

ENVIBASE

ENVIBASE: Boosting the infrastructure of environmental data in Finland

The ENVIBASE project is a significant national investment in boosting the technical infrastructure behind the collection, management, sharing and utilisation of environmental data in Finland.

The participating organisations, namely the Finnish Environment Institute (SYKE), Finnish Museum of Natural History (LUOMUS) and Finnish Meteorological Institute (FMI), concentrate the development on five specific entities:

1. The enhanced use of GIS- and remote sensing infrastructure for environmental applications
2. The development of the National Satellite Data Centre (NSDC)
3. The development of the Finnish Biodiversity Information Facility (FinBIF)
4. The redesigned utilisation of citizen observations in environmental monitoring
5. Enhanced management and sharing of research datasets.

ENVIBASE is funded by the Finnish Ministry of Finance and participation organisations with a total funding of EUR 7.3 million. The project will be carried out in 2015–2017.

ENVIBASE concentrates on the development of information systems and processes used in the collection and utilisation of multi-source environmental data. The project emphasises the principles of free and open data.

WORK METHOD

Discussion and feedback from the users of the enhanced infrastructure is a significant part of the project, thus the work is advanced in an iterative way. Interoperability within ENVIBASE and with development done in other projects is ensured through a common architecture framework and with continuous discussion on the technical development in particular.

RESULTS

The results of the project will be manifested through several applications to present the usage of enhanced infrastructure. Ultimately, ENVIBASE aims for the common and enhanced usage of environmental data collected from multiple sources that is managed and shared with up-to-date solutions.

ENVIBASE IN A NUTSHELL

Start year	2015
End year	2017
Budget	EUR 7.3 million
Financiers	Ministry of Finance, participating institutes
Endusers	Environmental administration, researchers, private sector
Participating organizations	Finnish Environment Institute (SYKE) Finnish Museum of Natural History (LUOMUS) Finnish Meteorological Institute (FMI)

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ENVIBASE IN PARTS

Environmental Data and Services is a part of the project that aims for the strengthening of GIS and remote sensing infrastructure for environmental monitoring. It promotes open data and processing interfaces and results in a map-based toolbox for presenting and analysing environmental information online.

Enhanced infrastructure is demonstrated through three applications: a virtual laboratory of ecosystem services, near real-time data sources for environmental monitoring and an internet-based tool for the analysis of drainage basins (VALUE).

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The Finnish Biodiversity Information Facility (FinBIF)

collects biodiversity data from Finland to an integrated e-infrastructure. It combines three kinds of biodiversity data, specimens, observations and DNA, and links them with modern analysis tools.

The core information such as taxonomy and location data will be unified, which allows for combining data from different data sources. An easy-to-use portal will be built for data sharing. A new observation and monitoring system as well as a management system for scientific collections are also under development. One of the main aims of the project is to promote and apply the concept of open data.

The FinBIF is administrated by Finnish Museum of Natural History (www.species.fi).

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SPECIES.FI INCLUDES

Observations and specimen

36 397 819

Species

51 747

Information sources

353*

*STATUS 4.9.2015

The National Satellite Data Centre (NSDC) receives, processes, archives and distributes satellite data. The main goal of the centre is to provide easily accessed satellite data and products to users from a single point.

NSDC is a Copernicus Collaborative Ground Segment and responsible for delivering Sentinel data to Finnish and neighbouring area users. Besides freely available Sentinel data, NSDC provides optical and SAR satellite data and value-added products from other satellites. The centre also provides a processing environment for users next to a data source.

NSDC is part of the Finnish Meteorological Institute (FMI) and is located at the FMI Arctic Research Centre in Sodankylä, Finland.

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THE NATIONAL SATELLITE DATA CENTRE (NSDC) WILL PROVIDE EASILY ACCESSIBLE SENTINEL SATELLITE DATA. / OBSERVATIONS MADE BY CITIZENS CAN ASSIST IN WATER QUALITY MONITORING, FOR EXAMPLE. PHOTOS: ESA, REINIMÄKI.

Citizen Observation Services consist of different methods for ordinary citizens to submit and share their observations of the environment. Modern mobile communications technology enables faster and more flexible ways of collecting observations made by citizens of a large variety of subjects.

With digital images, even quantitative observations and measurements of water quality, for example, can be derived from image data by using simple equipment which could be made available for numerous observers. A key issue is the centralised management and sharing of collected data. This is a requirement for the wider utilisation of observations made by citizens.

Methods and arrangements for professional utilisation of such data are demonstrated in SYKE: How to ensure reliability and availability of sustained voluntary observations?

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Research Data Services standardises ways for finding, storing, managing and sharing data collected in research projects. This is approached by implementation of metadata service for diverse research data, by enhancing ontology, by generating a research data plan template and especially by creating solutions for storing and sharing research data.

These services are meant to make the data easily available for collaboration and higher re-use for both SYKE and a larger audience. SYKE has the responsibility of developing the tools for open environmental science in ENVIBASE.

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