

GUEST EDITORIAL PREFACE

Special Issue on Remote Sensing Data for Agricultural and Environmental Geographic Information Systems

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Remote Sensing (RS) data and Geographic Information Systems (GIS) are widely recognized as supporting tools for land use planning, monitoring and management. These tools can be used in a multiscale/multilevel approach, going from a farm scale (management), to national policies (land use) and global directives (international markets). Combined together, RS and GIS provide an extremely useful tool for agricultural and environmental resource management.

Geographic Information Systems allow for the capturing, managing, understanding, querying, modeling and analyzing spatial data in order to discover relationships, patterns and trends in the form of (web) maps, reports and charts. Remotely sensed image data has increasingly been used to generate current and accurate information for spatial databases. The repetitive and synoptic coverage of the Earth surface by Remote Sensing, along with the collection of appropriate available data, enables

for a quantitative and qualitative inventory of agricultural and environmental resources. The GIS proliferation, for a large number of applications, increased the demand for the use of Remote Sensing as a data input source to spatial database development. Products derived from Remote Sensing have particularly attractive value because they can provide large area coverage in a digital format and can be used as a direct input for GIS-based applications.

The objective of this special issue is to present recent researches in the field of Remote Sensing as well as RS-GIS integration for agriculture, natural resources and land management. This special issue is dedicated to advanced Remote Sensing systems for data acquisition, as well as methods and tools for data processing and spatial analyses, in order to design and develop decision support applications, such as: (i) monitoring canopy water content using Modis daily data; (ii) lowland mapping of regions with hydro-agricultural potential, based on low

cost DEM method, applying surface topography analysis processes to better discriminate areas with stagnant and/or accumulated water; (iii) environmental monitoring based on sensors with an approach dedicated to provide data quality information; (iv) landscape planning based on the use of landscape metrics as indicators for agricultural management; and (v) identification of fire regime linked to savanna vegetation degradation through the use of statistical analysis on remote sensing data.

We have invited authors from around the world to present in this special issue their latest results and hope that their scientific contribution will have a real value for researchers in the field of agriculture, environment and information systems.

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