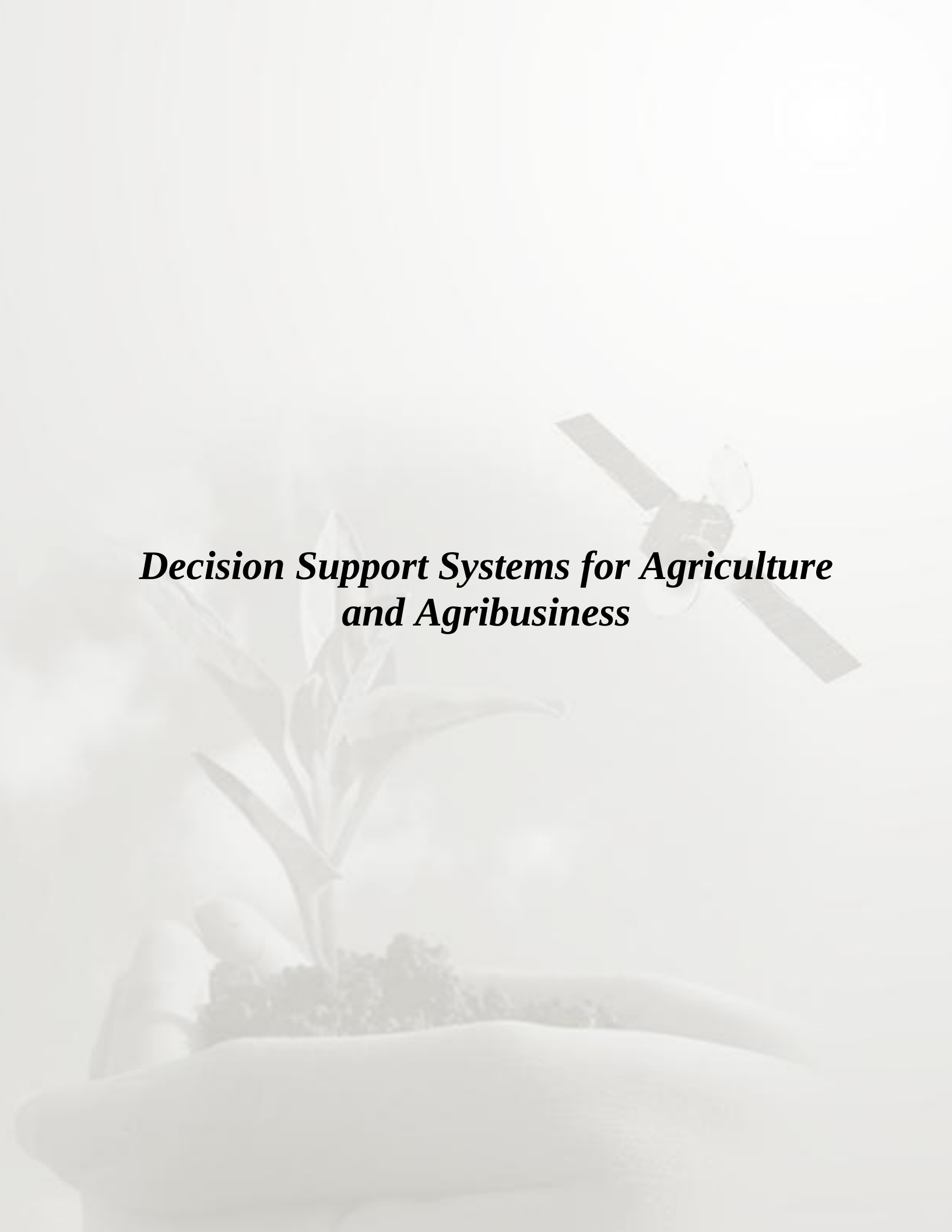

Decision Support Systems for Agriculture and Agribusiness

Design and Implementation GA-Fuzzy for Land Suitability Evaluation

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ABSTRACT

The 'Jala Peta Maya' (JPM) is a distributed spatial-database GIS browser, which treated as the distributed computing platform. It is a web-based application which extend the OGC Web Map Server (WMS) implementation specification and Web Feature Server (WFS) implementation specification to Java-based components. One of JPM's feature is a land suitability analysis.

Assessment of land suitability for a commodity is one important process that aims to assess the commodity suitability in a land that would be a priority for user selection. Assessment process should be done properly and efficiently, it is implemented with an intelligent agent system. This paper aims to describe how to build an agent system for conformity assessment and prioritization of commodities. and expected to assist the user in deciding the most suitable commodity to be a priority work for the user. In this system the assessment and selection carried out over a number of commodities by using the 9 selection criteria, i.e. wind speed, rainfall, sunlight intensity, the average temperature, air humidity, soil type, degree of acidity, groundwater depth, and height, with using a GA-Fuzzy evaluation. The output of the system is a rank based on a number of commodities and the total weight of the priority commodities of the selection criteria. The system test using commodity data shows that the designed system has been functioned properly and provide the correct results.

Keywords: *Genetic Algorithm, Fuzzy, Land Suitability, Jala Peta Maya, Distributed, GIS*