ABSTRACT

Territory is a dynamic system characterized by continuous physical and anthropical transformations which give rise and/or destroy natural and cultural resources. The present cartography, therefore, is often not up-to-date at the moment to realize any land use project. Consequently the thematic maps, which are the mean support to planning, would need a systematic revision practically unsustainable from a point of view of cost and time.

The problem of this up-to-date operation seems to be resolved using the Remote Sensing multispectral image analysis, by which it is possible to interpret and recognize the territorial phenomena, following and controlling in the meantime their development trends.

An example of the informative potentiality of the Remote Sensing method is showed by the following flash figures 1, 2 and 3, regarding the Venice lagoon system and its neighbouring continental hinterland, each of them different for physic characters and velocity of transformation.

The analysis, still now in progress, was finalized to reconstruct the links between the territorial change characters and the typology of the ancient human settlements in relation with the available natural resources.

Of course, the final purpose is to individualize on the territory the archaeological remains, more often buried, to safeguard them against the present spread and casual anthropic interventions. The resulting framework emphasized two different land use models of planning, that is: global, in the fluvial plain of the hinterland and diffused but not random in the lagoon basin.

The export of the signs derived by image interpretation into a topographic support is technically practicable. The interpretation, indeed, is always developed on previously georeferenced images, so that the transfer becomes a normal routine work.

REFERENCES


Figure 1: Venice lagoon basin and its hinterland.

The territorial evolution of the Piave River. From a satellite SPOT1 image, Bds 1, 2 and 3: the interpretation of the fluvial palaeo channels shows their West-East Quaternary shifting. (a) = Lower limits of the fossil alluvial fans; (b) = Series of the recent prograded coast lines. Red linears = faults and/or fractures buried below the fluvial plain. These lineaments are the effects of neotectonic movements which caused the shifting fluvial dynamics.
Figure 2: Venice lagoon basin and its hinterland.
The trends of the Piave River evolution. From a satellite SPOT1 image, Bd1, 2 and 3: this scheme is derived from the interpretation put in evidence in Figure 1.
Broad arrows = West-East shifting trends; normal arrows = North-South trend deviation to the subsident lagoon area. This morphological framework has sprang from a tectonic basin bordered by faults (Montebelluna f. = Mb; Caorle f. = Ca; red lines).
Figure 3: Venice lagoon basin and its hinterland.

Ancient human settlement models. From a satellite SPOT image. Bd 2 and 3. The settlement typology are conditioned by the less natural hazards and the better resource availability. The example of the figure concerns the Roman land use model. During this historical period the Piave River was already active in the eastern region, having left behind to West a stable alluvial territory. Consequently the soils were utilized on the base of their agrarian productivity, as the different density of interpreted signs of the Roman hydraulic-agrarian nets shows. In the lagoon basin, instead, the human settlements were localized on the old isles, putting in evidence a diffused but not random model.

The framework constitutes an important parameter for a correct territorial planning with respect of the conservation of the Cultural Heritage of the region.
Ancient human settlement model: enlargement. From the former satellite SPOT1 interpretation (Figure 3). It is evident that the remains and sites are diffused and localized on ancient isles or salt-marshes, today most of them below the tidal level because of subsident phenomena. The model is characterized by a modular distance between the different sites and it represents a support to the archaeological researches.