Geospatial site suitability of medicinal plants in Chang Mai province, Thailand

Huma Shahzada and Nitin. K. Tripathi

Asian Institute of Information Technology, Thailand

Medicinal plants play an important role in the health care of people around the world, especially in developing countries. The demand for Medicinal plants will continue to increase in developing and industrialized countries because of population growth and awareness about the benefits of natural products to provide economical, safe and effective alternatives to expensive industrially synthesized drugs. Information should be produced on the soil and environmental conditions to which they are adapted, systems in which they can be grown, nutrient management, harvest techniques and processing. Attention should also be given to the potential danger of pests and diseases cropping up with intensive cultivation of medicinal plants.

For the suitable sites multiple parameters need to be considered. The specific criterion taken for this research was soil drainage, soil texture, soil pH, humidity, temperature, rainfall, slope and digital elevation model. Chiang Mai Province was chosen the study area because of its diversity of forests and capacity to grow many medicinal plants. The Remote Sensing and GIS was applied as a technical method for better visualization and interpretation of suitable sites for selected medicinal plants. The medicinal plants selected were of great importance because of their medicinal use. The knowledge of all those medicinal plants was acquired from the local community. Also the expert knowledge was incorporates in the GIS model by the Analytical Hierarchy Process. Both of the interaction shows their interests in the present research.

The Suitability analysis shows some surprising results. Like 90% of the province was found suitable for Turmeric Plant where as for basil plants and Aloe Vera plants 31.19 % and 31.57 % area were the calculated suitability in Chiang Mai Province. Macadamia Nuts plant suitability was found to be 44.97% of total area and 42.72% for Green Tea Plant. The Chiang Mai Province is found to be potentially suitable for all these plants and can generate good GDP if it is planned in the future.