Trees for the Future Planting Methodology

[See the trees planted in Singida in this seasonal planting plan. These trees are both recommended by ICRAF and selected by farmers.]

TREES Forest Garden Approach is an adaptable methodology. Although we have recommended species and approaches that farmers learn during training, ultimately the farmer designs their own Forest Garden. During Forest Garden Design training, TREES technicians utilise a participatory process to engage with farmers to further adapt the design to align with farmer's recommendations. This results in a design, crop selection, and placement that all farmers are committed to implementing because they have ownership over the design process. The basic building blocks of all forest gardens are outlined below.

Living Fence/Green Wall

Green Walls consist of three rows of agroforestry trees that surround the entire perimeter of the field. The purpose of the green wall is to protect the field from animals, wind and water erosion, stabilize soils, fix nitrogen in soils, provide organic matter for composting, and provide additional food crops and animal fodder. The two outer rows consist of a mixture of agroforestry trees indicated in the Planting and Harvesting Plan. Additional seedlings are grown in later years for transplanting to fill in missing spaces of those that may not survive. The inner third layer of the green wall consists of a row of timber trees that support the structure of the outer layers and provide a long term investment and may be sustainably harvested in 30 plus years.

Alleycropping

Alley cropping segments the field with nitrogen fixing and food crop trees. Alley cropping improves the soils, provides organic material for composting and mulching, captures and infiltrates rainfall, and also provides animal fodder and food.

Fruit Trees

Fast growing, quick producing fruit trees including *Papaya and Passion Fruit* were planted throughout the field. These trees will provide a valuable food source and income within the first three years. In addition, slower growing fruit trees including *Avocado and Mango* were planted in the field and will produce after the third year.

Staple Crops

In the alleys between trees, farmers have the choice of growing staple crops or expanding vegetable permaculture. Either way, these alleys provide a secure food source and income. Farmers plant a variety of crops in these alleys including: *Beans, Cassava, Maize, Sweet*

Potato, and other. Some alleys may be split with various staple crops. In addition, some farmers may choose to plant horticulture crops in a portion of the alleys including tomatoes, watermelons and pumpkin.

Market Garden

The market garden provides a space for continuous horticulture production, including after the all trees are fully grown. Crops grown in this area are for home consumption and/or sale including: *Okra, Carrots, Onion, Kale, Sunflower, Tomato, Watermelon, and Pumpkin.* Market gardens produce during different seasons: including wet and dry season crops. Some of these crops will also be grown in the staples alleys during the first 3 years of production and some staple crops could be grown in this area post 5 years.

Composting and Mulching: Farmers develop one open pit compost pile within the first year and a second later in the project. The compost includes a mixture of available organic matter, manure (if available) and is continuously turned and kept at optimal moisture to ensure aerobic decomposition. Farmers are trained on compost development and can additionally harvest leaves, from trees in the green wall and alleys, to mix into the compost to add organic matter. In addition these leaves make excellent mulching material for fruit trees.

Aggregation and Processing: With increased production of fruits and vegetables, there is an opportunity to aggregate the production of these smallholder farmers for processing or sale to a higher market.

Value added products: High protein animal feed can be made from species in the green wall. In addition, flowering trees will provide an ideal environment for beekeeping. These food and income generating activities can be introduced later in the project.