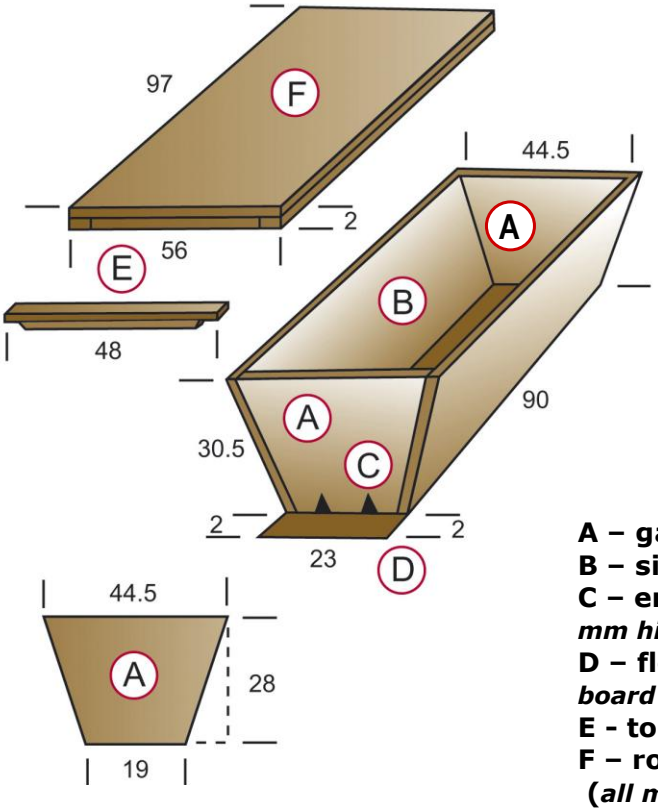
How to Make a Moveable Comb Top Bar Beehive

The women of the Nessuit Project (Rift Valley, Kenya), lining a hive with cow dung and mud

Additional images provided by Roy Dyche and Paul Latham

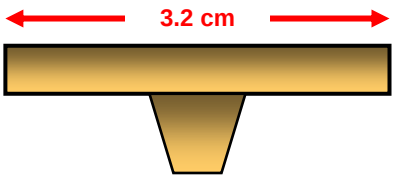
The plan shows the size to make the hive. Standard sizes allow a beekeeper to move comb from one hive to another. This allows bees to be more easily managed and makes honey harvesting easier.



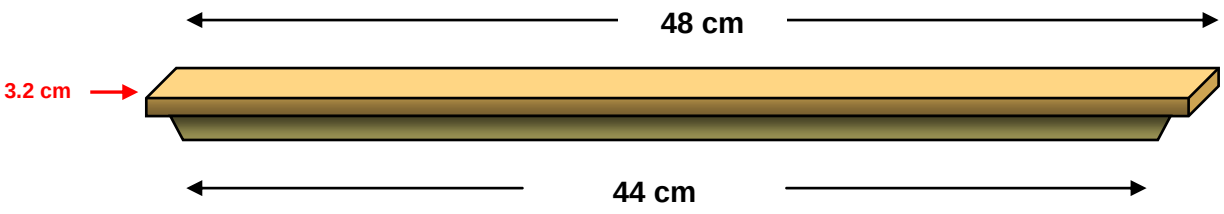
A – gable end
B – side panel
C – entrance (*no more than 8 mm high*)
D – floor (*& optional landing board no bigger than 2 cm*)
E - top bar
F – roof
(*all measurements are internal to allow for variation in thickness of construction materials*)

Top Bars are usually wedge-shaped. It is essential that the top bars are exactly 3.2 cm wide:

END VIEW OF TOP BAR



SIDE VIEW OF TOP BAR



1. MAKING A HIVE FROM PLANKS

Cut selected timber to size. These are the side panels.

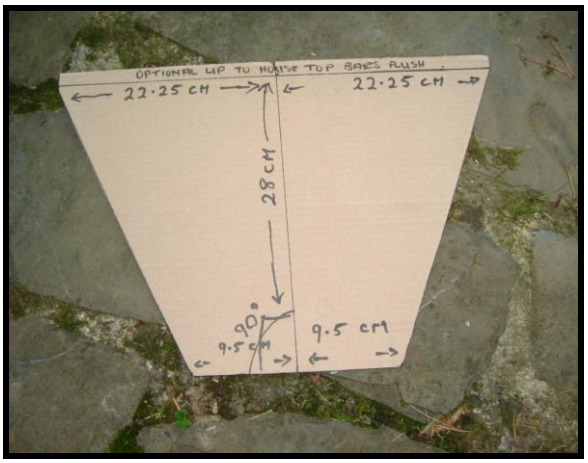
The wood may need to be planed to give a neat fit.

Two shorter pieces are nailed together make the gable ends (front and back). Cut the ends off two nails (or hammer flat with a stone) to give a nail with two sharp ends. Hammer the sharp end of the nails into the planks to join the wood.

The joined wood makes the rough gable shapes (front and back).

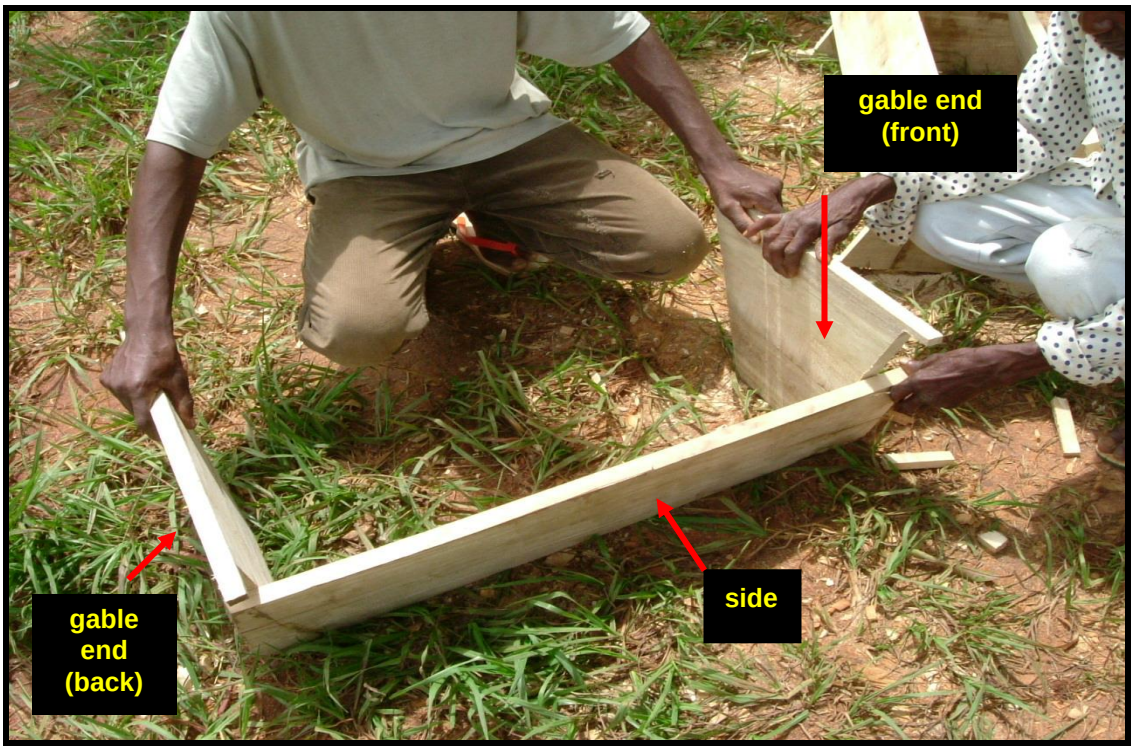
Saw the rough gable shapes into the correct shape and size.

Use a standard template to make measuring easier. This is made of cardboard. Measuring from the middle ensures accurate angles.



Cut a slot or a row of 'V' shapes or drill holes (no bigger than the diameter of a biro pen) in one gable end for the entrance. The entrances must not be more than 8mm high to prevent pests entering the hive.

Once the pieces are cut the hive is ready to put together. Here the sides are being nailed to the gable ends. Then add the floor.

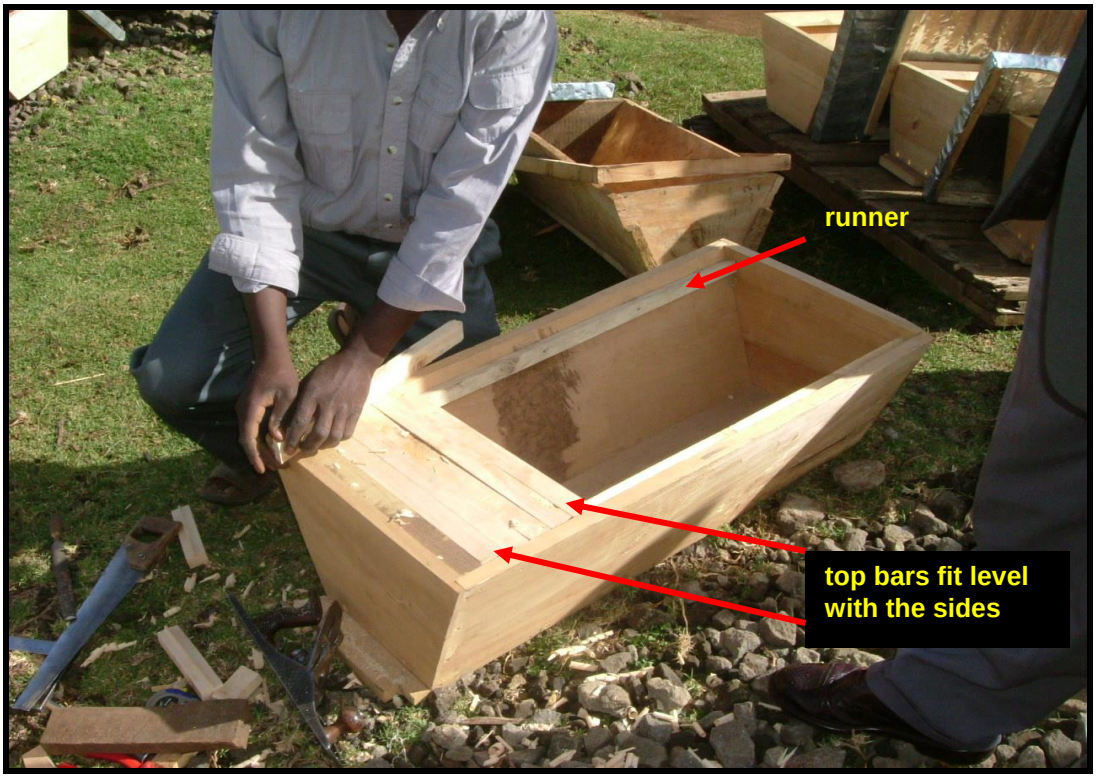


Constructing the hive body.

Some people make hives with the gable ends a little higher than the sides to accommodate the top bars.

The top bars fit neatly because of higher gable ends

Other people put a runner inside the hive so the top bars fit neatly with the sides.



2. MAKING A HIVE FROM CHEAPER LOCAL MATERIALS

Hives do not have to be made of expensive wood. Many easily available local materials can be used successfully. This is raphia palm wood.

You can make the shaped gable ends of scrap timber, and the sides and floor of local materials. This hive is made of straight sticks.

This "Grande Ruche" top bar hive from the Congo is cleverly made using no nails or plank wood at all. The soft material is pinned together with sharp sticks.

The gaps in this bamboo hive must be filled carefully with suitable material to keep pests out.

This Ugandan hive is made of stalks. It is mudded with a mixture of mud, wood ash and cow dung.

This strong Ugandan hive is woven from wicker.

The floor and sides of these hives need to be mudded to keep them dark and to prevent ants and other pests getting in.

The roof doesn't have to be made of expensive materials, as long as it protects the hive from the rain. This roof is covered with plastic.

This roof is made of a wooden frame with two pieces of bamboo matting placed on top of each other. There is layer of waste plastic in between, to help make it waterproof. The top is also covered in plastic.

This roof is thatched like the local houses. It has solid ends so snakes or other pests cannot enter, and handles so it is easy to lift off.

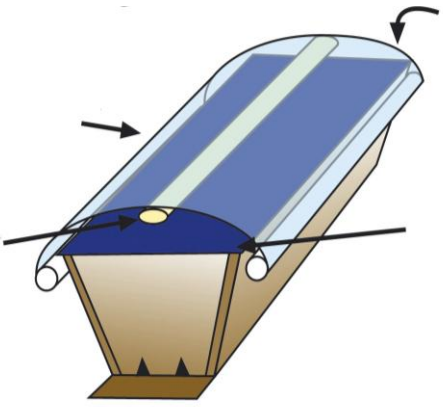
A hive roof can be made of split bamboo – like the roof of this local building in Kenya.

The bamboo is split in half and then laid together like this –the same way as corrugated tin. Cover the bamboo with polythene for extra protection.

A very simple roof can be made of a large polythene bag with two poles inserted at the sides. Their weight holds the polythene down.

4. cover over with banana leaves or other vegetation

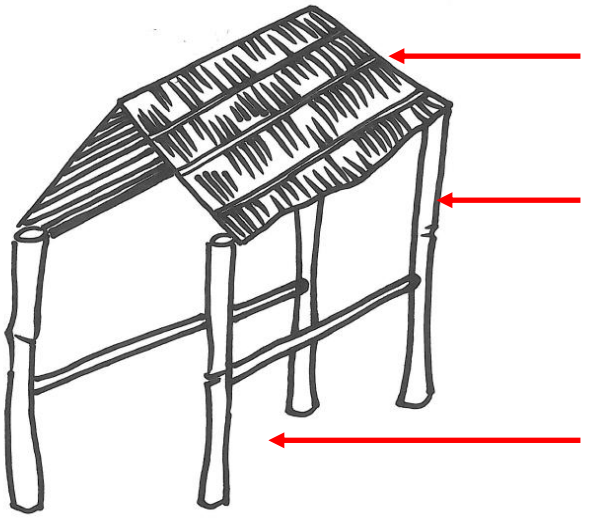
2. bamboo support over polythene sheet, so water will run off sloping roof



3. polythene bag with poles to hold down sides

1. sheet of polythene over top bars

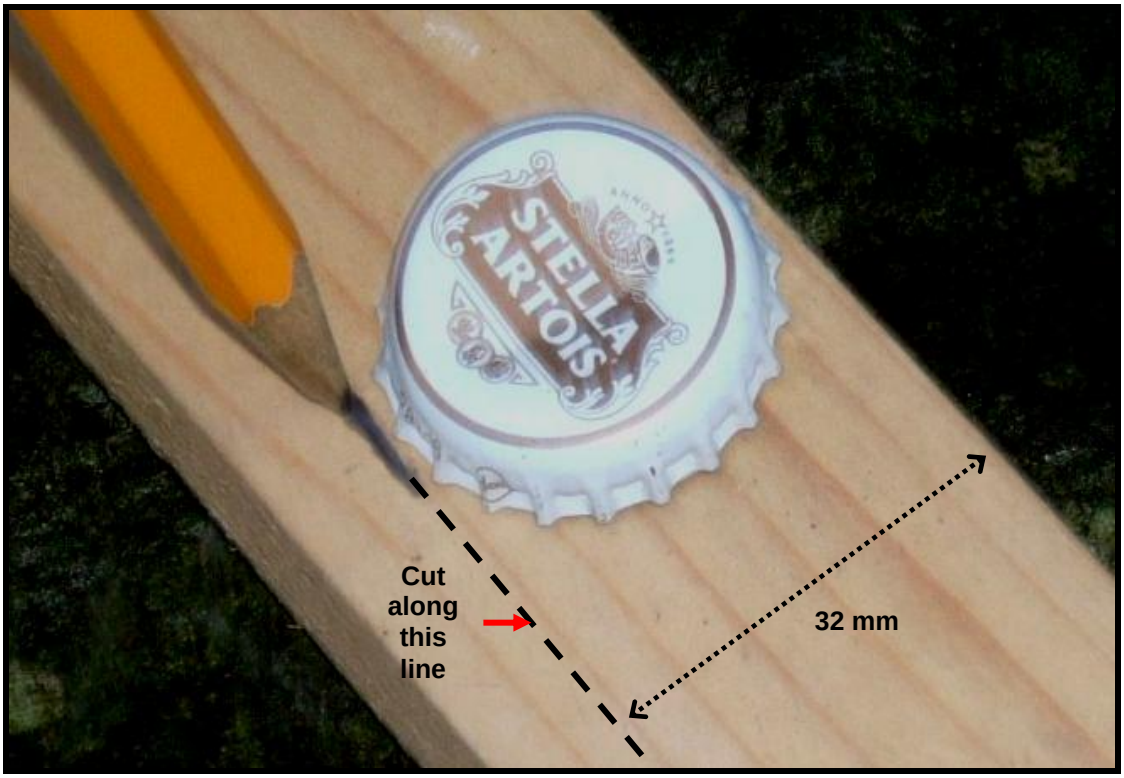
If it is not possible to make a fitted roof this thatched cover may help to protect the beehives from the sun and rain.



This completed stick hive is put into a wooden carrier made of lashed together sticks, to which wires are attached. This makes the hives easier to hang and protects the more fragile local materials from damage. The hives can be moved by lifting them from the carrier, making colony division easier.

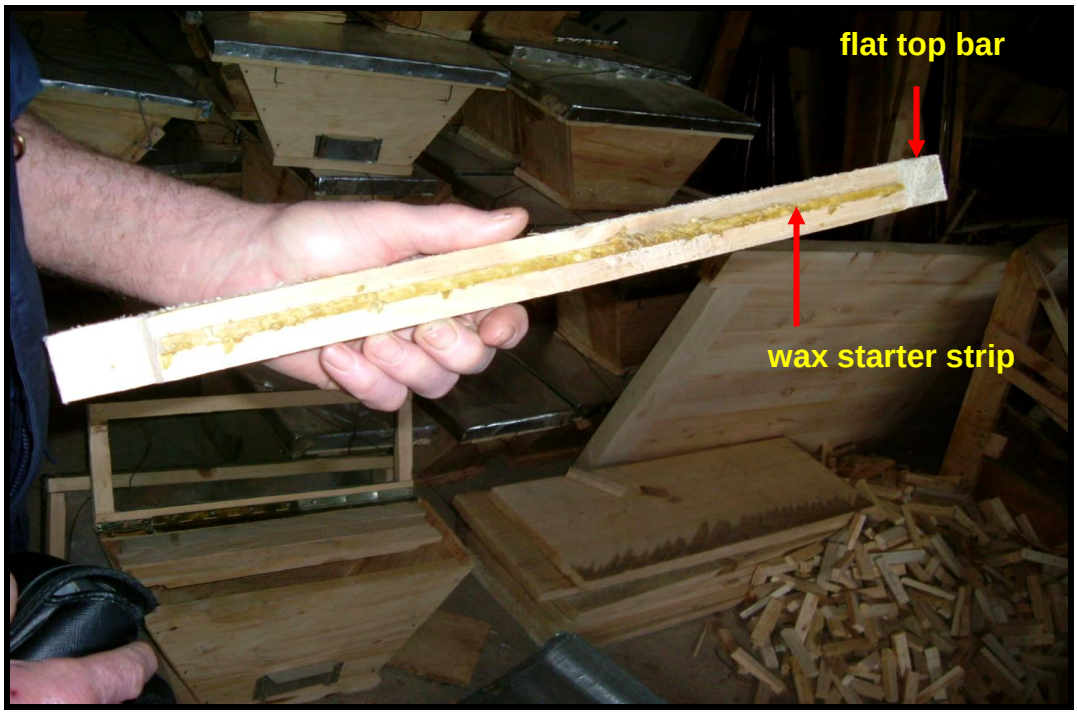
3. MAKING THE TOP BAR

Cutting top bars is the most difficult and expensive part of hive building. It is essential they are 32 or 33 mm (3.2 or 3.3 cm) wide. The width of the top bars can be measured using a bottle top or a used 9 volt battery (the only square shaped battery).



Most top bars are wedge shaped in cross section. However, many people have success with simpler top bars made of local materials that are easier to cut than best timber. This top bar is made of raphia palm.

This top bar is not wedge shaped. It is cut flat.



Sticks, bamboo, or other suitable materials can be carefully cut to size.

The wax starter strip can be easily made with a beeswax candle.

Have a look at this picture. You can discuss it with other beekeepers. These top bars are made of bamboo filled with wax, which is a good idea to try. However, the beekeeper will have trouble getting the bees to build one comb on one top bar because the bars are not accurately cut.

Badly cut top bars are the cause of most problems that can happen when using top bar hives.

If the top bars are cut correctly and waxed well, bees will build one comb on one top bar. This allows the beekeeper to harvest easily and move combs between hives to manage bees in a similar way to frame hives.