PU 245

1994 g

In: Anonyme, 1994
CR 14th Int. CODATA Conf., Chambéry 18-21/09/94

E7.C8

THE TRANSDISCIPLINARY INFORMATION SYSTEM ECORDRE: AN OPEN MANAGER OF THE ECO-ENVIRONMENTAL KNOWLEDGE

M. B. Bouche, P. Soto
Laboratoire de Zooécologie du Sol/INRA
Centre Louis Emberger
1919 route de Mende, BP 5051
F-34033 Montpellier Cedex 1, France

The limited capacity of computer facilities has long been the major botleneck in access to eco-environmental knowledge. Today, the increasing power and conviviality of computer systems linked to efficient networks, softwares and peripheral equipment is drastically changing this situation.

This change is revealing current limitations that were previously hidden: our lack of skills in conceptual, unified management of the maze of information and topics produced by a host of converging disciplines in the field of the environment.

For ten years we have been seeking to improve an open information system that can handle all data and make them available in response to all kinds of queries, compelling us to draw clear distinctions between the various relationships of our knowledge: a) with reality, b) with our interpretation/representations of the perceived part of reality (cognition), and c) with society, i.e. the users. Recognition of these three sectors is linked to three types of knowledge managament: the central one, cognition, usually predominates in all intellectual interests: it is the field of selection of studies, of method, of sampling techniques which produce original factual data and it is also the field of interpretations, use of statistics, modeling, expert systems, and so on. This predominant situation unfortunately marginalizes the other two knowledge management systems: reality and societal users. Each elementary datum by itself, describing one value of one variable of one "object" of reality is not interprested and in its true nature cannot be interpreted alone. Only a set of data, formalized as DICs, could be interpreted, and this availability would only be possible is all DICs are described indepedently of the original study. This is possible for all data describing biological, chemical and physical properties.

We have developed a generalized "Conceptual Global Scheme" referring all DICs to three "ecological" (i.e. global) referendaires (time, space, composition) and two technical referendaires (protocol, motivation). These referendaires are multidimensional, as indeed are all DICs, through other DICs related to these 5 referendaires, owing to a global DIC management: al data, of any type, from reality (field forest, machine, fisheries, ...) could be managed independently from technoscientific disciplines for any combination and any interpretation. Humans can explore, and then interpret, all the observed current data. This is possible because we start from the global to relate each particular datum to it (in application has been drawn up in BASECOL, a part of ECORDRE).

As a general rule, users ask for knowledge that is either exhaustive (all available) relevant (only the useful part) or explained (no jargon) and which could be accessible through from general questions to all aspects of detailed interpretation. We are developing a description of results as related predicates (including mathematical formulae) in Explained Knowledge Dispensers submitted to users' criticisms and a system of acess from the general to the particular in ECOGNIT, the second part of ECORDRE.

It is to be noted that, contrary to the dominant cognition process (from the particular to the general), in ECORDRE, a general knowledge schema pre-exists and then data (DICs) in BASECOL and predicates (in ECONIT) are ordered following these schemas. Last but not least, the management of DICs and predicates for users does not require complex processes, merely a few concepts. In turn, cognition – which can often be obscured by parochial approaches, trends, assessments and jargon terms – could then be referred to a general pattern.