

# CHAPTER 3. SEEDBED PREPARATION

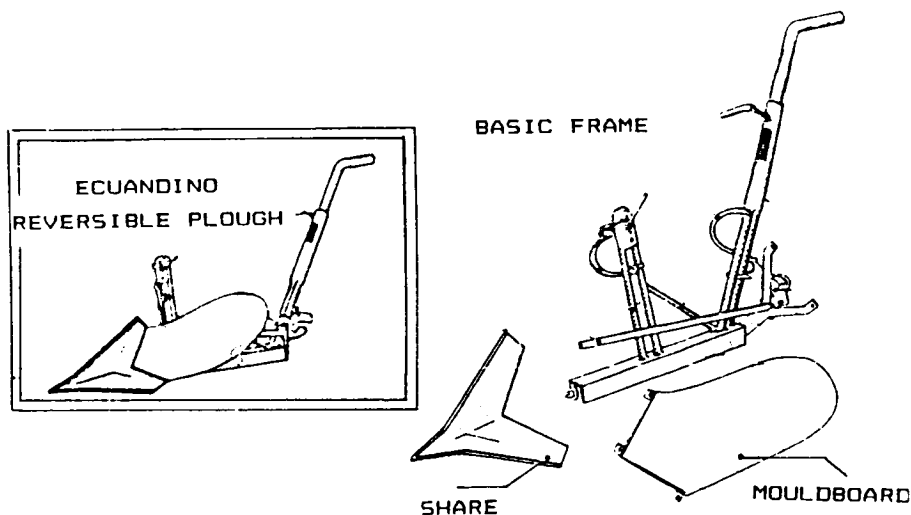
## 3.2 PLOUGHING EQUIPMENT

### 3.2.3. USING THE ECUANDINO REVERSIBLE PLOUGH

#### INTRODUCTION TO THE ECUANDINO REVERSIBLE PLOUGH

The Ecuandino reversible plough has been developed for the hill districts in Ecuador. It is similar to reversible beam ploughs which are made in Bolivia, Peru and Honduras but certain design details make it specially suitable for local conditions.

The plough is mounted on a multi-purpose frame which is attached to the beam (**Fig.1**). This frame can also carry a number of other tools such a simple (non reversible) plough, etc.



*Fig. 1 The component parts of the Ecuandino reversible plough showing the basic frame, the mouldboard and the share.*

*Source for all drawings in this Module: Anon, 1991 (Ecuador)*

#### PREPARATION OF THE BEAM

It is essential to cut the beam correctly for successful ploughing. The beam is made from a straight pole, 8 to 10 cm thick and between 3 and 3.8 metres long, depending on the size of the animals.

One end of the pole is tapered on one side until it fits tightly into the support on the handle .

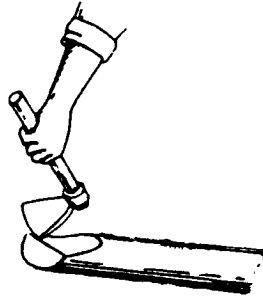
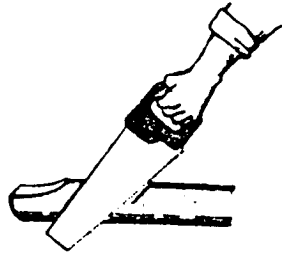
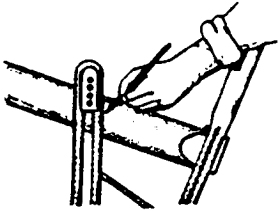


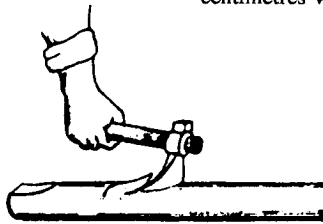
Fig. 2 Shaping the beam end

It is most important that the beam and the plough body are correctly aligned.

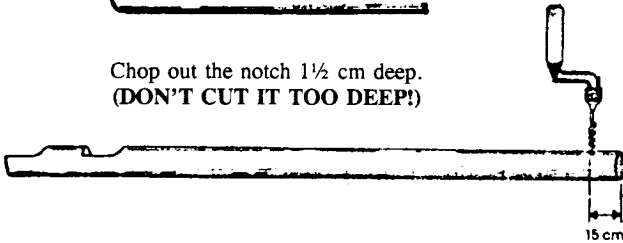


Trace out a line behind the vertical support

... and cut the beam to a depth of 1½ centimetres with a saw.

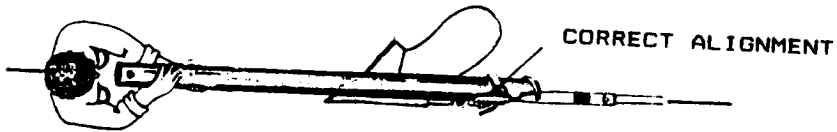


Chop out the notch 1½ cm deep. (DON'T CUT IT TOO DEEP!)



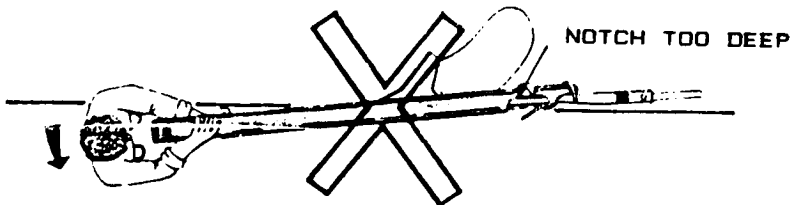
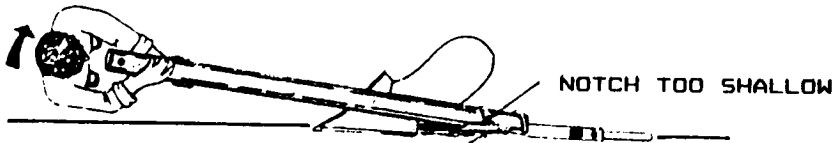
Drill a hole 15 cm from the other end

**ALIGNMENT OF THE BEAM WITH THE PLOUGH**



*Fig. 3 Checking the alignment of the beam*

Check carefully that the beam and the plough body are in line as shown. Now reverse the plough and again check the alignment.

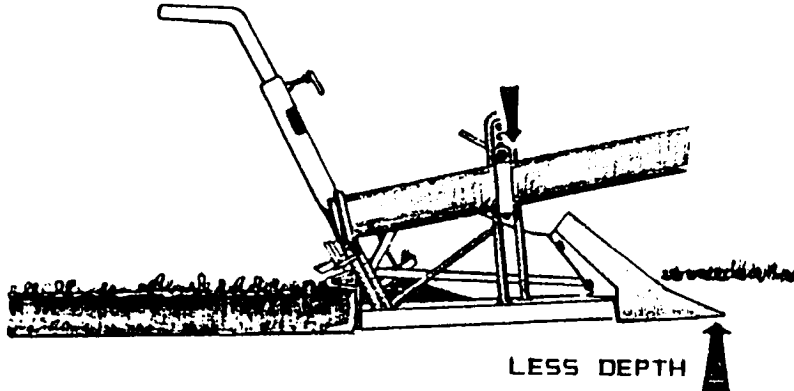


*Fig. 4 Incorrectly cut notches.*

The notch may have to be cut a little deeper for correct alignment but beware, if it is cut too deep the beam will have to be remade.

### FIELD ADJUSTMENT OF THE ECUANDINO REVERSIBLE PLOUGH

Depth adjustment is carried out during ploughing. Select the upper fixing hole on the clamp for the greatest working depth. The lower holes progressively reduce the depth (Fig.5). Working width is adjusted directly by the operator, inclining the plough to either side to steer it.



*Fig. 5 Adjustment clamp for the depth of work*

### MAINTENANCE OF THE PLOUGH

Regular maintenance of the plough will improve its performance and reduce time lost preparing for work or during field adjustment.

#### **AT THE END OF THE DAY**

- Scrape off soil in the field;
- Tighten up the nuts and make sure the clamp used for depth adjustment can be slackened if necessary;
- Check the share for wear and be prepared to change it eventually;
- Wash and oil the plough if it will not be used for a few days;
- Store it safely and away from the animals to prevent injuries.

#### **AT THE END OF THE SEASON**

Thoroughly clean all the parts and check them for wear or damage. Repair the share and mouldboard and replace any damaged nuts and bolts. Paint the plough if needed and wipe it with oil as protection against rust. Store it in a dry and secure place.