les dossiers d'AGROPOLIS INTERNATIONAL

Expertise of the scientific community

Geoinformation and Earth Observation for environment and territories

Populations and societies

aps, and more recently aerial photographs and satellite images, have long been used to support decision-making processes. These data are primarily aimed at 'rebuilding' an actual situation through projections, military maps, orthophotos, spatial maps and other maps. These information sources showcase the natural geographical area and, within it, highlight physical resources, human communities and their activities. Interpretation tools are obviously required to give meaning to the shapes, colours and symbols, etc. They can also provide support for the acquisition of many different types of information that could be mobilized in databases or via local know-how and testimony. They may be presented in the form of atlases and information systems.

With computer progress, it is assumed that unlimited power is available for data management. However, experience shows that the full potential of available geoinformation is only utilized when implemented for a targeted approach. This information thus simply serves as an 'intermediate tool' to support individual or collective analysis and debate. It can be used to model phenomena and put forward hypotheses on cause-effect relationships through the identification of key factors, indicators and criteria, whose relevance must then be confirmed. Exchange platforms facilitate data management to gain insight into relationships between activity systems, territorial footprints and impacts on resources. Once this work is done, the image and maps serve as communication tools that enable presentation of results in attractive and accessible forms.

Natural and sanitary risk maps, development plans, cadastral maps and models are all decision support tools. Online mapping can also fuel social discussions.

Geoinformation has thus enhanced the scientific process as well as project decision-making and management processes. This is the approach discussed and illustrated in the present chapter through many users and various applications.

Historians and geographers can analyse and understand changes in land-use patterns through studies on road networks or landscape dynamics. Political scientists use different sources of available geographical data to interpret territorial modifications highlighted by war and peace dynamics. Geographic information systems facilitate the analysis of heterogeneous multisource and multidate data for such studies. Remote sensing images can also be used to enhance land management in Madagascar, for instance, where very high spatial resolution images are used as base maps-communities may trace the boundaries of plots on these maps and draw up cadastral maps at reasonable cost. Correlation of geographical data and health data enables epidemiologists to detect certain environmental or social factors responsible for disease distributions. Finally, land planners propose future scenarios in collaboration with different territorial stakeholders, and this process is facilitated by the use of information systems as communication tools.

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