



Environmental capacity and awareness building for supporting decision-making in developing countries: pilot case studies

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Why do we need to strengthen the role of education and outreach activities in the field of environmental management? According to the United Nations millennium development goals, the main reason is that in our society, the environment has become a scarce resource and the role of scientists, researchers and trainers is to tackle environmental issues through building capacities of new generation. Training and awareness within young people is crucial since it is a long-term approach for the dissemination of knowledge and the transfer of technology in particular to developing countries and countries with economies in transition.

This paper adopts the integration of tools and methods to enhance decision-making in developing countries through capacity building and training. The United Nations centre for Science and High Technology (ICS-UNIDO) runs a number of training activities, scientific workshops, high level seminars and expert group meetings, fellowship programmes aiming at transferring appropriate technology and know-how to developing countries and countries with economies in transition and reinforcing international cooperation through the endorsement of awareness and capacity building and the dissemination of scientific and technological knowledge.

Activities aim at developing approaches for applying environmental technologies

in order to increase the effectiveness of decision-makers and therefore the transfer methodologies to individual emerging and developing countries. Aspects relevant to these activities include earth and space sciences (remote sensing, geographic information systems (GIS), environment simulation, industrial site planning, waste disposal planning and pollution monitoring).

Pilot case studies make use of remotely sensed data to apply geographic information systems (GIS) for monitoring vegetation dynamics and supporting decision-making in particular for optimal site planning of industrial development and to analyze change in land categories and to monitor vegetation dynamics through time series analysis, which is addressed to different vegetation and landscape indices. These environmental indicators were used as measures of the impacts of climatic conditions and anthropogenic activities on the environment.

In order to develop sustainable management approach and to properly respond to human impacts on environment, three main components of sustainability (society, economy and environment) were analyzed.

The potential use of multicriteria evaluation (MCE), multiobjective land allocation (MOLA), Markov transition estimator, cellular automata, Markov dynamic modeling and land-cover prediction, are the converging streams of this research. Emphasis is given to the potential soil erosion and soil loss using the revised universal soil loss equation (RUSLE) model to predict land degradation and desertification in this particular area of the Mediterranean region, affected by land conversion and modification and having experienced human impact and pressure.

Capacity building programme at ICS-UNIDO strive to improve the integration of decision-support tools through merging of data from different sources and incorporating several experiences and backgrounds. Sustainability approach integrating society, economy and environment components are often used and this is a required key solution for an efficient environmental management strategy and long term technology transfer.