

Assessment of Land Suitability for Tea Cultivation Using Geoinformatics in the Mansehra and Abbottabad District, Pakistan

Authors : Nasir Ashraf, Sajid Rahid Ahmad, Adeel Ahmad

Abstract : Pakistan is a major tea consumer country and ranked as the third largest importer of tea worldwide. Out of all beverage consumed in Pakistan, tea is the one with most demand for which tea import is inevitable. Being an agrarian country, Pakistan should cultivate its own tea and save the millions of dollars cost from tea import. So the need is to identify the most suitable areas with favorable weather condition and suitable soils where tea can be planted. This research is conducted over District Mansehra and District Abbottabad in Khyber Pakhtoonkhwah Province of Pakistan where the most favorable conditions for tea cultivation already exist and National Tea Research Institute has done successful experiments to cultivate high quality tea. High tech approach is adopted to meet the objectives of this research by using the remotely sensed data i.e. Aster DEM, Landsat8 Imagery. The Remote Sensing data was processed in Erdas Imagine, Envi and further analyzed in ESRI ArcGIS spatial analyst for final results and representation of result data in map layouts. Integration of remote sensing data with GIS provided the perfect suitability analysis. The results showed that out of all study area, 13.4% area is highly suitable while 33.44% area is suitable for tea plantation. The result of this research is an impressive GIS based outcome and structured format of data for the agriculture planners and Tea growers. Identification of suitable tea growing areas by using remotely sensed data and GIS techniques is a pressing need for the country. Analysis of this research lets the planners to address variety of action plans in an economical and scientific manner which can lead tea production in Pakistan to meet demand. This geomatics based model and approach may be used to identify more areas for tea cultivation to meet our demand which we can reduce by planting our own tea, and our country can be independent in tea production.

Keywords : agrarian country, GIS, geoinformatics, suitability analysis, remote sensing

Conference Title : ICGDMRM 2018 : International Conference on Geomatics, Disasters Management and Rescue Maps

Conference Location : Dublin, Ireland

Conference Dates : August 16-17, 2018