Revision of the Common International Classification for Ecosystem Services (CICES V5.1): A Policy Brief

Roy Haines-Young‡, Marion B. Potschin-Young‡
‡ Fabis Consulting Ltd, Barton In Fabis, United Kingdom

Abstract

The Common International Classification of Ecosystem Services (CICES) is widely used for mapping, ecosystem assessment, and natural capital ecosystem accounting. On the basis of the experience gained in using it since the first version was published in 2013, it has been updated for version 5.1. This policy brief summarises what has been done and how the classification can be used.

Keywords

CICES, ecosystem service classification, MAES, ESMERALDA, KIP-INCA

Introduction

It is often said that you cannot manage what you cannot measure. It follows, of course, that you also have to know precisely what is being measured. And this is where classification...
systems are important. They help us define what we mean and communicate what we have found.

The need for robust and relevant tools for classification is especially important in the field of ecosystem services (Polasky et al. 2015). To progress we have to bring together perspectives from different disciplines and ensure that we are talking about the same things. More fundamentally, to support evidence-based policy making, we must be able to review and transfer knowledge to different situations in ways that are clear and unambiguous. The Common International Classification of Ecosystem Services, CICES, has been developed to do just that.

CICES developed out of the work on environmental accounting undertaken by the European Environment Agency (EEA) and other international partners (Haines-Young and Potschin 2018). However, its application has gone far beyond accounting. It has been used as the basis of mapping and ecosystem assessment more generally. The work in the EU on Mapping and Assessment of Ecosystems and their Services (MAES)*1, for example, uses CICES as the framework for its work developing ecosystem service indicators (Czúcz et al. 2018).

The first fully operational version CICES (V4.3) was published in 2013. On the basis of the experience gained by the user community since then, its structure and scope has been reviewed, and a fully revised version (V5.1) is now available. This policy brief explains what has been done and why.

The structure and scope of CICES

Both the original and the new version of CICES defines ecosystem services as the contributions that ecosystems make to human well-being (Haines-Young and Potschin 2018). CICES focusses on the ‘final’ outputs of ecosystems and seeks to identify the materials and properties of ecological systems that can be used by people in beneficial ways.

CICES has been designed to capture the ways the science community has sought to describe ecosystem services, and following common usage, recognises that the main categories of ecosystem outputs to be provisioning, regulating and cultural services. To deal with the fact that people work at different spatial and thematic scales, CICES describes these service types by means of a five-level hierarchy, with each level is progressively more detailed and specific. However, the scope of the classification is comprehensive, aiming to include all that can realistically be considered as an ecosystem service. The way it works can be seen in Fig. 1, which shows how ‘cereals’ might be classified.

Although the primary focus of CICES is on the way living systems (‘biodiversity’) give rise to these services, for completeness it also provides a way of classifying the abiotic...
contributions that ecosystem can make. Fig. 2 and Fig. 3 provide an overview of the revised classification for the upper three levels.

Figure 1.
Illustration of the hierarchical structure of CICES V5.1 using cereals.

Figure 2.
Overview of revised structure of CICES (V5.1) for biotic ecosystem services (upper three levels in the classification only).
What’s new?

The revised version of CICES (V5.1) was released in January 2018. The update was based on a wide-ranging consultation with the user community and a review of published work (Haines-Young and Potschin 2018). The revision basically clarifies the way specific ecosystem services are defined and extends the scope of the classification. In particular the structure has been modified to help people aggregate service categories more easily for reporting purposes when no-end use is known.

The need to be clear about the distinction between ecosystem services and their associated benefits was one of the key tasks identified by the user community that was tackled in the revision of CICES (Haines-Young and Potschin 2018). To emphasise the ‘purposeful’ nature of ecosystem service, in V5.1 the definition of each service is therefore made up of two parts, one describing the biophysical output from the ecosystem (i.e. what the ecosystem does) and the other describing the contribution it makes some benefit (i.e. how that output is used or enjoyed by people).

So, for example, the service ‘Wild animals (terrestrial and aquatic) for used nutrition’ would be now be defined using this two part approach as ‘non-domesticated, wild animal species and their outputs ….. that can be harvested and used as a raw material for the production of food’. Similarly, the service of ‘pest control’ would be ‘the reduction by biological
interactions of the incidence of species…… that damage or reduce the output of food, material or energy from ecosystems, or their cultural importance, by the consumption of biomass or the spreading of disease'.

These formal definitions are important, so we can be clear about what we are measuring and managing. However, to help people cope with the complexity of the field of ecosystem services the revised classification provides some simpler names to refer to services that can be used in public consultation, and examples of services and benefits for each category so that people can understand better what is being discussed. The service categories are also coded numerically to assist referencing and analysis.

**What next?**

Despite the changes that have been made in the revised version of CICES it is fully compatible with the original and there is detailed documentation on what has been done. In making the revision it was also recognised that people may use other ways of naming ecosystem services in their work, and so to develop CICES as a reference system we have also provided cross-references to the typologies used in the Millennium Assessment (MA), The Economics of Ecosystems and Biodiversity (TEEB), and IPBES, with its concept of nature’s benefits to people*2. The important thing now is to use the new version and develop further our understandings of how ecosystems can benefit people.

CICES is one of the tools that can help us measure ecosystem services better. Future work will need to look at how this classification can link to the ways we classify and characterise the condition of ecosystems, so that we can understand the biophysical underpinnings of ecosystem services. It will also need to look at the way we describe and classify benefits and beneficiaries, so that we can better document how people depend on or engage with nature over space and time. Some of this work has begun in EU-funded projects such as OpenNESS and ESMERALDA, and further insights will emerge from the wider use of the classification in the other work in the EU on natural capital and ecosystem services accounting*3. We need to measure the value of ecosystems and the cost of their depletion in clear and unambiguous ways if we are to inform policy and investment decisions. CICES is one tool that can help us in this important task.

**How do I find out more?**

The CICES website ([www.cices.eu](http://www.cices.eu)) provides access to the revised classification tables and the guidance document that explains the revision in detail. It also provides links to current applications and publications, and how you can reference work based on CICES V5.1. Further discussion on the issues of classifying ecosystem services can be found in Potschin and Haines-Young (2016).
Acknowledgements

We gratefully acknowledge the input provided from the user community in developing the revised version of CICES and the support provided by the EEA and the EU though the OpenNESS (Grant Agreement No. 308428) and ESMERALDA Projects (grant agreement No 642007).

References


Endnotes

*1 http://biodiversity.europa.eu/maes
