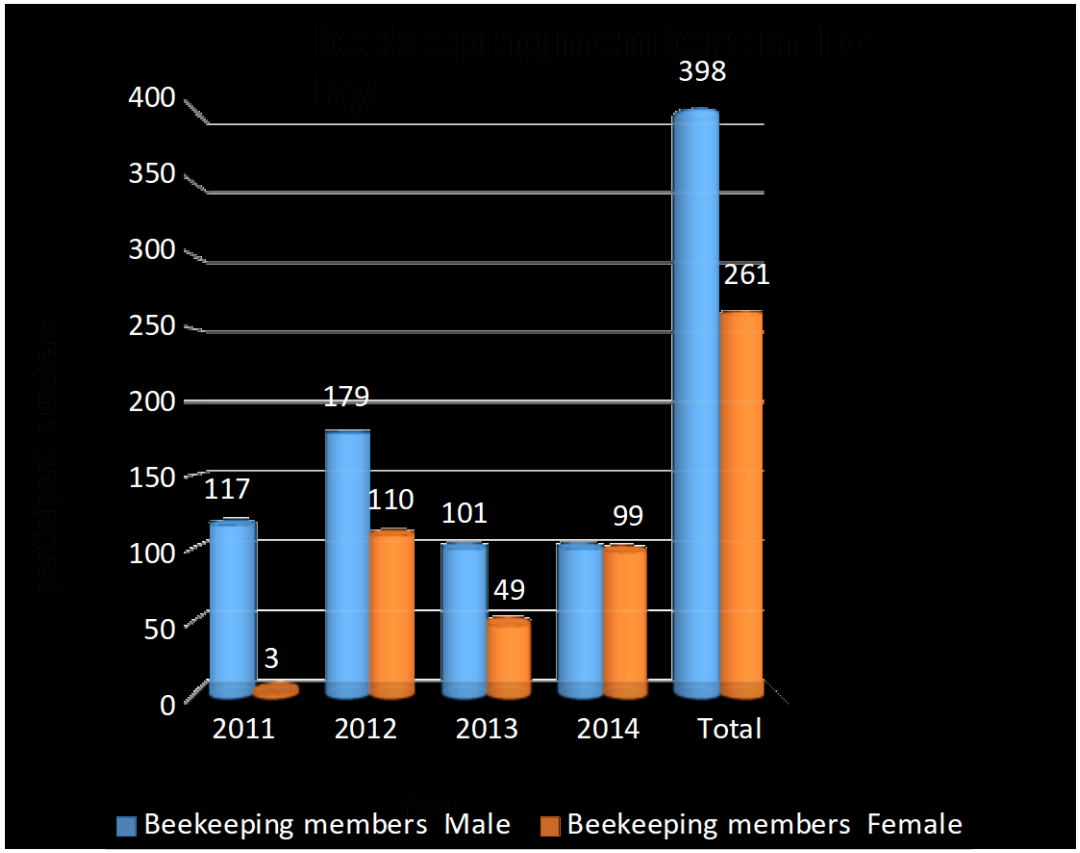
Results (2)

- All the respondents have attended basic and refreshment trainings in improved beekeeping practices.
- Some of them have transferred their skills and knowledge to their family members and friends.

Results (3)

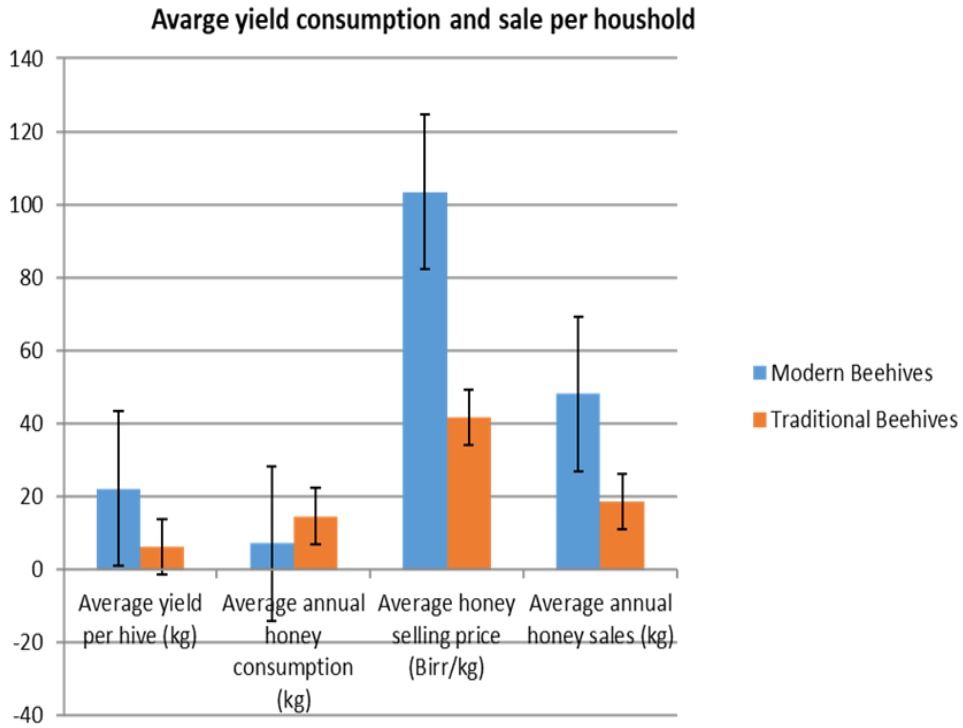
Some of the experienced beekeepers have trained other farmers and youth in hive inspection and queen bee rearing.

Results (4)



- More youth and women got enrolled in improved beekeeping.
- Beekeepers' Cooperatives increased their members.
- Participation of women increased despite cultural challenges.

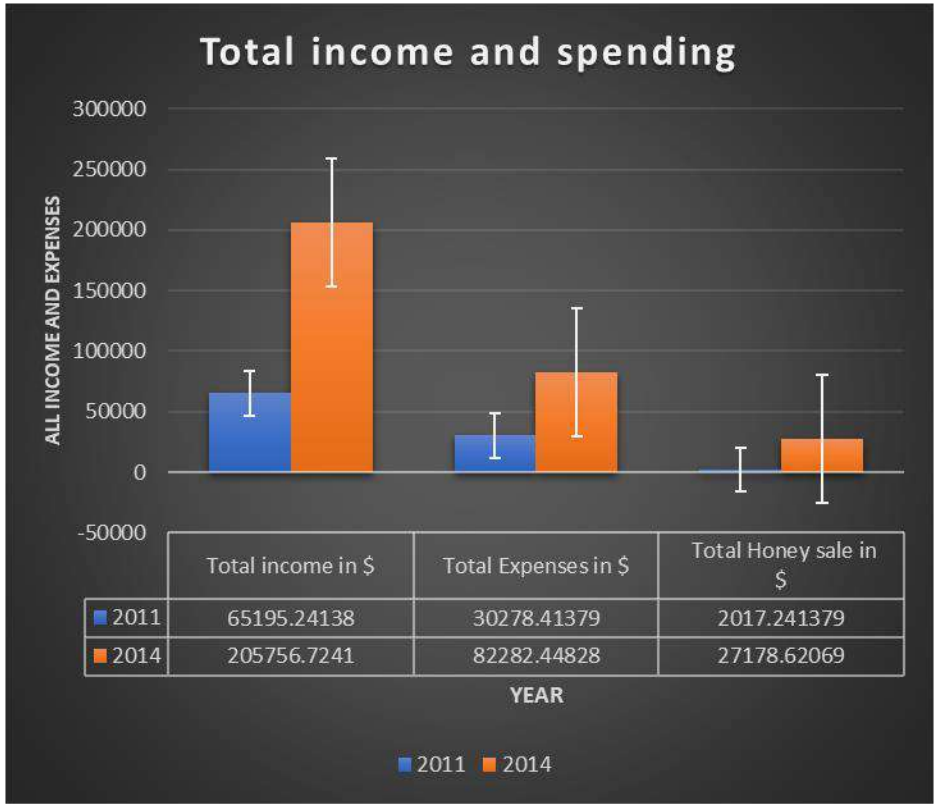
Results (5)



Economic analysis results indicated:

- income of the participating beekeepers who adopted improved beekeeping practices increased significantly.
- Consumption of honey at the household level increased .
- Average income from honey per hive per year increased by six-fold from **$25.7 to $166 .**

Results (6)



- The average household spending for all expense categories has tripped over four years period (from US$30,278 to US$82,282 from 2011 to 2014, respectively.
- Honey sale increased from US$2,017 to US$27,178 over the four years 2011 to 2014 respectively for all beneficiaries.

Results (7)

The market price of processed and packed table honey harvested from frame hives is much higher than that of crude honey harvested from traditional hives.

Crude honey harvested from traditional hives sold in open village market.

Honey harvested from frame hives processed, packed labelled and sold in marketplace.

Results (8)

Further successes of this pilot project:

- Project established a honey collection, processing and packaging unit in the project site.
- The project used this processing unit as a training and demonstration facility as well as a marketplace.
- The project established organic certification for the honey and beeswax production and processing process through KOAN (Kenya organic agriculture network).
- This project became the model for design and implementation of a much larger project to support 10,000 youth and women beekeepers.

Organically certified packed table honey

Bottled honey with organic sticker in honey the market place .

Scaling up technology package

Project scaled up to 10 000 beekeepers

Conclusions

- Project successfully achieved its objectives.
- 83% of the target beneficiaries adopted improved beekeeping practices.
- Average honey harvest per hive increased from 15 kg to increase 28.4 kg.
- Household income from beekeeping more than doubled for project participants.
- Household income and expenditure increased significantly.
- Organic certification secured.
- Estimated annual honey production volume of the district increased by at least two-fold.
- Lessons from this project used to design and implement a much larger project in another Region of the country and further upscaling work is underway.

Thank you

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