ECO-ENVIRONMENTAL COGNITION MANAGEMENT by M. B. BOUCHE, Laboratoire de zooécologie du sol (INRA), CEFE/CNRS, BP 5051, F-34033 MONTPELLIER cedex

Environmental problems result from our unability to predict all consequencies of our acts in ecosystems (from industrial, domestic, agricultural, ... activities). We take in account a restricted knowledge which is limited by 1°) the need to act without delay, 2°) the sequestration of the various knowledge form by speciality jargons, foreign languages, limited access to unpublished and published matters, ..., 3°) the inedequacy of the knowledge preservation and presentation to all possible uses, 4°) the embroilment of the pertinent knowledge in an enormous batch of suppositions, unfalsifiable models, lucubrations, ... and 5°) the true absence of knowledge. The "information revolution" occuring now thanks to the rise of the computer technology gives theoretically the possibility to access quickly to the needed knowledge by Relational (and Dispatched) Data Bases and Artificial Intelligence.

Pratically, the pertinent knowledge is not accessible and could be hardly improved because the inertia and our cognitive practices. Le the eco-environmental knowledge is grounded on precise studies of narrow disciplines related to physics, chemistry and/or biology. We start from tiny facts to built gradually limited true synthesis (not compilation). We observe narrowly expecting later generalization. That is exactly the contrary of the eco-environmental needs : to start from the whole and, if needed, to focuse to more and more precise details. Cognitive analysis of our practices solve this crucial problem by the recognition of three knowledge sectors with two clear operational borders between them: Data ininterpretated from the real systems managed holistically; cognition (sampling selections + interpretation, modelling, ...) managed by an analytico-synthetic process; social (managers, public, multidisciplinary) demands managed holistically. This management allows to use fully last computer improvments and computers assisted applications are given.

Proc. Vith Int Congress of ecology 21-26 August 1994.
Progress to meet the challenge of environnement;
John H. Tallis, Hazel G Norman, Richard A. Benton editors. Symposium 5F p 87.