World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:8, No:10, 2014

Remote Sensing and GIS Integration for Paddy Production Estimation in Bali Province, Indonesia

Authors : Sarono, Hamim Zaky Hadibasyir, dan Ridho Kurniawan

Abstract : Estimation of paddy production is one of the areas that can be examined using the techniques of remote sensing and geographic information systems (GIS) in the field of agriculture. The purpose of this research is to know the amount of the paddy production estimation and how remote sensing and geographic information systems (GIS) are able to perform analysis of paddy production estimation in Tegalallang and Payangan Sub district, Bali Province, Indonesia. The method used is the method of land suitability. This method associates a physical parameters which are to be embodied in the smallest unit of a mapping that represents a mapping unit in a particular field and connecting with its field productivity. Analysis of estimated production using standard land suitability from FAO using matching technique. The parameters used to create the land unit is slope (FAO), climate classification (Oldeman), landform (Prapto Suharsono), and soil type. Land use map consist of paddy and non paddy field information obtained from Geo-eye 1 imagery using visual interpretation technique. Landsat image of the Data used for the interpretation of the landform, the classification of the slopes obtained from high point identification with method of interpolation spline, whereas climate data, soil, use secondary data originating from institutions-related institutions. The results of this research indicate Tegallalang and Payangan Districts in known wetland suitability consists of S1 (very suitable) covering an area of 2884,7 ha with the productivity of 5 tons/ha and S2 (suitable) covering an area of 482,9 ha with the productivity of 3 tons/ha. The sum of paddy production estimation as a results in both districts are 31.744, 3 tons in one year.

Keywords : production estimation, paddy, remote sensing, geography information system, land suitability
Conference Title : ICRS 2014 : International Conference on Remote Sensing
Conference Location : Osaka, Japan
Conference Dates : October 12-13, 2014