

A stylized, light-colored illustration of a plant with several leaves and a cluster of small, round fruits or buds, positioned on the left side of the slide against a dark brown background.

# **MEASURING RURAL BEEKEEPERS BENEFITS GOES BEYOND INCOME, INPUTS AND POVERTY LINE**

Presenter

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# BACKGROUND TO INTRODUCTION

- In Tanzania, beekeeping is considered as livelihoods and income generating activity to generate income but also conserving natural resources.
- Annual production of honey does not exceed 32,000 MT per annum and beeswax 625MT.
- Beekeeping is practiced in almost all rural areas of Tanzania, but important beekeeping regions are in miombo woodlands in particular southern highlands, central and northern zones.
- The market of honey is fragmented and dominated with traditional retail markets that characterized of individual outlets and middlemen

# JUSTIFICATION

- Beekeepers still maintain their cultures that allow them to exchange commodities not as butter system but what is known as shade price
- Integrated rural development approaches have been concentrated on health, education and sanitation projects and food security
- Internationally accepted poverty line - Purchasing power parity (PPP) terms, to one U.S. dollar per person per day,
- This computation is difficulty to apply for society that means of living is not tied in cash purchasing but direct use and exchange of farm products with other necessities in form of shade prices.
- The products from beekeeping (honey and beeswax) are complementary sources of income, school fees and emergency for the family.

# Objectives

- The main objective : To measure benefits from rural beekeepers in relation to poverty and livelihoods in Tanzania

The specific objectives were

- To determine inputs, income and outcomes of rural beekeepers in Tanzania
- To examine vulnerability context and livelihood assets of rural beekeepers in Tanzania

# Study Area

- Tanzania is located in Eastern Africa between longitude 29° and 41° East, Latitude 1° and 12° South.
- Total land surface is 948,000 square kilometres
- Forest areas covering 48.8 million hectares.
- Information of the study was collected from Iringa, Dar es Salaam, Kigoma, Tabora, Kilimanjaro, Dodoma, Singida, Manyara and Arusha regions.
- Beekeepers in Kigosi Moyowosi Game Reserve, Ugalla Game Reserve, Kiziga Rungwa Game Reserve and Forest Reserves in Kigoma, Tabora, Katavi and Shinyanga Regions were useful respondents

# Methods

- Field observation and interview discussion.
- Respondents were beekeepers and villagers around beekeeping areas and adjacent townships.
- Hard stories from beekeepers were recorded and analysed using qualitative methods.

# Results

- Beekeepers and adjacent communities have been benefiting with beekeeping and bee products more than what is recorded in terms of cash income.
- Health of the family was also an indicator for success in beekeeping

# Percentage of Uses of Honey and Levels

Uses of Honey  Levels	Direct as food	Making beer	Dowry and rituals purposes	Sale to Buyers	Social interaction (free to neighbouring)
At Beekeepers Gate (in Protected areas and apiary sites)	3.57	13.29	1.71	71.43	10.00
At villages and adjacent townships	10.34	20.69	6.90	44.83	17.24
At Selected cultures in Dodoma, Manyara and Arusha	12.50	6.50	24.20	20.94	35.86



# Inputs, Outputs and Outcome of Rural Beekeepers

## *Beekeepers who carryout beekeeping in Miombo Woodlands (Around Kigosi Moyowosi Game Reserves)*

- Owned an average of 553 hives per beekeeper per unit area
- 81.57% log hives and 18.43% top bar hives.
- One log hive cost TZS 15,000/= and top bar hive TZS 65,000/=.
- Average production - 15kg for log hive and 10kg for top bar hive.
- One beekeeper utilized 21 days during harvest period inside game reserve with seven assistants.
- The requirements (inputs) include in the field
  - Permits for entry collected at game reserve office (one for beekeeper and 7 for assistants (each permit 1,000/=)
  - Food items for feed 8 persons for 21 days
  - Hiring transport (fuso lorry) to carry products harvested
  - Each assistant demand 20 litres of honey every 10 days for 21 days is 40 litres time 7 people

# *Beekeepers who carryout beekeeping in Miombo Woodlands (Around Kigosi Moyowosi Game Reserves)..*

- Output from beekeepers was 280 containers of semi-processed honey, 40 containers of second grade honey and 280 kg of beeswax.
- The prices were,
  - TZS 100,000/= per container of semi processed honey at village gate
  - TZS 120,000/= per container of semi processed honey at Dar es Salaam City
  - TZS 8,000/= per kilogramme of beeswax
  - TZS 40,000/= per container of second grade honey (used to make honey beer known as kangara)
- Distribution of the Products
  - 5 containers were distributed free to his adjacent villagers
  - 45 containers were given to assistants and transport herds
  - 230 containers were belonged to beekeepers
  - Earnings was TZS 22,500,000 for honey and TZS 1,600,000/=

# *Beekeepers in Northern Tanzania (Kilimanjaro, Manyara and Arusha Regions)*

- Hives in use log, top bar and frame hives - average of 7 - 15 hives, kept also stingless bees.
- Average production of honey per annum - 7kg for log hive, 9 kg for top bar hive, 6kg for frame hive and 4kg for stingless beehive.
- Cost of hive - TZS 25,000/= per log hive TZS 85,000/= per top bar hive and TZS 100,000/= per frame hive.
- Stingless beehive was sold at TZS 120,000/= with colony.
- Prices of honey per kg were as follows
  - TZS 8,500/= for stinging bees honey
  - TZS 25,000/= for stingless bee honey.
  - TZS 200,000/= for Crude honey

# *Beekeepers in Southern Highlands Zone (Mbeya, Iringa and Njombe Regions)*

- Hives in use were log hives, pot hives and top bar hives.
- Frame hives were used by institutions like churches, Government extension units and private sectors.
- Some beekeepers owned up to 250 log hives
- Production of honey range from 60 kg to 2400kg per individual
- Shade price applied for honey to obtain tree seedlings, fertilizers and farm implements

# Expectations of Beekeepers (Outcome)

- Meet basic households needs
- Building house roofing with aluminium sheets
- Buy motor cycle and Bajaj
- Trustful - “Mali kauli”
- Health status – most of activities are performed by beekeeper and family i.e. metabolic energy is applied.
- Power of land tenure,

# *Livelihood Assets of the Beekeepers and Beekeeping*

- Natural capital
  - Potential areas in forest and game reserves
  - Collection of wild fruits and sell of the same or juices (tamarinds, baobab)
  - Un managed bee colonies that swarms (do not breed)
  - Availability of stingless bee colonies that are kept at home by women and youth
  - Hand crafts – carvings, decorations and mats made from forest resources
- Human capital
  - Indigenous knowledge and practical skills for beekeeping and farming
  - Manpower – health of the family and beekeeping groups
  - Pass over incentives (sharing available resources)
- Financial capital
  - Financial arrangements (vicoba, SACCOs and SIDO)
  - Shade prices and malikauli
  - Village markets and roadside selling points

# *Livelihood Assets of the Beekeepers and Beekeeping ...*

- Social capital
  - Cultures
  - Trustful behaviour of the society to beekeepers
  - Tradition means of storage
- Physical capital
  - Accessibility
  - Equipment used to support livelihood (log, pots)
  - Natural springs

# Vulnerability Context for Rural Beekeepers in Tanzania

Trends	Shocks	Seasonality
<ul style="list-style-type: none"> <li>• Increasing poverty among rural people: subsistence farming do not afford inputs required in beekeeping</li> <li>• Adjacent forest communities dependent on forest resources</li> <li>• Loss of bee resources due to forest destruction, wild fires and agricultural expansion (shifting cultivation)</li> <li>• Increased inflation rates against TZS and US\$</li> <li>• Financial limitations; no scheme (collateral) that enable beekeepers to access loan/credits</li> <li>• Relative on what activity pay better: beekeepers are also crop cultivators,</li> </ul>	<ul style="list-style-type: none"> <li>• Conflicts between resources users (in protected areas) beekeepers and forest dealers, tourist hunting; in general land is between beekeepers and crop growers.</li> <li>• Economic capability- beekeepers lack cash to meet basic needs i.e. facilities for beekeeping. They relay in ‘mali kauli’ and shade price.</li> <li>• Outbreak of diseases in production areas and selling centres.</li> <li>• Application of agricultural pesticides and water pollution</li> <li>• Problem animals in beekeeping areas</li> <li>• Poaching; restriction in protected areas is subjective or objective to control poachers.</li> </ul>	<ul style="list-style-type: none"> <li>• Honey flow is determined by weather (low or high rainfall) affect many miombo woodlands tree species.</li> <li>• Prolonged dry season and absconding of bee colonies.</li> <li>• Seasonal demand for honey and beeswax by middlemen and retailers</li> <li>• Seasonal permit entry to enter in protected areas for beekeeping.</li> <li>• Timing of swarms and harvesting bee products.</li> </ul>



# Discussions

- Local buyers do not prefer refined honey, some like crude honey for making honey wine; others are using crude honey for dowry and cultural rituals.
- Beekeepers in rural areas are respected by the society because during harvesting period they help them with honey just to use as medicine.
- Some have harvested more than 80 containers (each with the capacity of 20 litres) and by using batter system have exchanged with bags of maize, rice and beans.
- In some area, a beekeeper stored maize mixed with honey in a drum for about six months and then it served the community around during hunger period.

# Sustainable Livelihoods Approaches

- Beekeepers in many places of Tanzania do beekeeping with other land use activities that involve family or clan in general.
- Although responsibility of handling bees is the work of father, mother and children were also involved in the process.
- Majority of beekeepers in Tanzania were carried out beekeeping as small-scale as a substitute or complementary to crop farming.
- Earnings were shared among the family and adjacent villagers.

# Appropriate Incentives to Beekeepers

- About 80% of respondents in Arusha, Dodoma, Kilimanjaro, Singida and Dar es Salaam pointed out that they buy honey for curative ingredients, for use as food spices or alternative to sugar and jam.
- In Tabora, Shinyanga and Katavi regions, 40% of honey produced went to honey beer makers. For them, no restrictions on packaging materials, labelling although price was subjective to season.
- In central Tanzania, price of honey was very high at the beekeepers gate because of many buyers from within the country and neighbouring.
- Family not recording amount of honey used as food, given to friends and that sold to couples for dowry payment.
- Do not capture quantity of honey involved in shade price arrangement or barter systems means.

# Participatory Beekeepers' Evaluation

- Beekeepers in rural areas dislike questions or interviews to know about volume of honey harvested or sold
- They are free to answer questions associated with the importance of beekeeping and why decided to become a beekeeper.
- Self Participatory Evaluation is a useful tool that helps to gather information from beekeepers and users of bee products at village level.
- It guide society intended to point out plans and expectations that will help to make step in develop.

# Participatory Beekeepers' Evaluation..

- Based on evaluations that conducted in 2002, 2005 and 2009 involved communities in Njombe, Ludewa na Iringa Districts
- farmers/beekeepers were asked to evaluate themselves, the main questions set were:
  - how many hives a beekeeper can own to meet basic family needs;
  - who own hives and lands: what are the roles of the family (father, mother and children) and
  - who benefit more than others in the family or society.
- They responded as follows:
  - family need sufficient food throughout the year;
  - need money to meet school fees,
  - need money for health (traveling to health centres, purchase of medicine and
  - family want food for the family and help neighbouring.
  - At the village level, they keep bees so as to get honey for food, and meet basic needs including building society cohesion

# Participatory Beekeepers' Evaluation..

- A group of tree growers (villagers) in Kifanya Village in Njombe have the planned to raise tree seedlings for sale.
- They introduced beekeeping as an income generating activity. After a year they harvested 15 containers, which were sold and the money used to buy hand-water pump, seedling and polythene tubes. (it was difficulty for them to contribute in cash)
- Beekeepers recognised themselves to see their children are in schools, able to pay social interaction costs and meet daily basic needs through bee products harvested.
- Willing to record series of items brought after harvesting and sale of the products e.g. clothes, aluminium sheets and bicycle.
- The most prominent for them is health of beekeeper and family and respect they get from other villagers.
- During harvest, beekeeper tend to offer 1/2 litre of honey to each neighbouring villagers around ten cell households.

# Indicators for Measuring Beekeeping

- In calculating benefits from beekeeping, many experts are basing on the inputs versus outputs in terms of monetary value.
- Beekeepers around protected areas they incur cost of food to feed people who assist them during harvest who stay 21 days in the field. 5-8 Assistants for one beekeeper
- Assistants demand (wages) a twenty-litre container of honey for a week basis.
- It exclude costs for shelter, food and transport from the village to the field and back home.
- Most of Beekeepers have informal financial arrangements that help them to deliver harvesting facilities from Suppliers in the form of “mali kauli”
  - “Malikauli” Swahili words – statement of promising to pay back nominal money or honey equivalent to the price of the item/facility requested.
- Rural beekeepers have been set indicators that include,
  - ownership of beekeeping area,
  - number of hives, number of individuals casual labours,
  - health/strong to work, ability to meet basic needs,
  - materials brought after harvesting.

# CONCLUSION

- Production of bee products (honey and beeswax) for many beekeepers in Tanzania are based on the ideal to meet basic needs and maintain social status.
- There is need to introduce informative scheme that incorporate ideas of villagers within their range of interact. This may help to collect hidden information that are useful for measuring economic indicators for rural development through beekeeping.
- Action plans for improving beekeeping may focus on opportunities rather than recycling on problems.
  - Opportunities available for rural beekeepers are associated with availability of land (beekeeping areas), increased local market, development of middle class and responsible government to provide incentives to beekeepers especially on areas that for them is difficult to change.



# Recommendations

- Adoption of indigenous knowledge and cultures that regulate use of natural resources for beekeeping is vital for promoting sustainable livelihood to rural communities.
- Incorporate plans from rural beekeepers by providing incentives that are most relevant to them.
- Incentives to beekeepers are not necessarily support of beehives but also harvesting facilities and protected gears.