

# PREPARATION OF NURSERY FOR RAISING SAPLINGS OF DIFFERENT TREE SPECIES

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## Theory:

The nursery is a place where seed, sapling and other planting material are produced and maintained with special care for planting in other location and/or for raising or hording of young plant until they are ready for more permanent planting.

Afforestation of waste land and regeneration all agroforestry plantation may be carried out either by sowing seeds directly into field and /or planting of nursery raised seedling cutting stems etc. Although the easiest and cheapest method of artificial regeneration is sowing seeds by planting of nursery raised seedlings after several advantages over seed sowing. These advantages are-

- Several species are initially slow growing resulting inhibited by weeds and killed by intense competition. The nursery raised seedling are better equipment to compete with weeds to adverse site factor and success is ensued
- Several species do not produce seed every year In this case nursery raised seedling provide planting stock available all the years.
- Several species when grown by direct sowing are not successful compared to planting. In this case nursery is essential component on an artificial regeneration. Nursery raised seedling are capable of rooting in adverse condition as their root and other system are well developed.
- Nursery raised seedling reduced the life cycle as growth is factor.
- In areas where biotic factor is more i.e. road side, railways, pond banks, and areas adjoining villages can be afforested successfully only through nursery raised seedlings.

Nursery usually intensively planted plots restricted to be the culture of small woody or herbaceous perennial plants closely set in beds, rows or containers. The nurseries are permanent or temporary. Nurseries are established in or near planting areas and are often supplementary to be a permanent one. The nursery should be established in a place where the following facilities are available:

- a) Adaptability of the tree species to the local climate.
- b) Good communication facilities.
- c) Well drained high land.
- d) Suitable soil condition (fertile soil)
- e) Technical experienced labor facility
- f) Local demand and available market facilities

However, the size of a nursery should be according to the need and purpose. An ideal nursery should have enough land for raising seeds, saplings for maintaining mother plants, established work and implement shed, office building store room, lath house, green house, water source, etc for effective management of a nursery. Emphasis should be given on proper management of soil fertilizer and manures, water, weeds, insects etc. All kinds of machineries and skilled labour is prerequisites for a good nursery.

### A. Planning of an agroforestry nursery

A diagrammatic view of an agroforestry nursery is show in Figure 1.

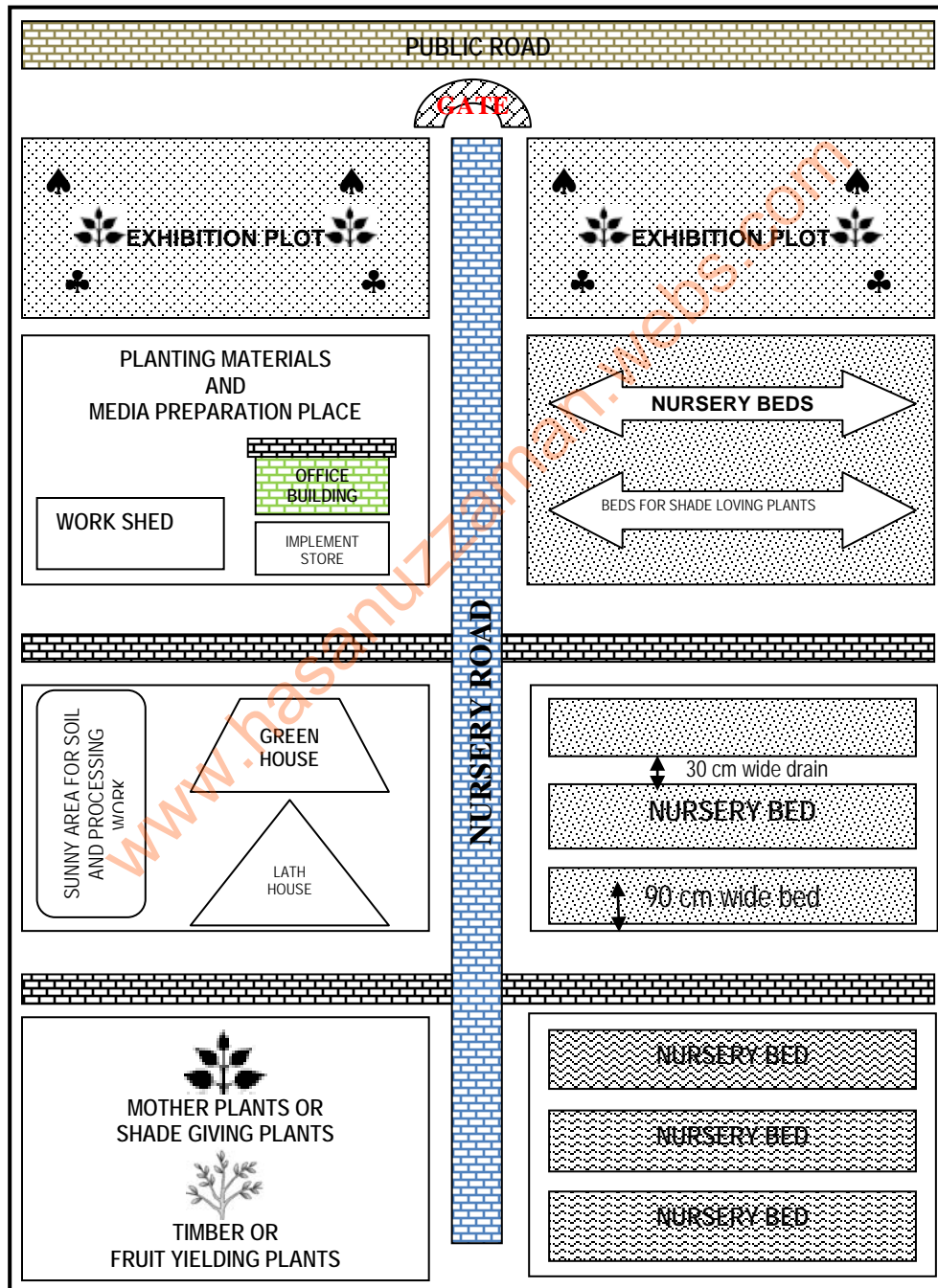


Fig. Layout of an agroforestry nursery

## B. Nursery bed:

A seed bed or a nursery bed is a prepared area in the nursery where seed are sown in which the seedlings are raised. It is important component of a nursery. The points should be considered for a nursery bed are -

- a) Shape and size
- b) Types of the bed
- c) Surface of the bed

As a rule rectangular beds are preferred over other shapes. The width of the bed should 1.2 to 1.5 m. The width of the bed should be kept so that it can be weeded by a labour from both side without entering the bed. The length should be 12.5 m. However, standard bed sizes (1.2 m × 12.5 m or 4 ft. × 40 ft). The length may be kept smaller if sufficient space is not available.

### Types of bed

Three types of bed usually made

1. **Raised beds:** These beds are made in high rainfall areas. Raised bed of 10-15 cm above ground level are made of bricks, stones, bamboos or stands which prevent edges of the beds from crumbling during rains or while giving irrigation to the beds. These beds prevent waterlogging and drainage is also easy.
2. **Sunken bed:** Sunken beds are made in dry season. The objective of sunken bed is to allow outsider water to the bed area. These beds are always 15 cm deeper than normal ground level.
3. **Level beds:** Level beds are made in normal rainfall areas. These beds are easily irrigated by water can. The surface of nursery bed perfectly flat or should have slight chamber. In order to good drainage in the bed, surface dressing should be given. If the soil is heavy such drainage are made necessary.

### Preparation of nursery bed

Soil working in the bed is a very important operation. The object of soil operation in bed is to provide the most optimum conditions for seed to germinate and grow as healthy seedlings. However, the structure of a typical nursery bed is briefly described below:

1. The soil in the bed dug up to the depth of 40-50 cm.
2. The boulders large pebbles, rubbish were removed.
3. Spading, weeding and cleaning of the bed soil were done
4. The soil then taken out and left for few days (15-30 days) for weathering.
5. Well decomposed cowdung is to be mixed with soil.
6. Then the soil was sterilized with formalin and BHC.
7. Then the soil was properly rolled and packed
8. Then the 15 cm raised and 90 cm wide bed along with 30 cm wide drains around the bed was prepared with the portion of expanding length.

9. Final cleaning and finishing work were done to get ready for sowing seeds and/or when seedlings are of one week age. Then they are transplanted in the transplanting bed.

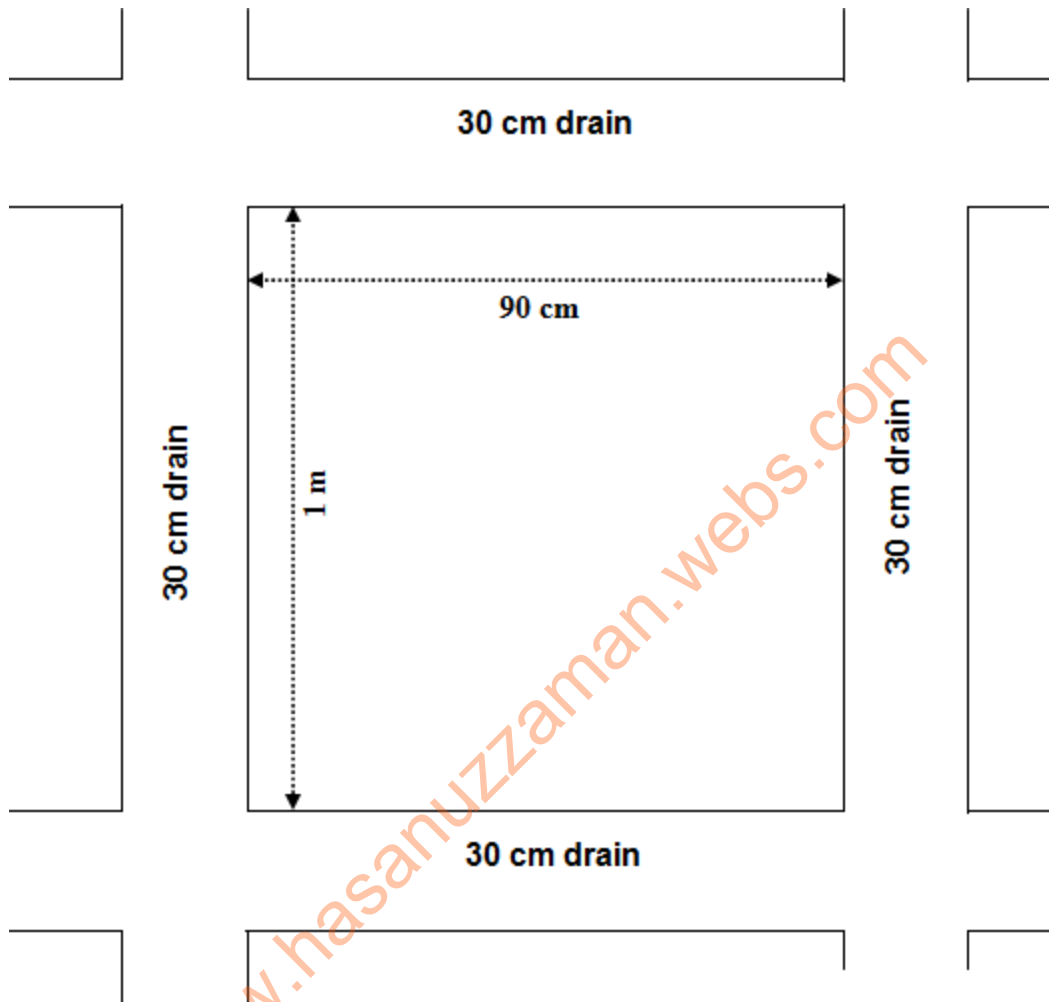


Fig. A Nursery bed