Applying GIS for mapping agricultural roads network in Felda Trolak Utara for oil palm plantation management

ABSTRACT

Malaysia oil palm industry is the leading commodities and one of the major contributors to the Malaysia economic after oil and gas sector. Malaysia and Indonesia palm oil plantations are the major commodity producer with Malaysia currently being the world's second largest area of oil palm after Indonesia. Together these two countries account about 84% of total world production and 88% of global exports. With the increasing price and demands for the Crude Palm Oil (CPO) and with the 4.69 million hectares that were planted with oil palm trees, plantation industry and estate managers has to look into the most crucial factor that will decide the yield and quality of the CPO that is being sent to the mill. Typically, palm oil plantations include production areas requiring supporting infrastructure such as buildings, roads and services/ management. When there is a better management of the roads in the estates, better Fresh fruit Bunch(FFB) and CPO quality will be sent to mill and processed. Road transport has a fundamental meaning for the sustainable agriculture. Poor quality and inadequate coverage of roads, lack of maintenance operations and outdated road maps continue to hinder economic development in the plantation. This work focuses on studying the present state of road infrastructure and its mapping in Felda Trolak Utara,Perak. The road infrastructure of the study area is studied by GPS and GIS based methodology. Data of road infrastructure characteristics were collected from GPS device and road infrastructure of the test sites then analyzed in GIS environment. The results of this study may be applied to road infrastructure mapping in oil palm plantation in general context, although with certain limits. In particular, the "noise" of road network occurred and need to rectify the topologies of the network.

Keyword: Agricultural roads; Oil palm; Mapping; GIS; Management