Nansanga Profile

Population and Land Use.

Settlements in Nansanga are linearly aggregated in plateau area along the Serenje Mapepala road, with densely populated Mukomansala, Mapepala, Shindaila, and Nabowa villages and along Chimupati - Mutale - Kabundi - Kabeti and Masunga areas. The population within the 100,000 ha Nansanga Farming Block is about 427 households with an average of six people per household. The area away from the road is sparsely populated. Other major settlements occur in the plateau areas close to Serenje where densely population also occurs. The main language group is Lala.

Agricultural production is the prime occupation with minor fishing activities in the Kasanka areas. Agriculture can be said to be the major land use of the district. Commercial agriculture is found in the district with emphasis on the production of Tobbaco and Maize.

Agriculture

Agriculture is the major economic activity in the district. A number of commercial producers are known to grow maize, tobacco, cassava, and groundnuts. These are mostly to be found in the TAZARA Corridor along the TAZARA rail-line. The majority of the people in the Nansanga Farm Block area are small-scale producers growing mainly maize, finger millet, sorghum cassava, groundnuts and beans.

Within the survey area only a few farmers own livestock (cattle and goats). Some farmers keep local chickens at subsistence level. Important agricultural farms within the survey area include the commercial property employing more than 70 workers the Mutende Mumpanga Farm at Nkulumashiba growing coffee, running fish ponds and a ranch, and Sherrif’s Farm growing tobacco, agroforestry and commercial groundnuts production >30ha.

Communications & Infrastructure

Location of Area

The proposed Nansanga Farm Block is located between longitudes 29°46’ E and 30°12’ E and latitudes 12°35’’ S and 12°55’’ S north-west of Serenje about 45km to 85km for the nearest and furthest points from Serenje respectively on the Serenje - Mapepala - Nabowa road and Lube almost 150km. The southern boundary is the Nkulumashiba stream while the western boundary is the Luwombwa in areas north of the Kanshinke and the Munte in areas south of the Kanshinke, and Mushingashi River as the northwest boundary and Lube River.
Roads
Nansanga area has two feeder roads connecting it directly to Serenje boma. One road runs from the boma to Mapepala and another road crosses the Munte River from Mapepala and makes a loop route back to Serenje town through Mutale Kabundi and Luniya, and can also be linked to the Great North Road at Chimupati. The settlement pattern is linear along the road. Rivers Luwombwa in the north and Munte in the south connect the two areas forming the Nansanga Farming Block. For example, a bridge connects Mukomansala village (Chief Muchinda’s residence) to Mutale Kabundi and Luniya, while Nabowa is connected to Kunda Mushili through a bridge at Luwombwa river. Water communication is not developed.

Infrastructure

Serenje town has a relatively developed infrastructure consisting of road and transport, schools, tele-communications, markets, stores, electricity, hospital, clinics, input supplies and banking facilities. The district council provides services and facilities such as water supply, and residential areas. However, outlying areas away from Serenje such as Mapepala, Nabowa, Masunga and Kabeta have poorly developed infrastructure. They lack infrastructural facilities telecommunications and markets.

Environment

Climate

The climate of the district is strongly seasonal with rainfall starting end-of November, lasting until mid April. The total length of the growing season at Serenje is 135 days, with a mean annual rainfall of 1161 mm. The closest meteorological station is Serenje at an altitude of 1384 metres above sea level.

General Conditions

The rainy season starts end November continuing until mid March in the Serenje central and northwest. From June to August, it is cool and dry. High temperatures are recorded during the dry season starting in August reaching the highest in October. A brief cold season is recorded during June and July.
TABLE 1

CLIMATIC SUMMARY FOR SERENJE (Latitude 13° 14'S, Longitude 30° 13'E, Altitude 1384m)

<table>
<thead>
<tr>
<th>Month</th>
<th>Mean Temp (°C)</th>
<th>Absolute Max Temp (°C)</th>
<th>Absolute Min Temp (°C)</th>
<th>Frost Days</th>
<th>Relative Humidity %</th>
<th>Rainfall Total (mm)</th>
<th>Rain Days ≥10 mm</th>
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</table>

Data adapted from Climatological Summary Table 48 for Serenje by Muchinda (1985).

Rainfall

The mean annual rainfall at Serenje of 1161 mm is highest in the district, agro-ecological subzone (18) and is slightly similar to subzone (24- E) with 1159mm covering Nansanga Farm Block area. There are two rainfall peaks, one in December and the other in February. Serenje has a high average number of 0.4 to 10-mm rainy days (42). Occasional dry spells lasting up to 10 days are common during the growing season in subzone 18.

Air Temperature.

The mean annual temperature is 19.0°C. The absolute minimum temperatures during the coldest month (July) is -3.2°C and absolute maximum temperatures reaches 36.0°C in October, (Muchinda, 1985).

Evaporation

Potential Evapotranspiration (PET) is highest in October (151 mm) and is more than mean monthly rainfall from May to October. During the rainy months December to March, evaporation is lower than precipitation.
Surface Drainage.

The Ng’answa, Muswhingashi, Munte, Nkulumashiba and Lube are major watersheds which support the Luwombwa river. Drainage is hill and plateau influenced and has highly dendritic river network patterns.

Geology

Field observations indicate that most of the hills of the area consist mainly of quartzitic sandstones confirming Moore’s (1976) report. Fine grained phyllitic siltstones and shales were located as scattered occurrences. Frequent shallow areas with laterite beds or gravelly topsoil or sheets are observed in the whole Farm Block area especially towards the rivers at slope break. Quartzitic outcrops are common on hills.

Vegetation

Miombo woodland is the major vegetation type found both in the hills and plateau areas. Grassland vegetation is found in the dambos. Patches of Chipya vegetation is found as an inclusion approaching the Luwombwa River in the northern half of the survey area. Major tree species in the Miombo include Brachystegia and Julbenardia. Grassland species include hyparrhenia and papryrus species. Chipya vegetation is mainly dominated by scattered fire resistant accacia species.

Soils

Soil Studies.

Woode (1980) described the soils of the area, in the Reconnaissance Soil Survey of Chief Muchinda’s Area at a 1:50,000 scale. It comprises deep, well-drained sandy loam to sandy clay soils having a clear clay increase (classified as Mutumbi sandy loam) with inclusions of well-drained sandy clay loam to clay (classified as Kabundi sandy loam). Excessively drained sand soils at hill footslopes were classified as Piedmont Soils. Moderately well drained soils were classified as Mutale sandy loam. Imperfectly drained soils were classified as Kapumbu sandy loam or as Teketeke sand. Poorly to very poorly drained soils were classified as Kashiki loamy sand. Other soils found were the shallow soils and dry dambos. Elsewhere, Mansfield et. al., (1976), classified the soils as belonging to Milima and Nkolemfumu Zambian soil series, which were deep and mostly well drained, though shallow phases were observed to occur in the major plateau areas. The soils were noted to be very strongly acidic, and having low to high base saturations.
**General Characteristics of the Soils**

The soils of this part of the Nansanga Farm Block are generally deep to moderately deep and well drained. Shallow soils are found on slope breaks and hills foot slopes. Poorly drained soils occur in dambos, and flood plains. The soils fall into five major mapping units.

The soil textures are mainly sandy loam to loamy sand in the topsoil (0-25cm depth). Subsoil textures are mostly sandy loam to sandy clay loams and sandy clay.

**Surveys and Infrastructure Development**

**Electrification**

The Farm Block has three proposed electricity supply lines which are intended to service both major farming activities in the western region as well as the small scale agriculture in the east.

The construction works of 95 km, 33 kV overhead line from Serenje Boma to Kabeta 2.5 MVA, 33/11 kV substation via the Core venture was completed by March 2006.

The electrification is targeted at covering the entire farm block for easy tapping by individual farms. The overhead line runs from Serenje substation through Lumpapa School to Chimupati School on the Great North road, before branching northwards at Mulilima.

**Environmental Impact Assessment**

The environmental Impact Assessment for the Nansaga Farm block was conducted and the report gives an overview of the impacts of the following activities on the environment:

- Construction of dams and water reservoir on both up and down streams of the major rivers
- Construction of roads and electricity grids
- Agricultural activities
- Planned and unplanned human settlements
- Service centre
- Factory and agro-processing plants
- Social-economic activities

**Irrigation Development Plans**
Construction of eight dams is proposed in the entire farm block. Six of them are sited on Luombwa River and its tributaries and one on Kasanka River.

Roads and Bridges
Cadastral Surveys
Demarcation Surveys
The Farm Block was partially demarcated