

025**Sustainable development through proper land utilization****Case study: Ratnapura, Sri Lanka**

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Since the land is a scarce resource, the utilization of land effectively would be directly affected to the sustainable development of any country. A proper system of land utilization is very essential especially for a country like Sri Lanka which is very small in size and the majority of the people are depending on the land related activities such as farming, grazing etc. as their major source of income. Unfortunately, land is in the state of under utilization in Sri Lanka. This paper attempts to study the importance of the effective land utilization using Geographical Information Systems (GIS) for the sustainable development.

The study was mainly based on the data gathered from Ratnapura Divisional Secretary area. The area is consisting with natural vegetations such as forests, shrubs. and man -made cultivation such as tea, rubber, paddy. Also the area has a high economic value and it is well known for natural disasters such as floods and earth slips. Primary data was collected using semi-structured questionnaires, interviewing people and relevant officers and field surveying using hand held Global Positioning System (GPS). The study supplemented with secondary data such as remote sensing satellite images, existing maps. GIS technique was used for the data analyses.

The study identified 4 major issues in the specified area.

1. 20 % of the total area is under utilization
2. 25 % of the total area is misused
3. 05 % of the total area is over utilized
4. Continuous loss of land due to the natural disasters

According to the results, the land has not used effectively in the area. 45% of the area is not used effectively. Since the country is very small, proper land utilization is very important. The study suggest that an immediate action should be taken to overcome the matter. And also it is very important to get the active participation of the general public to stop the loss of land due to natural disasters and for future decision making.

026**Performance of seedlings of tree borne oilseeds and their response to fertilization in problem soils**

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The aim of the present investigation was to screen the seedlings of tree borne oilseeds (TBOs) suitable for alkali and saline soils and to optimize their fertilizer requirement under different soil environments. A nursery experiment was conducted at Forest College and Research Institute, Mettupalayam with four TBOs viz., neem, pungam, simaruba and jatropa on three soil types viz., neutral, alkali and saline soils with four fertilizer levels (0:0:0, 100:75:100, 200:150:200 and 300:225:300 mg N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O seedling<sup>-1</sup>). The soils were sandy loam in texture with 195, 170 and 165 kg ha<sup>-1</sup> of available N; 13.6, 10.9 and 9.8 kg ha<sup>-1</sup> of available P; 182, 200 and 176 kg ha<sup>-1</sup> of available K and 0.48%, 0.33% and 0.30 % organic carbon for neutral, alkali and saline soils respectively.

The biometric observations viz., collar diameter, shoot, root and total dry matter production and root: shoot ratio were recorded at 180 days after sowing. The total dry matter production of neem, pungam, simaruba and jatropa (13.49, 12.19, 11.20 and 17.29 g seedling<sup>-1</sup>, respectively) in alkali soil was 88.9, 96.3, 75.0 and 64.9 per cent respectively as that of neutral soil. Application of 200:150:200 mg N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O seedling<sup>-1</sup> (N,P,K) excelled all other levels for neem (15.37 g seedling<sup>-1</sup>), pungam (14.03 g seedling<sup>-1</sup>) and simaruba (12.84 g seedling<sup>-1</sup>) which has resulted in 40.0, 50.2 and 46.1 per cent increase over control. With regard to jatropa, the highest total dry matter was recorded with