Small-scale timber stand management techniques: a case study of woodlots in Isangati, Tanzania

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Farm System Diagram – Isangati, Tanzania
This farm system diagram outline follows the methods described in Beets (1990).

Physical and Bio Factors
Climate: Avg. rainfall is 1,100-2,700mm. Temperate Climate - Avg. temps are: Jan-May 12-21C, Jun-Aug 12-19C, Sept-Dec 12-21C. Large rain season is Mar-May and small rain season Nov-Jan. 
Soil: Fertile, of volcanic origin, often acidic and sandy. 
Topo: 2,000m, steep slopes prevent mechanization and require erosion control work. High elevation = high rainfall. 
Weeds: Weed each crop with hand hoe 2 times before harvest. Harvest crops twice per year. 
Requests and Diseases: Insecticide is used and a spray is used for many crops to protect them from the cold.

Socio-Cult and Socio-Econ
Tenure: Children get land handed down to them from their parents once they are old enough or get married. 
Land Use: Agriculture, Forestry, Aquaculture (2 man-made ponds). 
Agriculture: Young people moving to urban areas. 
Migration: Land is obtainable, so the more farmer’s work, the more crops they can use for home consumption or sales. 
Attitude/Goals: 
Co-operation:

External Political and Institutional Factors
Heller International: Conduct seminars dealing with proper livestock management practices, beekeeping, and home gardens. Over 30 villagers have received modern breeds of cattle through the program and 5 modern beehives. 

Household
Family Composition: Father, mother, 3 boys, and 3 girls. 
Health and Education: Health dispensary in the village. Most villagers only finish primary school. 
Food Preferences: Ugali (made from maize flour and is a thick porridge of dough like consistency) typically served with a bean sauce and a side of leafy greens, avocados, or sour milk. 

Family Labor: On Farm
Farm: Weeding, planting, harvesting, spraying, carrying manure to farm. 
Capital: Axes, hoes, machetes

Family Labor: Off Farm
Women: Cook, wash clothes, gather fuelwood, fetch water, take care of children, process agricultural products. 
Men: Tend to livestock, and handle business negotiations (sales of crops/timber)

Comunal Grazing: Kids graze their family’s livestock on the local soccer field. Some cattle are tethered or shepherded during the day.

Fodder
Crops
Good
Maize 
Beans 
Potato 
Green Pea 
Cabbage 
Cash
Peythrum
Crop Residues: Damaged vegetables
Fodder-Grasses, banana plants, leaves, crop waste
Livestock
Avg. Number of Animals 
Use
Chickens - 5
Eggs
Cattle - 2
Milk
Goats - 2
Meat
Pigs - 1

Manure – From stall fed livestock. Use cut and carry system to feed animals. Fill large bags with manure and carry to farm. 
Household waste

Man get money from meat, timber, selling livestock and trade jobs (brewing, shoe repair, building)

Woman market surplus maize, beans, leafy greens, milk and cooked food to sell during market day

Market
Prices
Demand

Fuel wood supply: Woman either walk 3km to the nearby forest preserve and illegally gather fuelwood or collect from family woodlot

Government Services: Agriculture Development Project (ADP): Supply fertilizer

Education: Little knowledge of exotic tree species or agroforestry practices. In-depth knowledge of planting crops.

Credit Facilities: There is a group consisting of almost 30 people which is set up for people to borrow money. People outside of the group cannot.

Market

Mbeya town is 30km from the village. Market day is every Saturday in the village. People from town come to buy/sell goods and people from nearby villages come to buy/sell surplus goods.

Labor Demand and Supply:
Low labor demand Aug-Sept 
High labor demand Apr-July

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