

What is an A-Frame ?



Farmers work very hard to keep the soil fertile for growing crops. But it often seems that there's never enough production for the work involved. On steep slopes, the soil and its fertility are easily washed away in the rains. Due to this, soil, compost and water - 3 of the most important resources for farming - are lost. And then, all the hard work is wasted.



A completed A-Frame

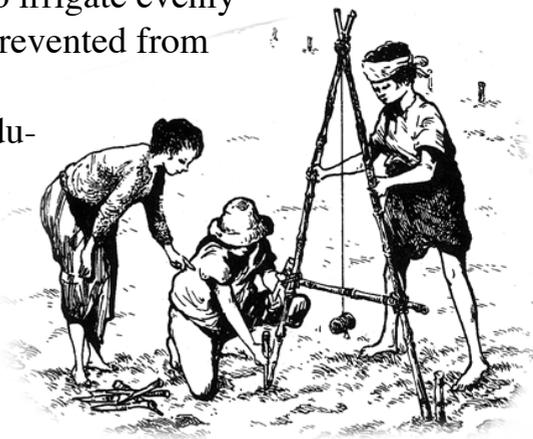
The **A-frame** is one way of solving this problem. The A-Frame is a tool which can be made at home from local resources. It is called an A-Frame because it looks like the English letter "A". The A-Frame is used for marking out horizontal lines, or **contours**, across a slope. These can be used to dig ditches or plant trees which will prevent soil, nutrients and water from being washed away. In this chapter we'll read about how to make and use an A-Frame.



Why use an A-Frame ?

The A-frame is used especially to mark out contours on slopes. Ditches or terraces can be dug along these marked contours, or trees can be planted along them. There are many benefits of doing this, such as :-

- rain water is prevented from running off down the slope
- soil is prevented from being washed away with the water
- it's easier to make terraces on the sloping land
- the ditches can be used to irrigate evenly
- ravines and gulleys are prevented from forming
- existing gulleys will gradually be filled in with soil
- soil nutrients are prevented from being washed away
- therefore, more water and nutrients are made available to the soil and crops growing in the soil



This Chapter's Author :

Mr Laxman Rana

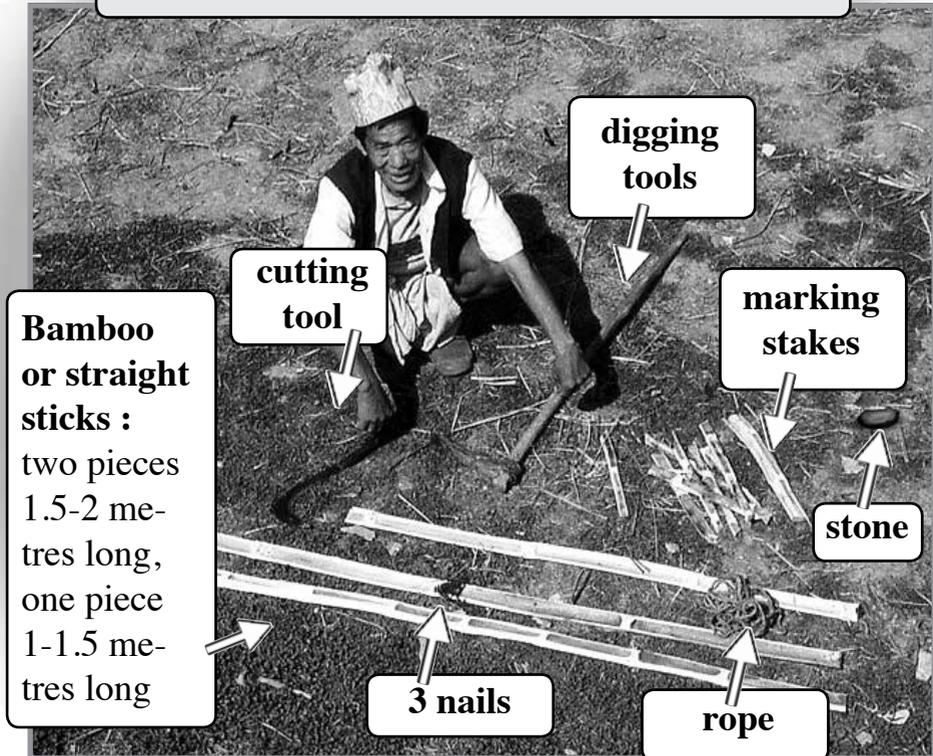
**Community Service Group, Da-
hachaur 4, Surkhet, Nepal**



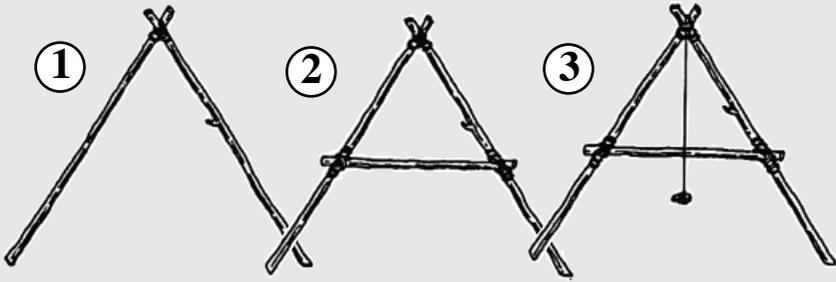
How to make an A-Frame ?

First we'll read about how to make the A-Frame, then how it is used.

Materials Needed to make an A-Frame

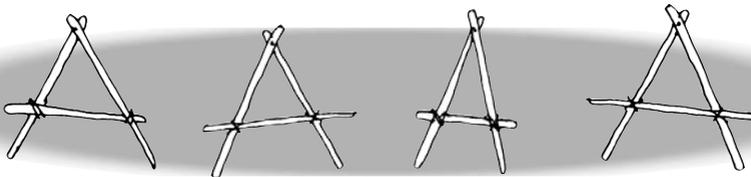


To make the A-frame a flat piece of land is needed. The courtyard of the house is usually flat enough for this.



These pictures show how the A-Frame is put together. More details are given along with the colour photos.

The A-Frame is constructed by joining the legs, level stick and string as in drawings 1, 2 and 3 above. It is **NOT** essential that the long sticks which make the legs of the A-frame are exactly the same length, nor that the middle stick is exactly horizontal. It doesn't matter if lengths are different, or if the sticks are not exactly straight. As in the drawing below, some A-frames can be more uneven, but they all do the same work.



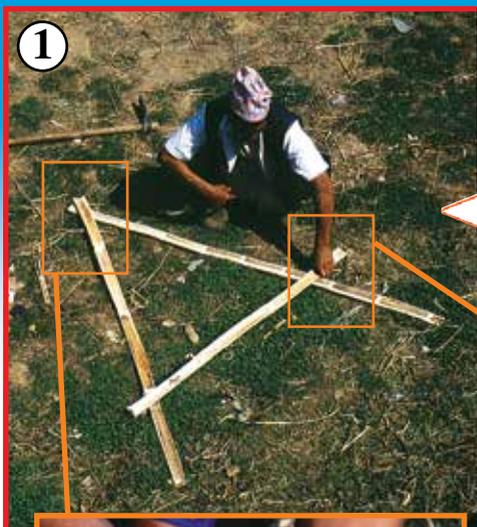
The most important part of the A-frame, so it can mark out contours accurately, is the relationship between the string and the horizontal stick. The way that this is done is shown in detail in colour photos 7 to 14

Now the A-Frame is ready to use

Let's See

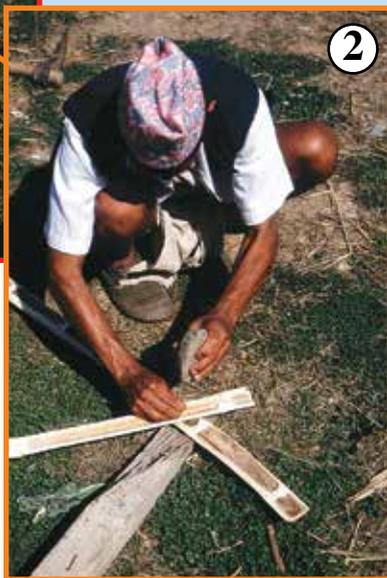
how to make an A-Frame

1



Lay the sticks out in the shape of the English letter "A"

2



3



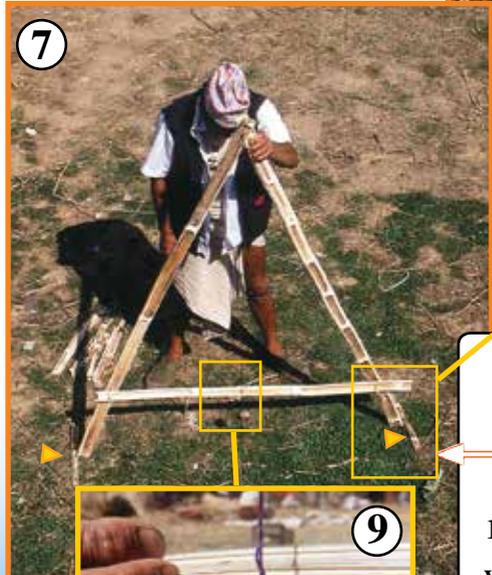
To join the pieces use nails or string

4

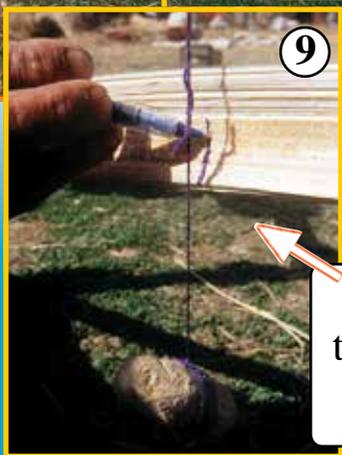




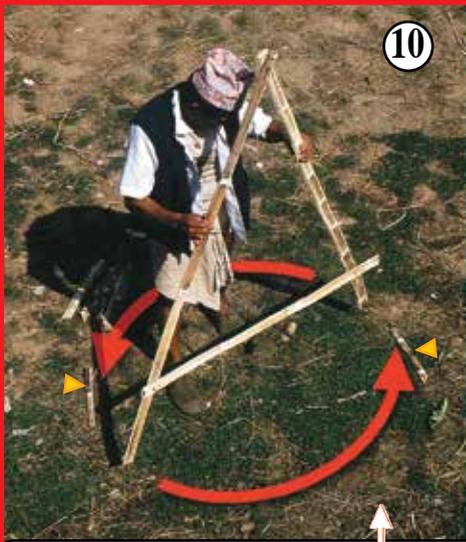
5 From the top nail, hang a thin string with a heavy stone tied at the bottom



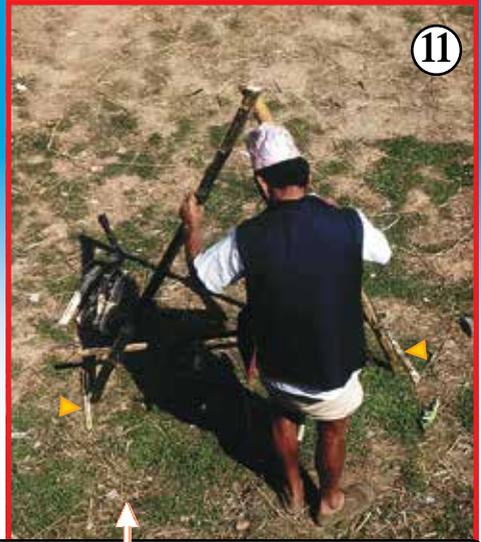
7 On level ground, make a mark (◀) where the feet touch the ground



8 Then make a mark where the weighted string touches the horizontal stick



10



11

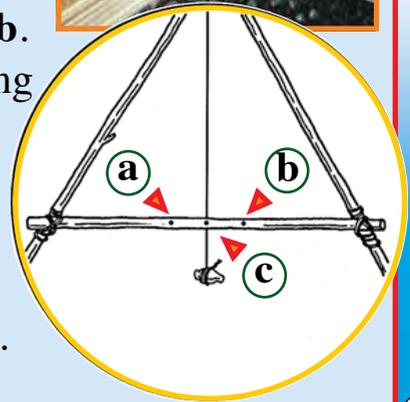
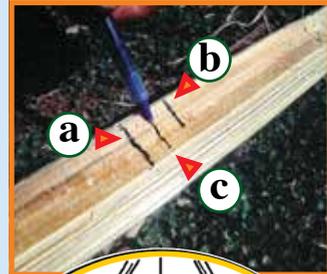
Without moving the marks (◀) on the ground, lift the A-Frame, turn it around and place it so the opposite feet are in the same place on the marks on the ground

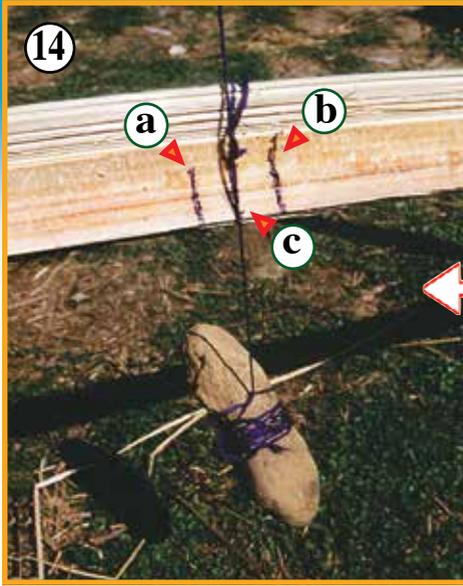


12

Again, mark where the string touches the horizontal stick

13 Now there are 2 marks, **a** and **b**. Make a third mark, **c**, exactly in between **a** and **b**. When the string touches **c**, you know that the feet are on exactly level ground.





When marking a contour, the the feet of the A-frame are level when the freely hanging, vertical string is touching the mid point (c)



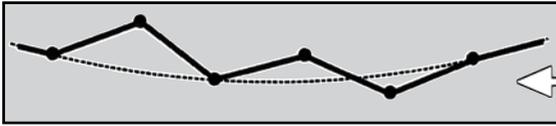
A new terrace is dug along the contour marked out by the A-frame



The A-frame can also be used on bare, degraded slopes.

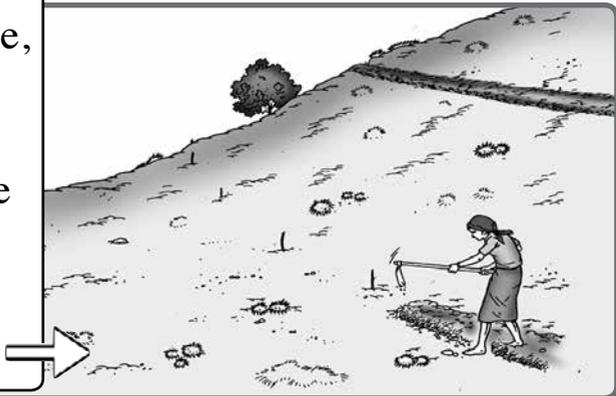
How to use the A-frame

Mark out contours starting from the top of the slope. Mark out the path of the A-frame with stakes.



If the marks are a little erratic, take an average line between all the marks to make a smooth line.

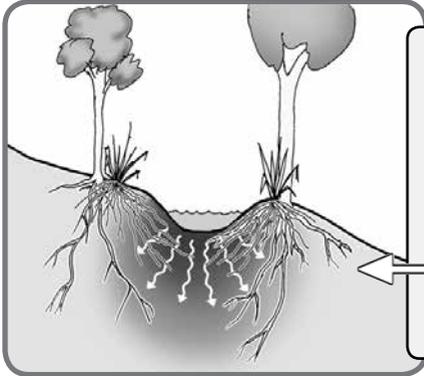
By digging on the marked line, a horizontal ditch is made. Or trees can be planted on the line to make agroforestry.



Let's plant trees in the A-frame's footprints

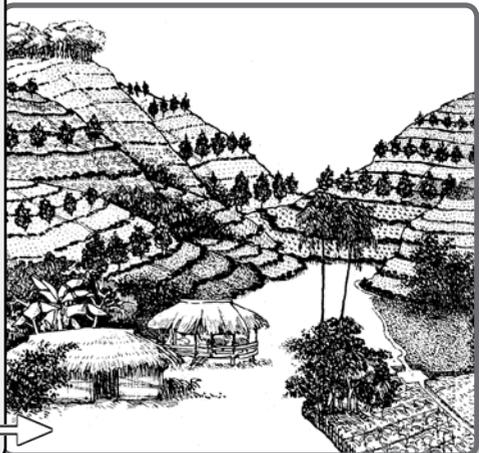
Soil, nutrients and water are all conserved by the terraces and ditches made using the A-frame. This helps soil fertility and crop production to increase, and at the same time fruit and other useful trees and shrubs can be planted on the contours.

This swale has been made with a very slight slope to transport water for irrigation.



The swales stop water and nutrients in the soil from moving downhill. Trees planted on the edges of the swale will use the water and nutrients to grow.

When farmers start to repair soil in this way they can also make their land more fertile and productive. There are more ways of doing this in the **Soil Conservation and Improvement** chapter.



Farmers' Experience

Mrs Khagisara Thapa

From Nepal, Surkhet district, Lekh Pharsa-3, Saje village, Mrs Khagisara Thapa has experience at making and using an A-Frame. Now let's read about what she says.



Mrs Khagisara Thapa

“The A-frame is an easy method for farming crops such as corn, fruit trees and the like on steep sloping land. After making ditches and terraces with the A-frame, the erosion of fertile soil is stopped. On our farm, we've planted lots of types of fruit and fodder trees along the A-frame lines. That helps to separate the trees from the cultivated crops. On the swale, the permanent crops are planted. Above and below the swales are regular crops like corn and wheat. I started to learn this in 1996, and used the skill to plant trees on our farm. We wove homemade cloth, and when we had free time went and marked out the swales with the A-frame, and then dug them and planted trees. It was very easy for us to do, and not complicated.”



Read On !



Subjects Related to the A-Frame

This book provides enough information for you to be able to make and use your own A-Frame. However, this information is also linked to other methods. For extra benefits let's read, learn and practice from other related chapters.



Soil Conservation and Improvement chapter

In this chapter, more information is given about what is soil, how to protect existing soil, and lots of ideas about how to regenerate damaged soil into productive land again.



Agroforestry chapter

Planting trees on farmland can bring farmers many benefits. This chapter gives information on how to plant trees without affecting farm yield.



Fruit Tree Planting chapter

Fruit trees can also be planted on the contour, but if they're not planted well all the work can go to waste. Information on more productive planting is given in this chapter.



Integrated Fruit Orchard chapter

This chapter explains how you can plant many varieties of trees and shrubs to get more production, and faster too.

