

GIS Application to Establish Hydraulic Development Plans

**Prof. El Hassane SEMLALI, Mohammed EL FADILI and Tarik EL MAFTOUHI,
Morocco**

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ABSTRACT

GIS provide powerful tools for data acquisition, data processing and the spatial analysis of various geographical information. They are considered to be very useful for planning and decision making.

Hydro-agricultural development presents a great importance to the Moroccan national economy, accordingly it requires the introduction of new techniques to improve the results. In fact, studies of hydraulic development plans are conducted in order to define the limits of irrigation units (blocks), taking into account irrigation network, internal draining network and road network. These blocks' limits are conceived not only to respond to some economical and technical objectives, but should also satisfy some irrigation constraints for a better agricultural exploitation of the future parcels such as in a land consolidation project.

Knowing the basic data about the terrain, the parameters and the constraints to take into account, the present study consists on showing the contribution of GIS in the establishment of hydraulic development framework. An interface is developed using Avenue programming language of ArcView. The developed interface permits to integrate several constraints involved in hydraulic development. The interface allows introducing, processing and analyzing graphical and attribute information as well.

This GIS application could have a great contribution to the achievement and the management of irrigation projects in Morocco. Compared to the conventional method, the introduction of GIS in this kind of project shows that hydraulic development plans are established with more precision and within a reduced time.

CONTACT

Professor El Hassane Semlali
Institut Agronomique et Vétérinaire Hassan II, Filière de formation en Topographie
IAV, Filière de formation en Topographie
B.P. 6202
10101 Rabat
MOROCCO
Tel. + 212 37 68 01 80
Fax + 212 37 77 81 35
E-mail: e.semlali@iav.ac.ma ; ehsemlali@hotmail.com, web site: www.iav.ac.ma

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Mohammed El Fadili, Engineer in surveying
Administration de la Conservation Foncière, du Cadastre et de la Cartographie (ACFCC)
Division de la Cartographie, Avenue Hassan II, Km.4
Rabat
MOROCCO
Tel. + 212 37 29 50 34 / + 212 37 29 51 17
E-mail : el_fadili@caramail.com , Web site : www.acfcc.gov.ma

Tarik El Maftouhi, Engineer in surveying
Société Grands Travaux Routiers
Assila
MOROCCO
Tel. + 212 39 41 67 62

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