

## Developing Global databases using ARIES for SEEA

The ARIES for SEEA Explorer allows users to compile ecosystem accounts for any user specified area in the world and accounting period (from 1992 onwards), using accessible data layers and models, consistent with the SEEA Ecosystem Accounting. While ARIES for SEEA is designed as a tool to be run by individual users, it is possible to run the Explorer for all countries/statistical territories in the world and thereby generate a default set ecosystem accounts (as well land cover accounts), that could be used to develop a global database with ecosystem accounts.

The current Explorer functionalities are restricted to assessing: 1. ecosystem extent (based on the IUCN Global Ecosystem Typology (GET)), 2. condition (for forest ecosystem types), and 3. selected ecosystem services in physical and/or monetary units using basic models as a starting point (currently included are: crop provisioning; crop pollination; climate regulation; sediment regulation; nature-based tourism). The plan is to progressively expand the scope and coverage of measures of ecosystem condition and ecosystem services in both physical and monetary terms.

ARIES has the possibility to create batch processes<sup>1</sup> to automatically generate accounts on a regular basis, say every year.<sup>2</sup> There would be possibilities for creating different versions of such accounts: using the same global data sources to ensure comparability of outcomes across countries, or using best available data sources (for instance when compiling extent accounts this means that ARIES would use CORINE land cover data for EU countries, but ESA-CCI for developing countries unless those countries would make national data sets accessible to ARIES).

It would be essential that all country data would be validated by countries before placed in the global database, in line with the data flow process agreed in the context of the SDGs and discussed by the UNCEEA for the SEEA global databases.<sup>3</sup>

To explore these new possibilities, it is proposed to start a pilot during 2021-2022 focused on generating a global database on **ecosystem extent** accounts for a limited number of years. The advantage of starting with extent is that the resulting database may also be used for reporting to the emerging post 2020 biodiversity monitoring framework, specifically indicators under Goal/Target A.

This pilot would have the following activities:

- Expand the number of ecosystem functional groups (EFGs, i.e. (ecosystem types) currently coded into ARIES (in consultation with IUCN GET team)
- Develop an efficient batch process to generate accounts for all countries (based on M49)
- Test the resulting accounts with selected volunteer countries
- Set-up proper IT structure (e.g. SDMX dataflow including API for dissemination.)
- Establish a proper validation process with countries.<sup>4</sup>

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<sup>1</sup> A process to complete batches of jobs, often simultaneously, in non-stop, sequential order.

<sup>2</sup> For most countries this process would be straightforward, but in some cases (e.g. countries that cross the 180<sup>th</sup> Meridian) this may require additional development.

<sup>3</sup> See: [https://seea.un.org/sites/seea.un.org/files/unceea\\_-\\_principles\\_for\\_the\\_creation\\_and\\_maintenance\\_of\\_global\\_seea\\_databases.pdf](https://seea.un.org/sites/seea.un.org/files/unceea_-_principles_for_the_creation_and_maintenance_of_global_seea_databases.pdf)

<sup>4</sup> The principles for the principles of the creation and maintenance of global databases on ecosystem accounts may need to be reviewed in light of functionality ARIES provides. For example, in line with the interoperability strategy,

A group with relevant experts may be established to provide guidance and support to this proposal.

***The Committee is asked for its views on the proposed pilot to use ARIES for SEEA Explorer to generate global databases for ecosystem extent.***

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in case countries prefer national data sources to compile ecosystem accounts, countries would be encouraged to make national data sets accessible so that ARIES could run the default accounts, rather than go through a traditional data collection effort.