



Bill of Materials - Forest Creation

Area - 600 sq m

Number of saplings per sq m - 4

Total number of saplings - 2400

Execution time - 8 to 10 days

Working hours per day - 8





Bill of Materials - Forest Creation

1. Biomass material: Shredded grass

Shredded wild grass - Alpha-alpha, any crop residue or local wild grass.

Purpose:

Perforation. Food for microbes and it helps with circulation of air and water in the soil. Helps roots grow easily and adds organic matter to the soil.

Quality:

Shredded fine, no impurities, no/minimal seed content, dry and old. It is required to be shredded fine as then it will decompose easily in soil. Should be brown and old for easier decomposition.

Quantity:

18 Cubic Meters.





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2. Biomass material: Clay soil

Red clay soil being used for construction purposes at HIAL.

Purpose:

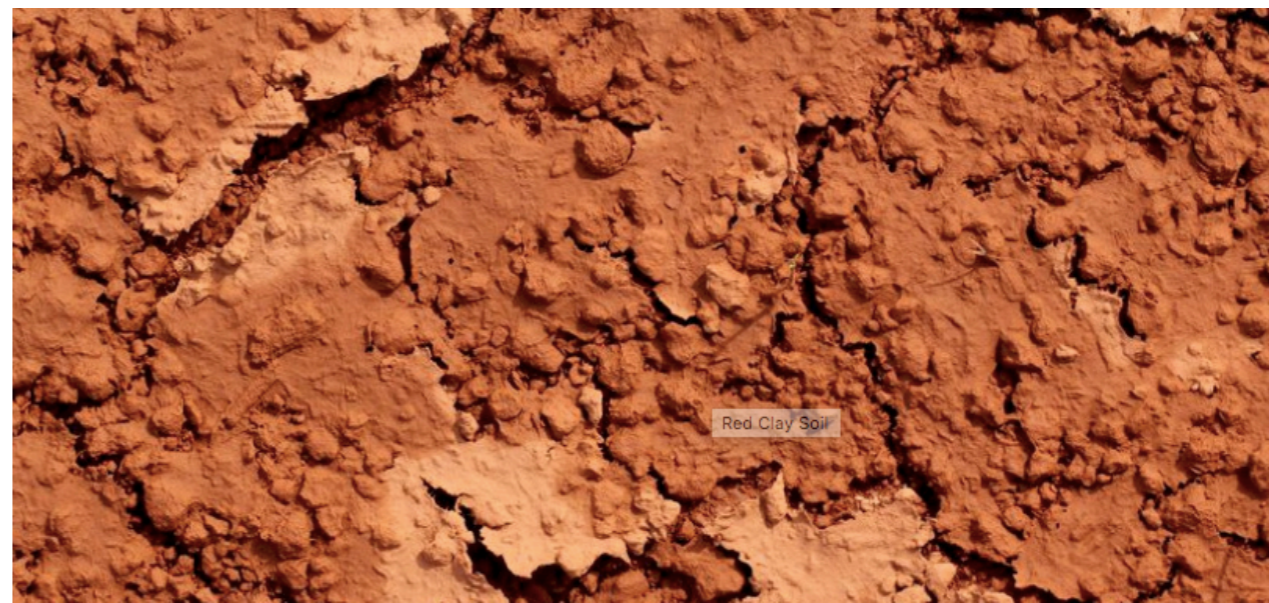
Water retention. It will give more structure to the soil, and will make the coarse sand hold together well.

Quality:

No waste and impurities.

Quantity:

18 Cubic Meters.





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3. Biomass material: Farm yard manure

Farm yard manure.

Purpose:

Medium for microbes to grow.
Nourishment. Water retention.

Quality:

Local cattle manure. Aged - 6 months - 18 months. Dry . Odourless. Dried under shade. No inorganic additives/impurities. No big clumps. It can be a mix of cows and goats.

Quantity:

24 Cubic Meters





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4. Soil Microbiology Enhancer

Jeevamrutha or Compost Tea.

Purpose:

Introduce healthy beneficial microbes into the soil.

Quality:

Prepared only according to Dr. Subhash Palekar's zero budget farming method. To be procured in standard 50 L drums. No impurities or adulteration. Fresh dung and old urine rule. Desi cows.

Alternative - Compost Tea prepared as per Afforestt's documentation.

Quantity:

300 Liters.





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5. Mulching material

Mixture of leaves+twigs+thin tree branches+grasses.

Purpose:

To protect the soil from sun and help healthy microbes flourish.

Quality:

No impurities. Mixture of locally collected organic matter from around trees, fields, undisturbed locations and wildernesses. Non-native residues such as exotic pine needles to be completely avoided.

Quantity:

36 Cubic Meters.





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6. Saplings

Saplings of native species.

Purpose:

Forest creation.

Quality:

100% indigenous species.

Bag sizes (inches): 6X4, 6X6, 4X4, 6X7, 6X8, 8X8, 8X7.

Young saplings 1 years to 2 years of age.

Strong, sturdy, upright main stem.

Quantity:

2400 for forest creation plus 100 extra to cover any damage during transportation and handling.





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7. Species identification boards

Laminated A4 sheets, wooden boards or metal.

Purpose:

Species identification.

Quality:

Water-proof and sturdy.
Metal, wood or paper.

Quantity:

2 per specie.





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8. Support sticks

Bamboo or native wood sticks.

Purpose:

Support the young saplings. Identification for maintenance staff and visitors. Helps keep a count during monitoring of survival.

Quality:

5 feet high. 1-1.5 inch diameter. Round, Strong, Sturdy and Straight. Sticks of non-native trees should not be used.

Quantity:

Same as number of saplings i.e. 2400.





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9. Jute rope or strings

Jute rope or strings in bundles.

Purpose:

To tie the plants to the support sticks.

Quality:

Thin biodegradable jute string. 100 meters for every 100 sq meter mound.

Quantity:

600 meter.





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10. Machinery: JCB Backhoe loader

Machinery for soil preparation.

Purpose:

For mixing the biomass materials ie shredded grass, clay-soil and manure with each other.

Quality:

Experienced operator required for efficient use.

Quantity:

1.





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11. Machinery: Tractor

Tractor with Hydraulic Dumper Trolley.

Purpose:

For moving biomass and other materials around.

Quality:

Experienced operator required for efficient use.

Quantity:

1.





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12. Machinery: Tiller

Tilling machine.

Purpose:

For mixing the biomass into the soil.

Quality:

Experienced operator required for efficient use.

Quantity:

1.





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13. Marking material

Limestone powder.

Purpose:

De-marking the forest area.

Quality:

We should keep it readily available in order to mark and re-mark during earthwork. 5 kg required for every 100 sq meter mound.

Quantity:

30 kg.





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14. Tool: Hoe

Hoe.

Purpose:

Spreading biomass.

Quality:

Metal blade material should be sharp and strong. Long wooden handle is preferable.

Quantity:

10.





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15. Tools: Rake

Gardening Fork or Rake.

Purpose:

Earth levelling.

Quality:

Rake material should be strong and be able to move large pieces of soil. Long wooden handle is preferable.

Quantity:

10.





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16. Tools: Hand trowel

Hand Trowel or scoop.

Purpose:
Plantation.

Quality:
Metal blade should be pointed, scoop-shaped and strong. Wooden or Plastic handle is preferable. .

Quantity:
10.





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17. Tools: Pans

Metal or plastic pans or cane baskets.

Purpose:

Spreading biomass and saplings.

Quality:

Durable and light.

Quantity:

10.





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18. Tools: Buckets and Mugs

Bucket and Mug Pairs (each 20 Liter bucket paired with 1 liter mug).

Purpose:

Spreading jeevamrit or compost tea, and/or dipping plants in water during plantation.

Quality:

Durable and light.

Quantity:

10 pairs.





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19. Tools: Cutters

Plastic cutters or knives.

Purpose:

To cut the sapling bags.

Quality:

Paper cutter knives are preferable.

Quantity:

10.





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20. Tools: Dustbins

Dustbins or bags for disposing plastic/inorganic waste.

Purpose:

Waste disposal.

Quality:

Big dustbins or big jute bags.

Quantity:

10.





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21. Safety gear: Gloves

Cut resistant gloves.

Purpose:

To protect the hands.

Quality:

Polyurethane Coated Gloves .

Quantity:

20.





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22. Safety gear: Safety shoes

Safety shoes

Purpose:

To protect the feet.

Quality:

Standard safety footwear.

Quantity:

Same as number of workers ie 10.





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23. Safety gear: Helmets

Safety helmet.

Purpose:

To protect the head.

Quality:

Standard safety helmet.

Quantity:

Same as number of workers ie 10.





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24. Safety gear: Safety jackets

Safety jackets.

Purpose:

Easy identification during machinery movement.

Quality:

Standard safety jacket.

Quantity:

Same as number of workers ie 10.





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25. Safety gear: Safety masks

Safety masks

Purpose:

Protection against dust.

Quality:

Standard industrial dust masks.

Quantity:

Same as number of workers ie 10.





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26. Safety gear: Safety glasses

Safety glasses

Purpose:

Protection for eyes.

Quality:

Standard Safety goggles with side shield.

Quantity:

Same as number of workers ie 10.





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27. Safety gear: First aid kit

First aid kit.

Purpose:

Used in case of cuts, bruises or common injuries.

Quality:

Well equipped general first-aid kit.

Quantity:

1.





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28. Watering equipment

Hose pipes, showers and watering cans.

Purpose:

Provide moisture to the forest.

Quality:

Good quality PVC garden pipe is preferable. It should be flexible and crack proof. Showers are compulsory

Quantity:

It should cover the entire forest .





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29. Cover for biomass and mounds

Covers.

Purpose:

Tarpaulin Sheets.

Quality:

Protect the biomass and the mounds prepared from sun and rain.

Quantity:

Enough to cover the entire biomass material, and if mounds need protection before plantation.

