



Viewpoint

Implementing the European policies for alien species – networking, science, and partnership in a complex environment

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Abstract

The European Commission has recognized the need for more stringent action to manage biological invasions and has committed to develop a dedicated legislative instrument. Under this upcoming legislation, European countries and their relevant institutions will have additional obligations and commitments in respect to invasive alien species. In September 2012, the European Commission's Joint Research Centre (JRC) launched the European Alien Species Information Network (EASIN) to facilitate the exploration of existing alien species information from distributed sources and to assist the implementation of European policies on biological invasions. Subsequent to the launching of EASIN, there was an evident need to define its niche within a complex environment of global, European, regional and national information systems. Herein we propose an organizational chart clearly defining the role of each actor in this framework, and we emphasize the need for collaboration in order to effectively support EU policies.

Key words: biological invasions; EASIN; Europe; information systems; invasive alien species

A conservative estimate of the annual damage caused in the EU by alien species is € 12 billion (Kettunen et al. 2009; Shine et al. 2010). Recognizing the need for robust action to control biological invasions and thus mitigate their impacts on biodiversity, ecosystem services and human activities, the European Commission

issued a Communication presenting policy options for an EU Strategy on Invasive Species five years ago (EC 2008). This communication highlighted the magnitude of the impacts of biological invasions in Europe and the urgent need to take action. The EU Biodiversity Strategy (EC 2011) stresses the need to combat

invasive alien species (IAS) through its Target 5: “By 2020, IAS and their pathways are identified and prioritized, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS”. Currently, a dedicated legislative instrument is being developed by the Commission (to be launched in 2013) as dictated by Action 16 of the Biodiversity Strategy.

European countries and their relevant institutions have or will have, under the developing EU legislative instrument, obligations and commitments under both the European and global frameworks in respect to IAS. These include prioritising pathways for prevention, identifying the most harmful species for responses, enforcing effective early warning and rapid response mechanisms, developing indicators of trends and responses, and other management strategies. The EU, European states, and global institutions have funded and supported many initiatives that provide and disseminate crucial information for complying with these tasks, but Europe still lacks a system that gathers all this widely distributed information, harmonizes the data, and provides the compiled information in an easily accessible way to scientists and decision makers.

In September 2012, the European Commission’s Joint Research Centre (JRC) launched the European Alien Species Information Network (EASIN) with a stated aim to “facilitate the exploration of existing alien species information from distributed sources through a network of interoperable web services, and to assist the implementation of European policies on biological invasions” (Katsanevakis et al. 2012). The launching of EASIN caused mixed reactions; the opportunities and innovation represented by EASIN were recognized, but at the same time several key actors and data providers stressed the need to avoid duplication of efforts, and to make best use of existing services and initiatives, by adopting a more collaborative approach to the issue.

One of the main issues raised after the launch of EASIN was the necessity for a clear definition of its niche, as a first step towards a Memorandum of Understanding among all participating major alien species initiatives at the national, European and global scale. These are prerequisites for success in a complex environment of many global, European, regional and national initiatives and information systems, a large, active and diverse scientific community,

specific demands by policy makers, and obligations for EU member states by current and upcoming legislation on alien species. Such a delineation of EASIN’s role, but also of the role of all the other players, was deemed essential in order to improve cooperation, increase synergism, avoid conflicts and duplication of efforts, and be able to provide timely, high quality, and relevant scientific advice for political decision making in Europe.

Herein we propose an organizational chart (Figure 1) that clearly defines the role of each player in the arena of implementing the European policies on invasive alien species. We would like to emphasize that national institutions, i.e. national experts, monitoring and reporting systems, local networks and national Biodiversity Information Facilities (BIFs; <http://www.gbif.org/participation/participant-nodes/bif/>) are the foundation of the entire infrastructure. It is critical to sustain and financially support national institutions and networks, as they are the main data suppliers of IAS information, knowledge and expertise.

It is important to highlight the role of regional (e.g. NOBANIS, ESENIAS, and MAMIAS) and European initiatives (e.g. DAISIE) in the validation and integration of the information originating from various sources in the European countries. Additionally, these initiatives have been motivating and assisting countries in updating their alien species inventories. Often regional and European initiatives are the only channels for reporting information on alien species, and some countries would not have national lists of alien species if not compiled for them. Most importantly, they have a major role in networking, the ultimate verification of information, and the production of the knowledge needed to support European policies and to provide further advice for political decision-making (e.g. assessment of pathways of introduction, assessment of impacts, management options and risk assessments). It is also crucial to work in contact with global information services – such as the FAO Database on Introductions of Aquatic Species (DIAS) and the growing membership of the Global Invasive Alien Species Information Partnership (GIASIP; <http://giasipartnership.myspecies.info/node/19>), which includes the IUCN Global Invasive Species Database (GISD), the Global Biodiversity Information Facility (GBIF), and the CABI Invasive Species Compendium (ISC) – as information on many invaders is only

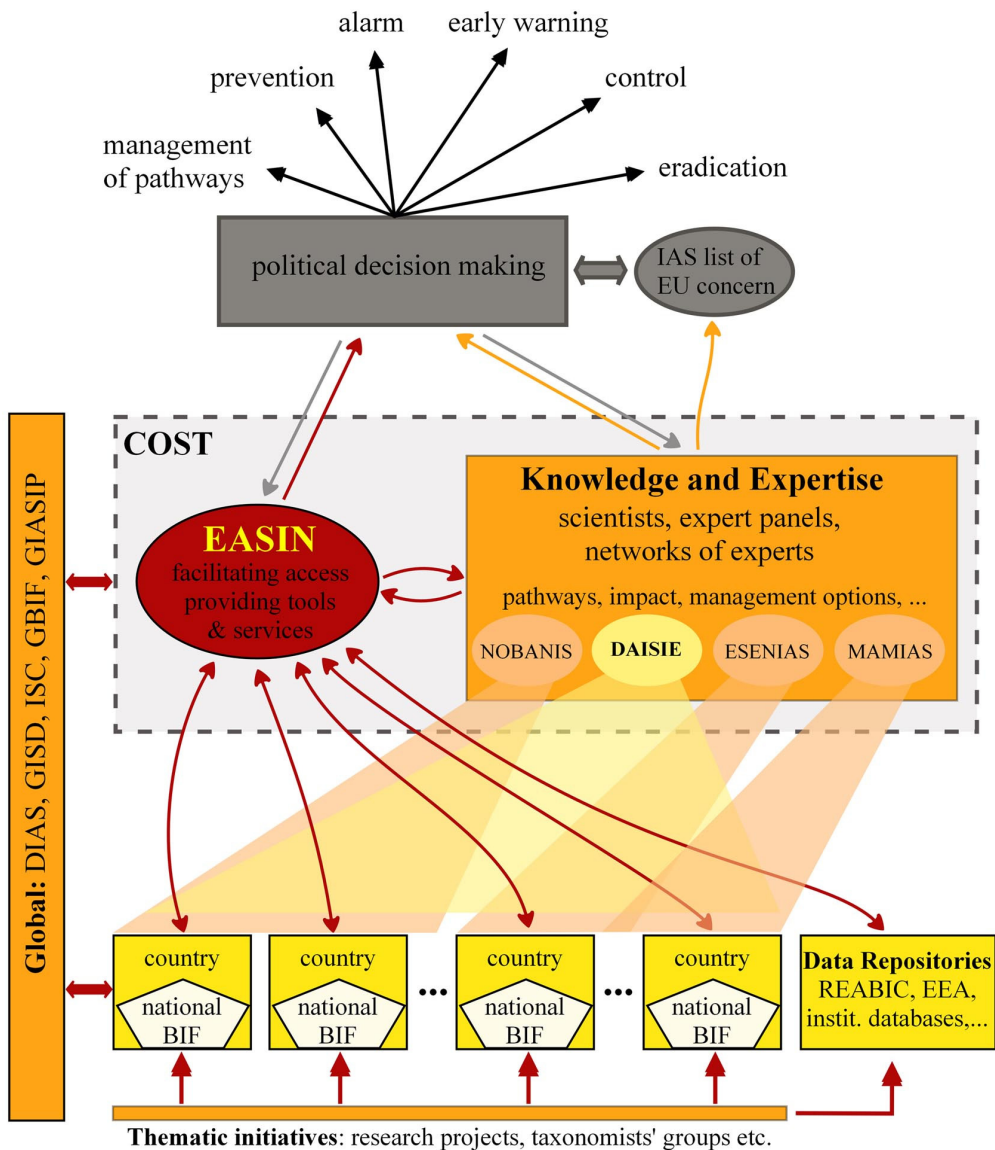


Figure 1. The proposed organizational chart of all the players in an information network for alien species aiming to provide the required knowledge and scientific advice to support political decision making. Red arrows indicate flow of data and information; orange arrows denote scientific advice; grey arrows stand for demands for policy support; black arrows indicate the main issues that have to be addressed by decision makers.

available outside Europe, and the data stored in these initiatives will be key to enable early warning and rapid response to new invaders in the future. EASIN will not create new knowledge *per se*, but will instead – working in contact with all involved actors – harmonize and aggregate information made available by data providers,

thereby facilitating timely access to key data on alien species and providing valuable tools and services to scientists and policy makers.

EASIN will work in partnership with European and global data providers to facilitate access to key data and information on alien species and to demonstrate the usefulness of the

existing databases. Ultimately, EASIN should facilitate further support to data collection and database maintenance and sustainability. EASIN will promote the principles of open-source, ensure accreditation of data publishers and data owners, highlight the work of other initiatives and increase their visibility, and facilitate direct access to the original information/data. Expected key outputs of the partnership will be:

- (A) The implementation of a data discovery portal that facilitates access to alien species data and links to the original sources of information. The portal will have a particular focus on the information that is needed by scientists to support decision-making (e.g. distribution of IAS, biological traits of species used for risk assessment, pathways of introduction, records of invasiveness in Europe and globally, and management alternatives).
- (B) Developing tools and web services that allow easy exploration, visualization, and best use of alien species data.
- (C) To facilitate the work of national institutions to develop national lists or information compiled for reports, and support individual country's activities, including reporting under the EU legislative framework and CBD.

The major players on alien species related activities in Europe are participants of a recently accepted COST Action entitled "European Information System for Alien Species" (COST TD1209). Its aim is to "facilitate enhanced knowledge gathering and sharing through a network of experts, providing support to a European IAS information system which will enable effective and informed decision-making in relation to IAS". This COST Action will act as an umbrella for EASIN and for expert networks and offers a unique opportunity for pan-European cooperation. Many issues and technicalities on the flow of data among different initiatives and the further development of EASIN will be dealt with within this COST action.

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Abbreviations used: BIF: Biodiversity Information Facility; CBD: Convention on Biological Diversity; COST: (European) COoperation in Science and Technology; DAISIE: Delivering Alien Invasive Species Inventories for Europe; DIAS: Database on Introductions of Aquatic Species; EASIN: European Alien Species Information Network; EEA: European Environment Agency; ESENIAS: East and South European Network for Invasive Alien Species; FAO: Food and Agriculture Organization; GBIF: Global Biodiversity Information Facility; GIASIP: Global Invasive Alien Species Information Partnership; GISD: Global Invasive Species Database; IAS: Invasive Alien Species; ISC: Invasive Species Compendium; JRC: Joint Research Centre; MAMIAS: MARine Mediterranean Invasive Alien Species database; NOBANIS: European Network on Invasive Alien Species; REABIC: Regional Euro-Asian Biological Invasions Centre.

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