



"Gheorghe Asachi" Technical University of Iasi, Romania



IMPROVING FOOD SECURITY USING GIS DATABASE FOR MECHANIZED RICE FARMS MANAGEMENT IN NORTHWESTERN COTE D'IVOIRE

**Arthur Brice Konan-Waidhet^{1,3}, Brou Dibi^{1,3}, Konan Emmanuel Kouadio²,
Issiaka Savane¹, Valentin Nedeff³, Gabriel Lazar^{3,*}**

¹*University of Abobo-Adjamé, Abidjan, 02 BP 801 Abidjan 02, Côte d'Ivoire*

²*University of Cocody, Abidjan, 22 BP 582 Abidjan 22, Côte d'Ivoire*

³*"Vasile Alecsandri" University of Bacau, Calea Marasesti 157. 600115, Bacau, Romania*

Abstract

Agriculture is an axis of socio-economic development of the area of Denguele, Cote d'Ivoire. The evaluation of a project carried out as part of an agricultural campaign requires the handling of large amounts of heterogeneous data for effective monitoring. The design of an appropriate management tool is needed to organize and communicate information useful for decision making. The aim of this work is to provide a useful tool for a better management of information related to mechanical and motorized equipment used for rice cultivation capable to assure the food security in the application area. The solution involves the use of a geodatabase, which implicates the design and implementation of data in a relational database system. The data were modelled according to the Entity-Relationship formalism based on the MERISE method. The implementation of GIS under ArcGIS platform is used to display and map requests. The result of this work is a user-friendly interface that allows easy entry and querying the database for better decision making. This tool highlights the benefits of implementing a GIS application coupled with a relational database management system as part of a motorized agricultural campaign.

Key words: Cote d'Ivoire, Denguele, GIS, relational database, rice culture

Received: September, 2012; Revised final: December, 2012; Accepted: December, 2012

* Author to whom all correspondence should be addressed: e-mail: glazar@ub.ro; Phone +(40)234542411