

Soil, Agro-climatic conditions and recommended crops for Mahaweli B Zone

Mahaweli System B covered Polonnaruwa and Batticaloa districts in dry zone in Sri Lanka. This agro-climatic region is the "DL1c". Even though rainwater is a limiting factor in this part of the country for year round crop production, diversion of Mahaweli water to Maduruoya reservoir have made it possible to cultivate various agricultural crops. Major soil type contained Mahaweli system B is Non Calcic Brown soil (NCB). It is sandy to sandy loam in texture and consisting very low organic matter content. Retention of soil fertility in this soil is also very poor. Comparatively low soil depth and underneath hard pan is shown imperfectly drain characteristics. Other than the NCB, Alluvial soil and Reddish Brown Earth soil also occurred in this area.

Climate

The expected annual rainfall at the 75% probability level in this region is 900mm and shows a uni-modal monthly rainfall distribution. Major rainfall for this region is Northeast monsoon in October to December and this season called as "Maha" season. Dry spell occurred in rest of the period, hence water supply through ground water resources is essential for year round cultivation.

When the Wet zone of Sri Lanka experiences Southwest monsoon rains, the same monsoonal wind blows over the Dry zone as a warm and dry wind. Hence, crop water requirement during this period, May to September (Yala season) is very much higher than that of the other times of the year. The general wind speed of the Dry zone is 3-5 km/hr. However, during said period, it may reach even 12-15 km/hr.

The average maximum temperature in the Dry zone ranges from 29 to 38⁰C. The highest values are being recorded during the period of late July to late September.

The average minimum temperature is ranged from 20 to 26⁰C where the lowest values are generally observed during the period of December to February, a common phenomenon for the entire island.

The day time relative humidity in the Dry zone is generally ranged from 50 to 75% where as night time values may reach even up to 90%. Night and day temperature difference is 5⁰C.

Recommended crops for uplands

In upland areas perennial crops, seasonal field crops and vegetables can be grown as the availability of water.

- Perennials such as Lime, Mango, Guava and Katu Anoda can be grown in normal condition
- If enough water available, Coconut, Banana, Papaw, Passion fruit and Dragon fruit can be grown
- If water scarce and soil top is rock knob, timber crops and Glyricedia can be grown

- During Maha season Field crops such as Maize, Chillie, Ground nut and Vegetables can be grown under rain fed condition
- During Yala season if enough water available seasonal field crops such as Chillie, Soya, Onions and Vegetables can be grown
- Pineapple can be cultivated in lands which have slightly acidic in soil with adequate water availability.

Commercial Dairy, Goat and Poultry farming also can be integrated successfully, towards the sustainable development.

Precautions:

- Adding organic manure to improve soil fertility
- Considering proper drainage plan
- Rain water harvesting (Ponds, "Pathaha" , Ferro-cement tanks, etc.)
- Micro irrigation for increase irrigation efficiency
- Wind breaks, Alley cropping and mulching

Soil, Agro-climatic conditions and recommended crops for Mahaweli L Zone

Mahaweli System L covered Anuradhapura and Mulativu districts in dry zone in Sri Lanka. This agro-climatic region is the "DL3". Even though rainwater is a limiting factor in this part of the country for year round crop production, minor tanks and agro-wells have made it possible to cultivate crops. Major soil type contained Mahaweli system L is well drained Reddish Brown Earth (RBE). Its soil depth is deep and texture is sandy clay loam. Retention of soil fertility in this soil is high. Workability in this soil is poor because soil is very hard when it is dry and soil is sticky when it is wet.

Climate

The expected annual rainfall at the 75% probability level in this region is 900mm and shows a uni-modal monthly rainfall distribution. Major rainfall for this region is Northeast monsoon in October to December and this season called as "Maha" season. Hence, irrigation water is supplied to utilize total cultivated land all over the year.

When the Wet zone of Sri Lanka experiences Southwest monsoon rains, the same monsoonal wind blows over the Dry zone as a warm and dry wind. Hence, crop water requirement during this period, May to September (Yala season) is very much higher than that of the other times of the year. The general wind speed of the Dry zone is 3-5 km/hr. However, during said period, it may reach even 12-15 km/hr.

The average maximum temperature in the Dry zone ranges from 29 to 38⁰C. The highest values are being recorded during the period of late July to late September.

The average minimum temperature is ranged from 20 to 26⁰C where the lowest values are generally observed during the period of December to February, a common phenomenon for the entire island.

The day time relative humidity in the Dry zone is generally ranged from 50 to 75% where as nighttime values may reach even up to 90%.

Recommended crops

Drumstick, Mango, Lime, Guava and Katu Anoda are major perennials can be cultivated productively in this region. Banana and Papaw can be continued at water available lands.

Chillie, Maize, Thibbatu and other vegetable can be cultivated in this region. It can be cultivated under drip irrigation systems coupled with agro-wells. The advantage of this system is the capability of "market oriented crop production". Gliricidia can be grown as "Alley cropping" as a wind break and to reduce solar heat can be used as manure, mulch and bio-energy production.

Timber crops can be success in lands which has water limitations.

Commercial Dairy, Goat, Poultry and Piggery farming also can be integrated successfully, towards the sustainability of farm output.

Soil, Agro-climatic conditions and recommended crops for Mahaweli Rambaken Oya Zone

Mahaweli System Rambakenoya covered Badulla and Ampara districts in dry and intermediate zones in Sri Lanka. These agro-climatic regions are "DL2a" and "IL2. Even though rainwater is a limiting factor in this part of the country for year round crop production, Rambakenoya tank have made it possible to cultivate agricultural crops. Soil types contained Mahaweli system Rambakenoya is Reddish Brown Earth (RBE) 70%, Non Calcic Brown (NCB) 20%, other 10%.

Climate

The expected annual rainfall at the 75% probability level in this region is 1400mm and shows a uni-modal monthly rainfall distribution. Major rainfall for this region is Northeast monsoon in October to December and this season called as "Maha" season. Hence, irrigation water is supplied to utilize total cultivated land all over the year.

When the Wet zone of Sri Lanka experiences Southwest monsoon rains, the same monsoonal wind blows over the Dry zone as a warm and dry wind. Hence, crop water requirement during this period, May to September (Yala season) is very much higher than that of the other times of the year. The general wind speed of the Dry zone is 3-5 km/hr. However, during said period, it may reach even 12-15 km/hr.

The average maximum temperature in the Dry zone ranges from 29 to 35⁰C. The highest values are being recorded during the period of late July to late September.

The average minimum temperature is ranged from 20 to 26⁰C where the lowest values are generally observed during the period of December to February, a common phenomenon for the entire island.

The day time relative humidity in the Dry zone is generally ranged from 55 to 75% where as nighttime values may reach even up to 90%.

Recommended crops

Mango, Lime, Guava and Orange are major perennials can be cultivated productively in this region. Banana and Papaw can be continued in lands which have highly available water. Pineapple can be cultivated in lands which has slightly acidic soil. Melon, Katu Anoda, Passion fruit and Dragon fruit are other fruits can be continued in this region. Gliricidia can be grown as "Alley cropping" as a wind break and to reduce solar heat can be used as manure, mulch and bio-energy production.

Timber crops can be success in lands which has water limitations.

Commercial Dairy, Goat and Poultry farming also can be intigrated successfully, towards the sustainable development of Mahaweli system Rambakenoya.