

## **On the use of a reference classification in the ETN**

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During the workshop in Colombia (December 2006) it was requested that the ETN submits a brief paper explaining why a reference classification is needed to do a cross-walk among different ecosystems classifications in the region. This was asked since there is an IEC mandate & a recommendation of WB not to carry out development or adoption of a standard ecosystems classification for the Americas.

Because of the challenge involved in the conceptual and spatial representation of what constitutes an ecosystem, several different surrogates have been used in the past to approach the classification of natural environments, many of them based on the use of global level biomes and biogeography. With the advent of remote sensing techniques and all the associated mapping tools, vegetation has become the most common surrogate of ecosystems. First, because it forms the basis of any food chain and because it clearly reflects environmental conditions likely to affect other living components of the community, e.g. climate, substrate; and second, because it can be mapped from remote sensed information lending itself to the delineation of discrete boundaries between classes.

There are several existing vegetation classification approaches, some of them emphasizing the floristic and physiognomic aspects of vegetation and others that explicitly use environmental parameters as classifiers. The diversity of options at hand resulted in every country in America having a different classification both in terms of conceptual resolution and spatial resolution. To some extent, the International Vegetation Classification published by UNESCO in 1973 provided a standard currency in terms of physiognomy and structure of vegetation, but just as it recognized the need for the use of supplementary parameters of climate, soil, and landform to aid in continental level mapping, the same has happened to the more recent applications, where the UNESCO vegetation formations or derivations thereof, are modified by the use of different sets of environmental or (phyto)geographical classifiers.

Particularly challenging in terms of ecosystem classification, is the issue of spatial scale because even applying systematically established classification criteria and concepts, one can end up with units in both ends of a spatial spectrum. Further complexities are introduced when different countries or regions are classified and/or mapped at widely different scales.

In order to successfully manage ecosystems it is necessary to have a spatial depiction of their extent and distribution, as well as good information related to the unit. The goal of the Ecosystem Thematic Network is to implement an electronic and institutional network dedicated to regional ecosystem information that supports the decision making process. Given that many countries share ecosystems and/or ecoregions and each one has a different approach to vegetation or land cover maps,

central to this objective is the need of creating a common language to which each of the existing national vegetation classifications, can relate. Since it would be impossible and useless to cross-walk each classification to the many other ones, this "reference classification" will be the conceptual tool to allow for that crosswalk. By means of filling out a format with fields that describe the class according to a series of pre-determined attributes or criteria, each class in each existing classification will be related to a class in the reference classification, and using the adequate data base structure, it will be possible to list all classes related to a specific class in the reference classification, allowing for the needed crosswalk.

The ETN core group has identified the GEOSS proposed classification structure as the right structure for the reference classification. 1. Its tiered approach is useful given the issue of several different spatial scales the network is going to be dealing with. 2. The identified attributes for the GEOSS levels or tiers, include many of the same modular criteria identified in the FAO Land Cover Classification System for the natural vegetation and are standard environmental attributes. 3. The commitment of USGS to globally map this classification is an added value that will demonstrate in the future the usefulness of having a database that uses GEOSS as the reference classification, to put in context the ecosystems information to be developed.