Beekeeping in Ethiopia: Country Situation Paper
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By:
Demisew Wakjira Akessa
Honey & Silk Directorate a/Director
Ministry of Livestock and Fisheries, Ethiopia
Outlines

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Country profile

- Ethiopia occupies the major part of the Horn of Africa.
- The country covers approximately 1.12 million KM²
- It shares boundary with Eritrea, Sudan, South Sudan, Kenya, Somalia and Djibouti.
- It is located between 3° and 15 ° N latitudes and 33 ° and 48 ° E longitudes.
- The altitude ranges from the depressions 126 m below sea level to 4620 m a.s.l.
- Diverse agro-ecology (18 major and 49 sub-agro ecology)
Country profile

- Demographics of Ethiopia
  - Current total population: 100 million
  - Age structure (0-14 years: 43.94%, 15-64 years: **53.18%** and 65 years and over: 2.88%)

- Economy dependent on agriculture which accounts 43% of the GDP
  - 90% of export commodity, 70% of industrial raw materials and 85% of employment covered by Agriculture.
  - Of this, livestock sector contributions accounts for about 15% of the GDP.
Background

• Beekeeping is a long standing practices in Ethiopia and it accounts 1.3% of agricultural GDP.

• Currently one out of ten rural households keep honeybees and the activity makes a substantial contribution to rural income generation.

• Ethiopia is the leading honey producer in Africa and one of the top ten worldwide.
Background....

- In the last 15 years (2001-2015), Ethiopia’s honey production increases from 28,000 tons to 54,000 tons
- Beekeeping industry is flourishing in the country
- Participation of private operators, cooperatives and unions reached more than 30 by this time.
- Low level of pesticide applications, which could create opportunity for organic beekeeping development.
Apiculture potential of the country

• 6500 melliferrous plant species of which more 1500 identified as bee forage

• There are 58 National Forest Priority Areas in the Country that are suitable for beekeeping

• Of the total land mass of the country about 71% is suitable for fruit and other crops growth which serve as source forage for the bees
Apiculture potential…

• Regional states like SNNP, Gambella, Benshangul Gumz, Amhara, Tigry and Oromia have big apicultural potential.

• Existences of about 10 million honeybee colony.
Government efforts towards Sector development

- Registration and control of pesticides, special Decree No. 20/1990 to lay a scheme of registration and control of hazardous chemicals to life and products of honeybees

- Apiculture Resources Development and Protection Proclamation, No. 660/2009 for development and protection of apiculture resources

- Establishment of the competent authority MoLF to ensure apiculture development by Strengthening extension delivery system
Government efforts towards Sector development.....

- Establishment of Ethiopian Apiculture Board (EAB) as an Apex body to coordinate professional Associations and other stockholders towards the implementation of policies and development activities.

- Encouraging and supporting of Associations like Ethiopian Society of Apiculture Science (ESAS) and Ethiopian Honey and Beeswax Producers and Exporters Association (EHBPEA).

- Facilitating conditions for existence of synergic public and private stakeholders (SNV, ACDI/VOCA, FC, MCF etc).
Government efforts towards Sector development ......

- Ethiopia has developed honey and beeswax Standards (ES 1202 and ES 1203), which comply with ISO and CODEX Standards


- Since 2009 Ethiopia has investing a large amount of money to collect samples of honey yearly and send to laboratories recognized by EU and submit the report of analysis.
Involvement of development partners

• Netherlands Development Organization through different projects supporting development and improvement of processing, and marketing of honey and beeswax

• ICIPE and AU-IBAR in collaboration with EU, through a project called “African reference laboratory with satellite stations for the management of pollinator bee diseases and pests for food security” are supporting beekeeping activities in Ethiopia.
Involvement of development partners..

• The contribution of the project is enormous with regards to research capacity building and job creation for youth and women in Tigray, Oromia and SNNPR.

• Beekeepers are also getting material and technical support from Non Governmental Organization like ACDI/VOCA, CDA, GIZ, Care International, World Vision, Plan International etc.

• Technical support like skill development trainings and material support from private honey processing companies to mention.
Production system and productivity

Three types of beekeeping practices

- **Traditional (90%)**
  - With the yield ranges from 5 to 9 kg honey/colony (Av. 5.5 kg/year)
  - Yield from this type of practice of BK accounts
    - ✔️ 64% (34,650 tones) of honey and
    - ✔️ 85.8% (4,290 tones) of beeswax

- **Transitional (3%)**
  - Productivity ranges from 9 to 40 kg/year crude honey/colony (Av. 15 kg/year)
  - This accounts
    - ✔️ 6% (3,150 tones) of honey and
    - ✔️ 7.7% (387 tones) of beeswax
Production system and productivity...

- Box (frame)hive (7%)
  - Present national average 33kg/hive/annum (20-80 kg/year)
  - Using improved techniques, one can harvest 50-80kg/hive/yr

✓ 30% (16,170 tones) of honey and
✓ 6.5% (323 tones) of beeswax.

➢ Total honey and beeswax production are respectively 53,970 and 5000 tons
Marketing of honey and beeswax

• Around 95% of the honey produced goes to domestic market with about 50% of the honey is used for making honey wine (locally called Tej) at the moment.

• 30% of the honey produce annually is illegally smuggled across different corners of the country.

• The remaining is sold as table honey and also for different purposes.

• Local price of honey is high in towns (range from USD 6 to 10 per kg) and relatively low in remote rural areas (range from USD 1.4 to 5 per kg).
Honey Marketing…..

Export market

• Despite potential and opportunity to sell honey in EU and other markets, Ethiopia exports very small quantity legally to the international honey market.

• Only 0.06% sell (of 1.54 mil ton) while its production accounts 35% of the international market.

• Buyers of Ethiopia’s honey include: Sudan, Norway, S/Arabia, UK, Yemen, Japan, USA and Others.
Marketing of beeswax

• Similarly, only a small fraction of produced beeswax is exported to the global market and majority is consumed locally.
• The price of 1kg of beeswax is in the range of USD 6.5 (2011) to 10.9 (2016) under local condition.
• External market Price for beeswax per kg ranges from USD 4.9 (2011) to 9.2 (2016)
• Main buyers of beeswax from Ethiopia: Japan, USA, Germany, United Kingdom, Italy and Sudan
### Honey and Beeswax exports
For the period 2011-2016 (tons)

<table>
<thead>
<tr>
<th>Type of Product</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Total in the last six years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honey (ton)</td>
<td>520.3</td>
<td>876.7</td>
<td>839.6</td>
<td>742.4</td>
<td>681.2</td>
<td>592.6</td>
<td>4252.8</td>
</tr>
<tr>
<td>Beeswax (ton)</td>
<td>380.5</td>
<td>367.1</td>
<td>385.0</td>
<td>334.7</td>
<td>520.4</td>
<td>267.7</td>
<td>2255.4</td>
</tr>
</tbody>
</table>
Generating and innovating technologies

• The government of Ethiopia is investing a lot on research and development

• A total of 24 Research centers directly working towards generation of apicultural technologies and information since 2006

• Only HBRC was doing research on apiculture as full-fledged Research Centre since 2001
Some major achievements in terms of availing technologies

**Intermediate (Top bar) hive**

- Alternative hive made from locally available materials
- 8X cheaper than framed box hive
- Honey production 15-20kg/hive more than 3X of Traditional hive (5-6kg/hive), up to 40kg/year
- Available (Beekeepers can construct by themselves)

- It is environmentally friendly
- It can serve as job opportunities to local carpenters and organized youths
Alternative top bar hive from locally available materials

Price: Very cheap (6 to 8X less than Box hive)

Honey production 40-45kg/hive (8X of Traditional hive)

Available (Beekeepers can construct by themselves)

Also can serve as job opportunities to local carpenters and organized youths
Alternative affordable box hive from non-timber materials

- The production cost of the hive is 3x cheaper than timber box hives
- Since the material is non-timber it is environmentally friendly
- The bees are well adapting in such non-timber hives
- The honey yield is equivalent to timber made box hive
- The resource readily available (1 million ha)
- It can serve as job opportunities to local carpenters and organized youths
Crude beeswax pressing technologies

- Locally large volume of beeswax can be produced annually,

However, more than 40% of the beeswax is wasted annually due to lack of suitable beeswax processing devices

To solve this problem, small scale beeswax pressing device was developed and tested

- **Advantages of the technology**
- This device is 100% efficient extraction method
- The device can be used by:
  - small scale honey and beeswax processors,
  - Cooperatives,
  - Unions and others
Identification of mono floral honeys

- more than 16 mono-floral honeys and various multifloral honeys identified

- Syzygium guineense (Walleensu) honey
- Croton macrosachus (Bakkaniisa) honey
- Vernonia (Eebicha) honey
- Becuim glandiflorum (Tebeb) honey
- Schefflera abyssinica (Geteme) honey
Role of honeybees as crop pollinators

- Onion pollination increases yield by 92%
- Noug pollination increased yield by 43%
- Pollination of *Vicia faba* (baaqelaa) resulted in about 12% yield increment
- Pollination of *Citrus sinensis* (orange) resulted in higher quality fruits (juice, seeds)
Honeybee diseases and pests

Three diseases
- Two Protozoan honeybee diseases (Nosema and Amoeba)
- One Fungal honeybee brood disease (Chalk brood)

• For these diseases control methods identified

16 honeybee enemies and pests identified and documented
• Of these, 6 (Ants, Wax moth, Honey badger, Small hive beetle and Varroa Mite) are found to be economically important.
• For pests with significant economic importance, control methods developed or under process of developing.
Challenges/Limitations in the sector

- Inadequate trained personnel to solve problems related to skill and technology
- Limited bee products (Honey and beeswax) and little effort on production of products other hive products
- Very poor technology multiplication and uptake (extension system, structure, etc) only about 10% of beekeeping is using improved technologies
- Prohibitive cost for residue monitoring analysis
Challenges……..

• Limited access to financial services for individual beekeepers, cooperatives, unions and others

• Illicit cross border trades
  ➢ Large volume of honey and beeswax is illegally smuggled through different corners of the country.

• Limited promotional activities for hive products in both local and export markets.

• Limited/little market information and assessment for both local and export market dynamics
Future Plans/directions

• Focus on beekeepers skill, knowledge and capacity
dvt
• Create enabling environment for processors and exports
• Partnership with development partners for market and value
chain research and development
• Enhancing the local consumption of honey through branding
Tej as a national drink
• Design ways to collect and disseminate business information
timely for beekeepers, processors, traders etc.
Future plans......

- Establish strong research capacity and capability to improve efficiency in generating suitable technologies
- Increase ability of smallholder producers to organise themselves into effective commercial entities and encourage their participation in local and global trade
- Facilitate access to financial services for those operating in the industry
- Establish accredited laboratory for residue monitoring analysis and ensure traceability
Thank you so much!