



Harmonising regional environmental data within a European framework

Standardised methods of categorising environmental data are needed at European and international levels for effective international policies. A recent study has concluded that a European framework that harmonises environmental data at the continental scale corresponds well with national classification systems, although some modifications may be needed to capture small-scale regional variations.

Currently in Europe, countries collect and process environmental data used to monitor biodiversity and changes in ecological conditions, according to their own methods, classifications and concerns. However, for data to be useful to international strategy, data need to be standardised. As Europe's environment varies greatly, statistical methods can be used to reduce any bias in classifying the environment into similar types. Such methods (stratification) assign land to smaller groupings (strata), with each group having distinct and consistent characteristics. These strata can then be used to compare and evaluate environmental data over large areas.

A standardised framework of environmental stratifications (the Environmental Stratification of Europe, EnS) has been developed for Europe and parts of northern Africa, within the EU EBONE¹ project. The EnS can be used to integrate environmental data to help ensure it is consistent for international policy and modelling studies.

The study statistically compared environmental maps produced by four countries, the UK, Sweden, Spain and Austria, using their own national environmental stratifications, with similar maps produced by the EnS, to evaluate how well detailed regional and national environmental data can be captured and integrated within the continental-scale stratification of the EnS. Overall, the study found that the EnS can distinguish between variations in environmental conditions at the regional scale, although in some cases, the differences are too small to be captured at the continental scale. In these cases, it might be necessary to further subdivide the EnS groupings to account for the classes identified in the national systems.

As an example, in the UK, the Countryside Survey (CS) Land Classification of Great Britain monitors conditions and changes in the environment. Statistical comparisons between environmental maps produced by the CS and the EnS suggest environmental mapping over 44% of the UK is consistent between the two systems, but 28% is inconsistent. This inconsistency is partly caused by some areas in the south of the country having environmental conditions closer to conditions in the north of France rather than to conditions in neighboring areas in the UK. In CS maps (representing conditions only in the UK), these southern areas are given the same classification as the neighboring UK areas, whereas the EnS system, which considers the continental scale, classifies the southern UK and northern France areas together. Comparisons between the National Inventory of Landscapes in Sweden (NILS) and EnS systems reveal that 65% of Sweden's data is consistent between two systems but 34% is not. This may be partly because there are a smaller number of classes in the Swedish system than in the EnS.

Comparisons between Spain's Rural Landscape Monitoring System (SISPARES) and the EnS found that 55% of Spain was consistently mapped by both the SISPARES and EnS systems and 41% of the land was inconsistently mapped. As for the CS maps in the UK, many of these inconsistencies relate to environmental conditions at Spanish border areas being more closely related to conditions across the border: these areas are classified with neighboring Spanish areas in Spanish maps, whereas EnS maps classify areas with similar conditions together, even if these areas extend across national boundaries. In Austria, only 17% of the mapped areas were highly consistent when comparing the national SINUS system and the EnS. This was mainly because the SINUS system uses a greater number of classes to differentiate environments associated with the wide range of altitudes found in Austria.

1. EBONE (European Biodiversity Observation Network) is supported by the European Commission under the Seventh Framework Programme. See: www.ebone.wur.nl

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