



# Guideline to construct Ethio-ribrab beehive

Prepared by:

Gebreamlak Bezabih and Guesh Godifey (Tigray Agricultural Research Institute)

Yayneshet Tesfay, Dawit Woldemariam and Haile Tilahun (International Livestock Research Institute)

Correspondence to: Yayneshet Tesfay ([y.tesfay@cgiar.org](mailto:y.tesfay@cgiar.org))

**March 2015**



Foreign Affairs, Trade and  
Development Canada

Affaires étrangères, Commerce  
et Développement Canada



**ILRI**  
INTERNATIONAL  
LIVESTOCK RESEARCH  
INSTITUTE

**IWMI**  
Internacional  
Water Management  
Institute



## Materials needed for constructing Ethio ribrab beehive

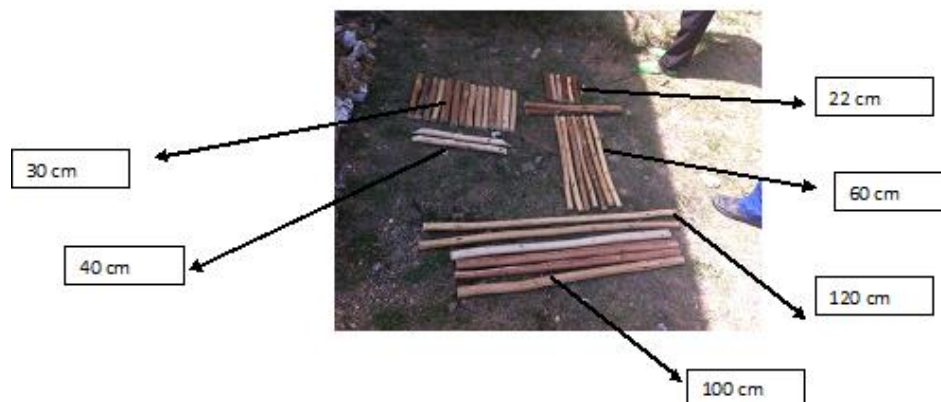
The following local and industrial materials are required to construct one Ethio ribrab hive:

1. Eucalyptus of 4-5 cm diameter or any other suitable wooden poles and nails
2. Queen excluder and plywood
3. Hollow bamboo, plastic cover sheet, wire and rope

## Steps in constructing Ethio ribrab hive

### Step #1: Cutting wooden materials

Farmers need to make sufficient preparation for making Ethio ribrab hives. This should start by cutting eucalyptus into six different lengths as indicated in picture 1:

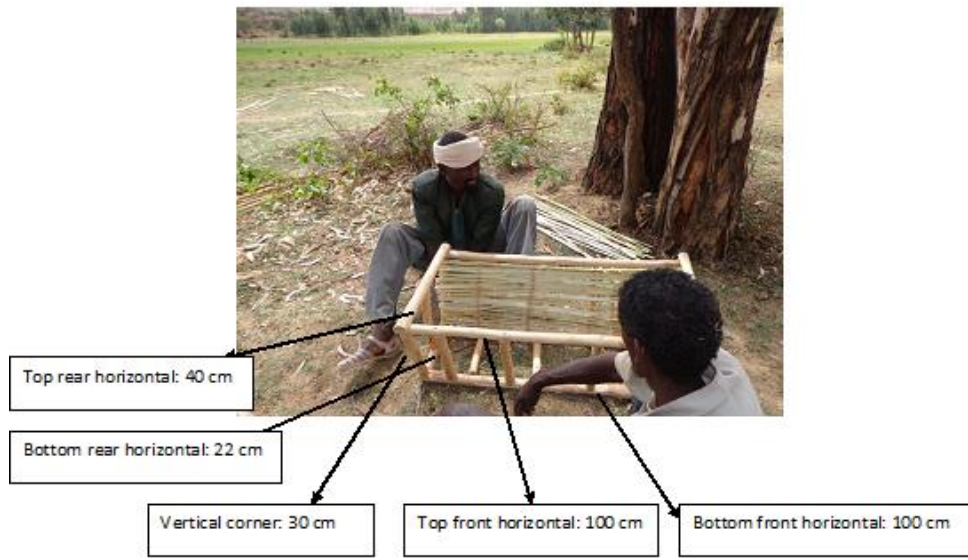


**Picture 1:** Properly cut frames

The required lengths and quantities of eucalyptus poles include:

- Two pieces of 120 cm long: used as the long side of hive cover
- Four pieces of 100 cm long: used as top and bottom length of hive
- Seven pieces of 60 cm long: used as the short side (width) of hive cover
- Two pieces of 40 cm long: used as top width of hive
- Fourteen pieces of 30 cm long: used as vertical frames/raisers
- Six pieces of 22 cm long: used as bottom width frame

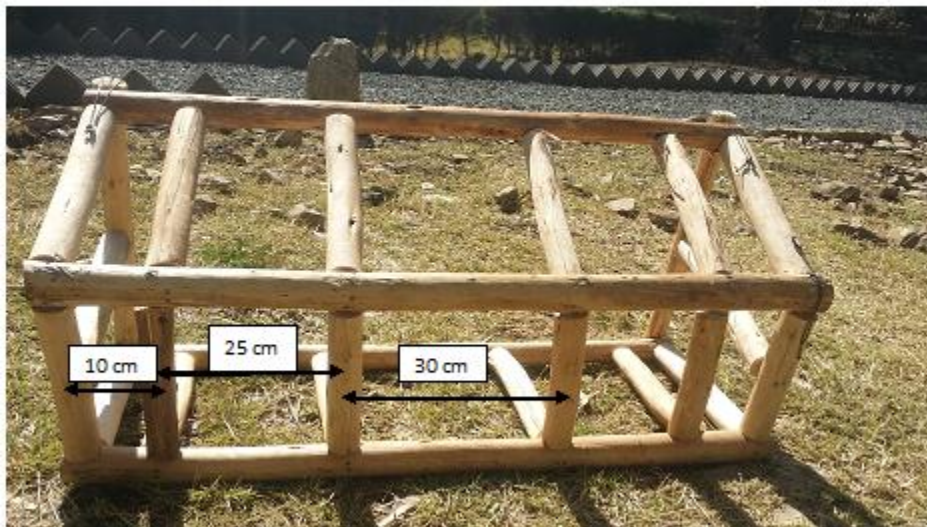
The different parts as they appear on the assembled hive are indicated in picture 2.



**Picture 2:** Length of main supporting parts

**Step #2: Assembling**

Picture 3 shows joined eucalyptus poles using appropriate size nails. The gap between the vertical stands is 10, 25, and 30 cm (picture 3).



**Picture 3:** Joined horizontal and vertical parts

Once the eucalyptus poles are joined, the sides and bottom are covered using hollow bamboos (Picture 4). Up to 9 pieces of 2-3 cm diameter of whole hollow bamboo may suffice to make a hive. The bamboo should be vertically dissected into four, and approximately 14-16 slices are enough to cover one side of the hive. At the bottom, 10 cm wide bee entrance and exit hole is left.



**Picture 4:** Weaving dissected hollow bamboo on five sides of the hive

### **Step #3: Mud plastering and creating a groove for inserting queen excluder/plywood**

The inner side of the assembled hive should be plastered using mud composed of loam soil and fine straw, and slowly dried under shade (Picture 5). It is advisable to finish the plastering using cow dung and rub the inner side using plants preferred by bees. This has the advantage of rapid familiarization of bees with the new hive and minimizing absconding.



**Picture 5:** Mud plastered hive with a groove (left side), plywood (middle) and queen excluder (right) inserted



In the event that the colony is weak and there is a need to use a smaller space, adding curved plywood (40 cm length X 35 cm height X 22 cm width) may be essential (middle picture above).

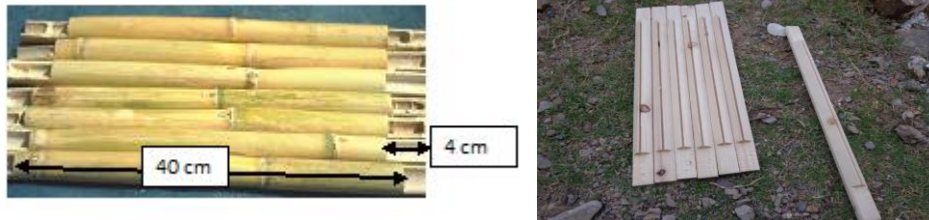
**Step #4: Constructing hive cover and making frames**

The hive cover is made from eucalyptus poles, intact bamboo and plastic or iron cover sheets and is 120 cm long and 60 cm wide.



**Picture 6:** Cover for Ethio ribrab beehive

As indicated below, the frame to which the comb is attached is made from up to 22 thick hollow bamboos or other wooden materials.



**Picture 7:** Bamboo (1<sup>st</sup> picture) and wooden frames (2<sup>nd</sup> picture)

The following picture shows Ethio ribrab beehives constructed by farmers trained by LIVES.



**Picture 8:** Ethio ribrab hives completed by farmers trained by LIVES

### Step #5: Transferring colonies

As Ethio ribrab is supposed to replace traditional beehives, colony transfer should be made from such hives at a time when the colony is strong enough to be transferred to a new hive. This period often falls at the middle of the rainy season.



**Picture 9:** Colony transfer from a traditional to an Ethio ribrab hive

Our own field experience so far gained pinpoints the fact that making Ethio ribrab beehive is not beyond the capacity and skills of ordinary smallholder farmers. It can easily be made by smallholder beekeepers who received basic training using locally available materials. Once popularized, farmers can move away from traditional beehives and boost their honey yield and quality while at same time securing part of the household's demand for beeswax.