

ENVIRONMENTAL QUALITY AND PRESSURE ASSESSMENT
ACROSS EUROPE: THE LTER NETWORK AS AN INTEGRATED AND
SHARED SYSTEM FOR ECOSYSTEM MONITORING

"ENVEUROPE"

LIFE +

ENVIRONMENTAL POLICY AND GOVERNANCE

Delivered to the Italian Ministry of the Environment: 21/11/08

Evaluation: January-July 2009

Expected start date: 01.01.2010

Expected end date: 31.12.2013

Reg. (EC) n. 614/2007 *LIFE+*
L'Instrument Financiarie pur l'Environment

- Published in the EC Official Journal the 9th of June, 2007
- Period: 7 years (2007-2013)
- Funds: 300 million € /y ca.
- Management and selection of projects: European Commission and new *LIFE+ Committee*

Three components:

- 1- Nature conservation and biodiversity (at least 50% of total budget);
- 2 - Environment policy e governance;
- 3 - Information and communication

Reg. (EC) LIFE+ 2007

Art. 4, par. 2

The objectives of LIFE+ Nature and Biodiversity shall be:

(c) to support the design and implementation of policy approaches and instruments for the monitoring and assessment of biodiversity and the factors, pressures and responses that impact on them, in particular in relation to the achievement of the target of halting biodiversity loss within the Community by 2010 and the threat to nature and biodiversity posed by climate change".

SHORT STORY OF THE PROJECT

- JANUARY 2008 (LTER EUROPE CONFERENCE IN COTO DONANA)
- PROJECT "DIVEUROPE": Biodiversity pattern assessment across Europe: the LTER network as an integrated system for biodiversity monitoring. LIFE +, NATURE AND BIODIVERSITY.
- DRAFT PREPARED IN THE FOLLOWING 5 MONTHS (BRUNO, KINGA AND ME)
- JULY 2008: * MEETING AND DISCUSSION IN ITALY;
* NEW LIFE + CALL
- AUGUST 2008: INTERNATIONAL LTER MEETING (SLOVAKIA)

LIFE+ CALL FOR PROPOSAL 2008

Component 1 – Nature and Biodiversity

Projects must have at least 25% of their budget for concrete actions.

LIFE+ Biodiversity proposals involving few or no concrete actions will thus generally be considered ineligible. There are however two exceptions to this rule:

Life+ Biodiversity projects for the development and testing of new biodiversity monitoring indicators do not need to include any concrete conservation actions.

NEW PART:

The core of such a project must focus on the development and testing of new biodiversity indicators. Proposals that, for example, involve much data collection or research, of which only a part is related to the development and testing of new indicators, will not benefit from this exception. Any such project should also provide clear operational guidelines on how these indicators should be applied. Routine monitoring actions or harmonisation/standardisation of established monitoring techniques/indicators will not benefit from this exception.

Some lessons from the 2007 Call for Proposals:

Some proposals that sought to be exempted from the 25% concrete conservation actions requirement by presenting themselves as developing new biodiversity indicators were rejected because much of the effort concerned data collection / research unrelated to the testing and development of new indicators.

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ENVIRONMENTAL POLICY AND GOVERNANCE

Component 2 – Environment Policy and Governance

The specific objectives of LIFE+ Environment Policy and Governance call for proposals are as follows:

- (a) to contribute to the development and demonstration of innovative policy approaches, technologies, methods and instruments;
- (b) to contribute to consolidating the knowledge base for the development, assessment, monitoring and evaluation of environmental policy and legislation;
- (c) to support the design and implementation of approaches to monitoring and assessment of the state of the environment and the factors, pressures and responses that impact on it.

Priority areas for LIFE+ Environment Policy and Governance

Strategic Approach

Promoting effective implementation and enforcement of EC environmental legislation and improving the knowledge base for environmental policy.

Priority areas of action :

Strengthening the knowledge base for policy making and implementation by building a Shared Environmental Information System (SEIS) and supporting the implementation of the Global Monitoring for Environment and Security initiative (GMES)

DIVEUROPE → ENVEUROPE

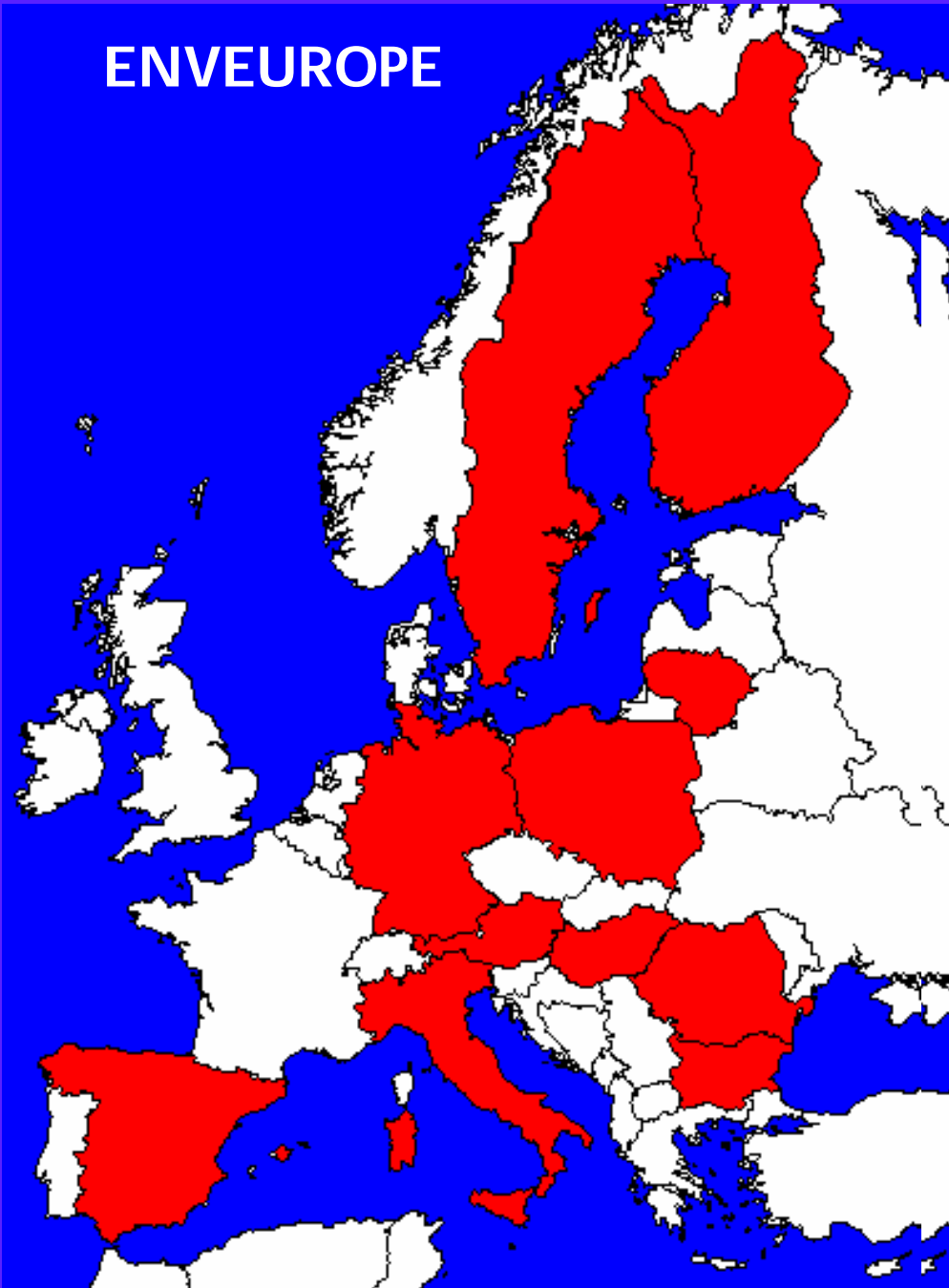
“**E**nvironmental quality and pressures assessment across **E**urope: the LTER network as an integrated and shared system for ecosystem monitoring”

Change the general point of view of the project: from biodiversity to environmental quality through restructuring the project proposal

CONCEPTUAL CONTEXT

- BRIDGING THE GAP BETWEEN SCIENCE AND POLICY
- CONTRIBUTION TO THE SEIS PROCESS
- CONTRIBUTION TO KOPERNICUS-GMES

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The proposal involves the following 11 countries:

Italy, Austria, Bulgaria,
Finland, Germany, Hungary,
Lithuania, Poland, Romania,
Spain, Sweden.

1 COORDINATING AND 15 ASSOCIATED BENEFICIARIES:

- 1) **NATIONAL RESEARCH COUNCIL, CNR (IT)**
- 2) CONECOFOR (IT)
- 3): UNIVERSITY OF JYVÄSKYLÄ (FI)
- 4): SENCKENBERG, RESEARCH INSTITUTES AND NATURAL HISTORY MUSEUMS (DE)
- 5): HELMOLTZ, CENTRE FOR ENVIRONMENTAL RESEARCH (DE)
- 6): UNIVERSITY OF BUCHAREST, DEPARTMENT OF ECOLOGY (RO)
- 7): FOREST RESEARCH AND MANAGEMENT INSTITUTE (RO)
- 8): UNIVERSITY OF DEBRECEN (HU)
- 9): HUNGARIAN ACADEMY OF SCIENCES (HU)
- 10): EUROPEAN REGIONAL CENTRE FOR ECOHYDROLOGY U/A UNESCO, INTERNATIONAL INSTITUTE OF POLISH ACADEMY OF SCIENCES (PL)
- 11): INSTYTUT EKOLOGI I TERENÓW UPRZEMYSŁOWI ONYCH (PL)
- 12): LITHUANIAN UNIVERSITY OF AGRICULTURE (LT)
- 13): FEDERAL ENVIRONMENTAL AGENCY (AT)
- 14): SPANISH NATIONAL RESEARCH COUNCIL (ES)
- 15): SWEDISH UNIVERSITY OF AGRICULTURAL SCIENCES (SE)
- 16): CENTRAL LABORATORY OF GENERAL ECOLOGY (BG)

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The core of the whole activity is the European Long Term Ecosystem Research network

The main EU added values of the project are:

- 1) the long-term ecological monitoring of environmental ecosystem quality in the LTER permanent site network
- 2) the large geographical European scale (11 countries involved),
- 3) the trans-ecodomain (terrestrial, freshwater and marine ecosystems) approach.

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PROJECT OBJECTIVES

(1) Provide ecological data and information on long-term trends of terrestrial, freshwater and marine ecosystem quality at the European scale, with reference to habitat types (including Natura 2000 network) and environmental gradients. The analysis of the long-term ecological series of data and its comparison at the appropriate scales, across eco-domains will supply a relevant scientific support to the EU environmental policy and conservation plans in an integrated ecosystem approach.

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PROJECT OBJECTIVES

(2) Provide and develop an integrated information management system on status and long-term trend of environmental quality. This will be done at European level and at several smaller scales of analysis. Access to information and resources will be created and expanded beyond the current LTER approach, but capitalizing on its tools. The system will be accessible not only to the scientific community, but also to policy-makers and stakeholders. Experiences from this activity as a test case and feasibility study will be of high value for the development of the technical components of the Shared Environmental System for Europe (SEIS).

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PROJECT OBJECTIVES

(3) Develop and setting-up in the field an integrated and permanent site-system to detect and evaluate changes in environmental quality across Europe. This objective will be achieved by using harmonized methods, proposed and shared by the whole Long-Term Ecosystem Research (LTER) scientific and technical community, thus substantially contributing to the work of the LTER-Europe expert panel on standardization.

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PROJECT OBJECTIVES

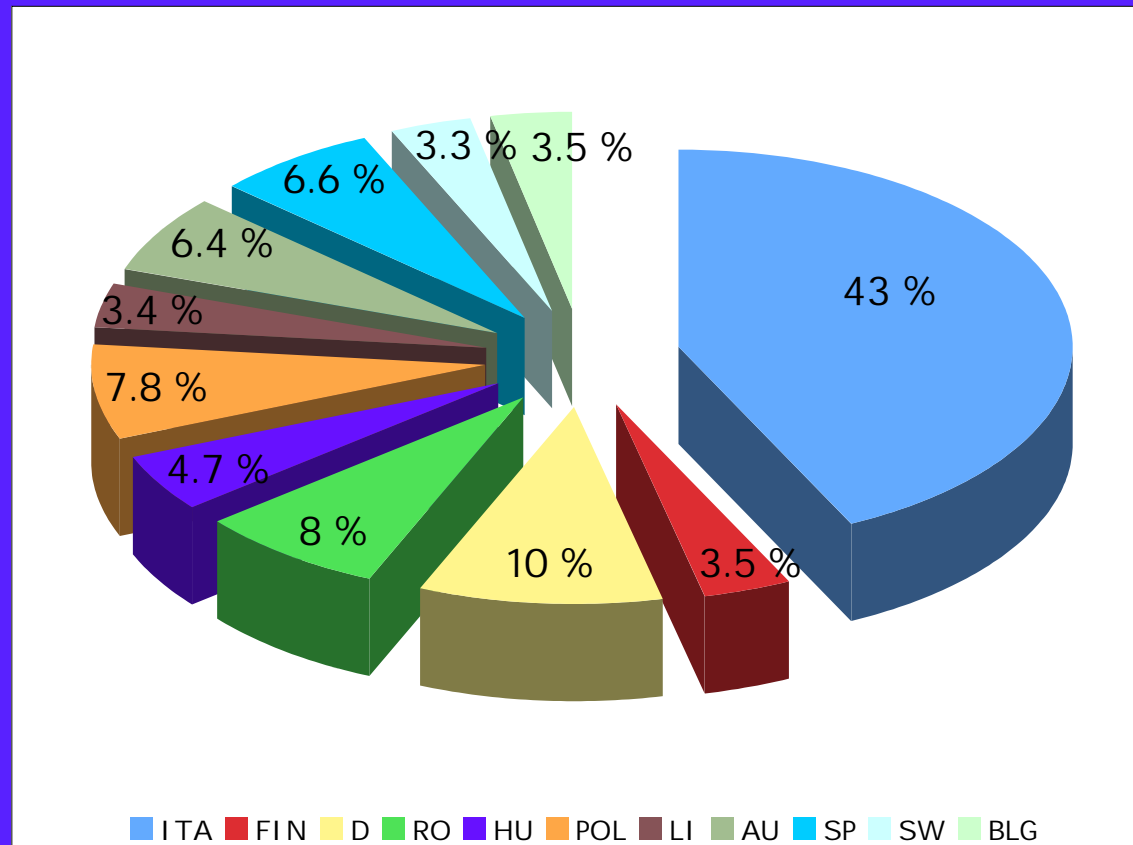
(4) Select, on the basis of ecological long-term data and feasibility test in the field, a set of key environmental quality indicators sensitive to defined major pressures and drivers. This will be done in the context of a joint and interactive knowledge exchange between science and policy, through a process of scientific selection, integration and aggregation on one side, and of knowledge production and use on the other. Within this context the stakeholder perspectives will be integrated as a fundamental tool to determine both indicator quality and acceptance.

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Total Project budget: 6.067.876

Total eligible Project budget: 6.007.876

EC financial contribution requested: 3.003.938



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ACTIONS INVOLVED

- Action 1 - Data collection and management (AU).
- Action 2 - Parameter and method elaboration (D).
- Action 3 - Cause-effect analysis and scientific evaluation (RO).
- Action 4 - Network Design (ITA).
- Action 5 - Testing in the field (ITA).
- Action 6 - Strategic actions and dissemination (ITA).
- Action 7 - Project Management (ITA).

Breakdown of costs for Actions

Actions	%
A1	11,8
A2	10,8
A3	9,5
A4	9,7
A5	29,9
A6	15,3
A7	13,0

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Proposed choice of LTER sites and parameters

PARAMETERS

- Extended discussion started during the LTER Meeting in Spain (Coto Donana, January 2008), continued in Italy (July 2008), and by mail exchanges among project beneficiaries
- MAIN CRITERIA: * estimated ecological importance, * long-term availability, * condivision among countries and sites

SITES

- proposed and discussed from July (Italy meeting) on
- MAIN CRITERIA: broad-scale, trans-ecodomain approach: terrestrial, freshwater and marine; maximum site number



PARAMETERS TO BE ASSESSED IN PARTICIPATING LTER SITES

Meteorology (Air temperature and humidity, precipitation, wind speed, irradiance, etc.)

all ecosystem types

Primary Productivity

Plant vascular species

Target species (birds, fish, etc.)

Phenological cycle

Forest structure and Leaf Area Index

only terrestrial

Fragmentation of natural areas

Soil temperature and chemistry

Tree condition

Invertebrates in terrestrial ecosystems

Athmospheric deposition (N,S etc)

Pollutants (ozone)

Detritus cycle (deadwood in forest ecosystems)

Water column (temp, salinity, nutrients etc) in freshwater/marine ecosystems

only freshwater/marine

Sediments (texture, redox, nutrients etc) in freshwaters

Detritus cycle (sediments) in freshwater/marine ecosystems

Phytoplankton dynamics in freshwater/marine ecosystems

Bacterioplankton dynamics in freshwaters

Macrophytobenthos in freshwater/marine ecosystems

Microphytobenthos in marine ecosystems

Zooplankton dynamics in freshwater/marine ecosystems

Zoobenthos in freshwater/marine ecosystems

Necton community in freshwater/marine ecosystems

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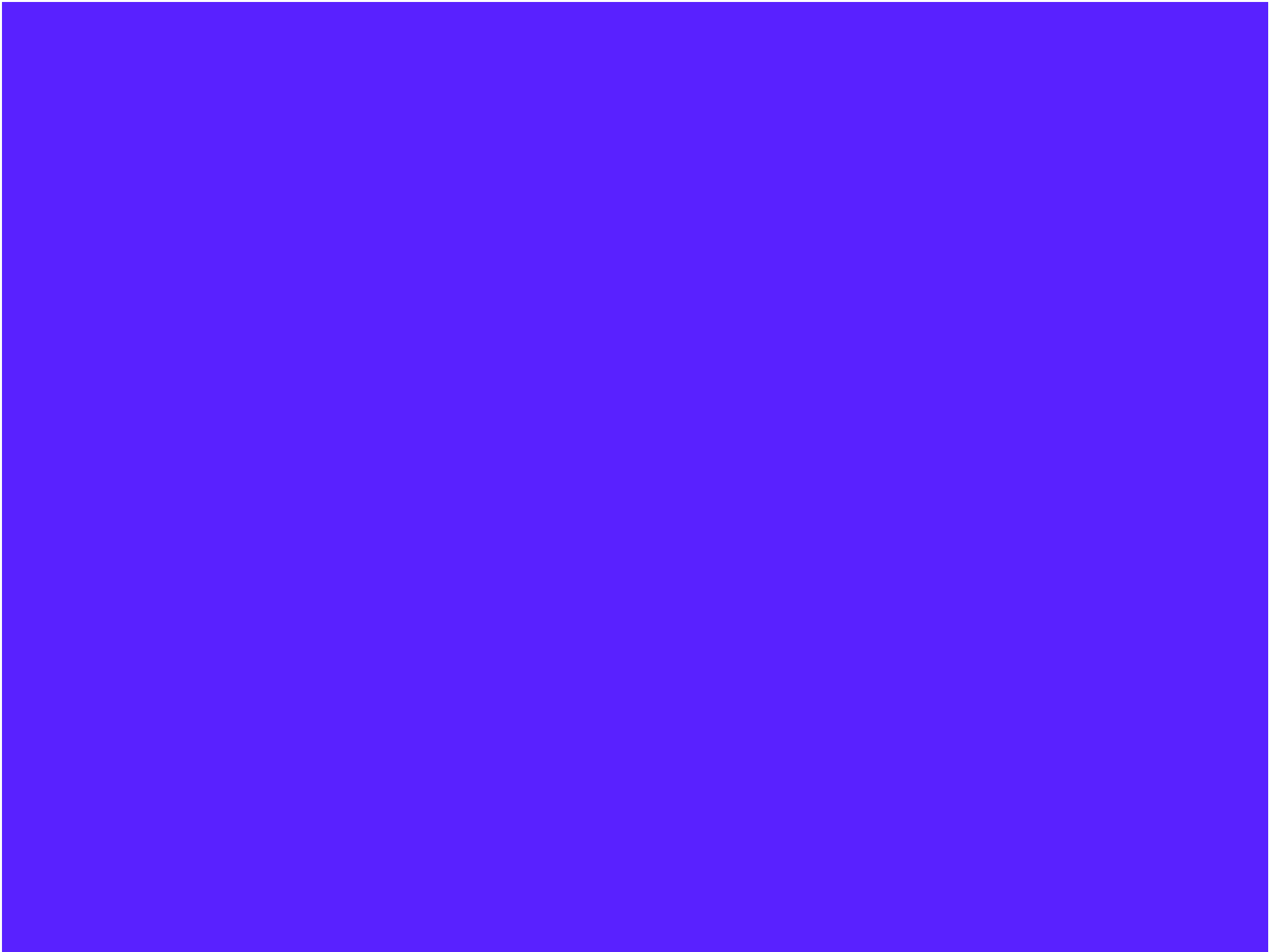
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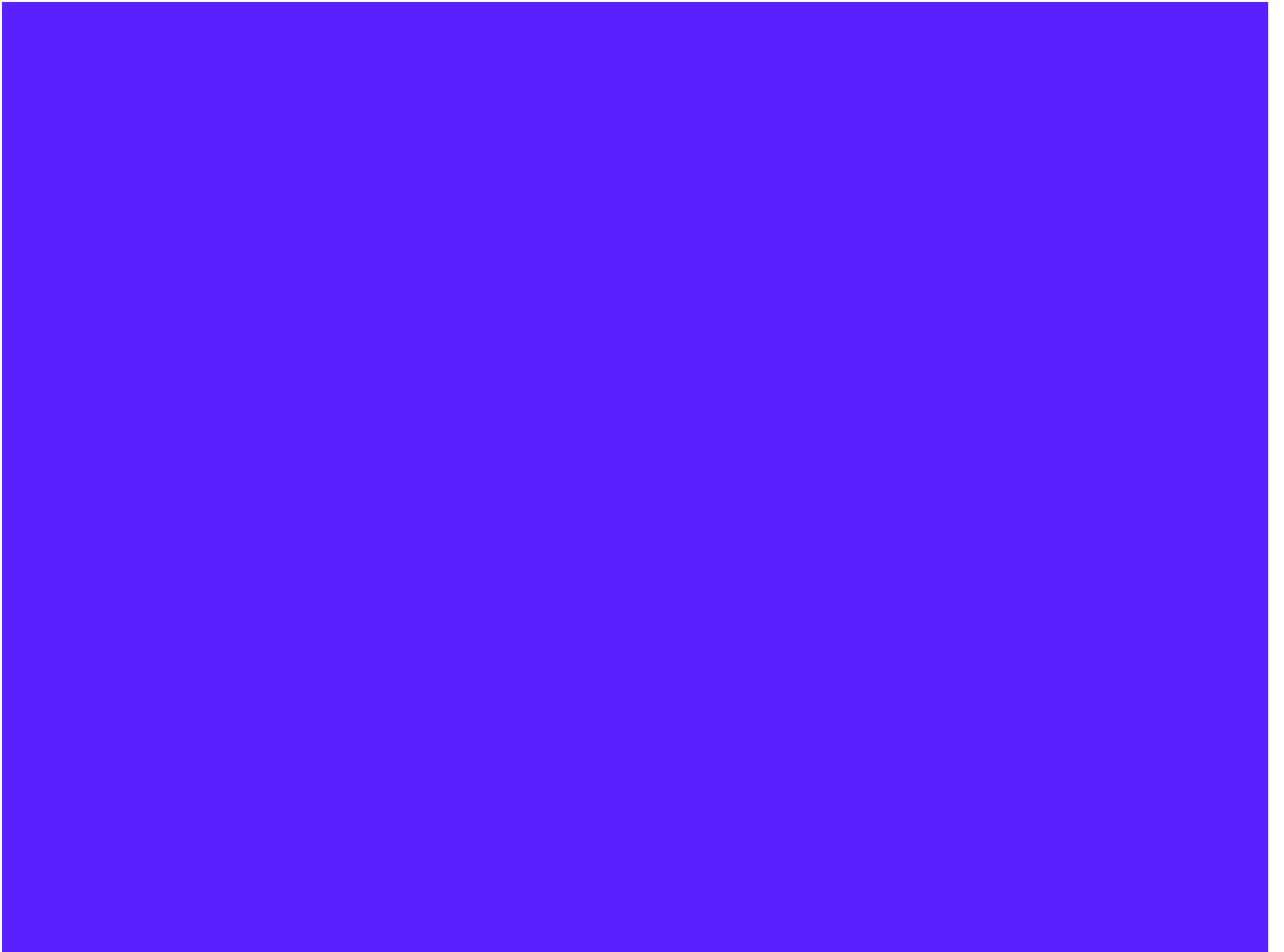
ECOSYSTEM TYPE/COUNTRY	TOT.	Countries
FOREST	26	8
ALPINE	4	3
COASTAL TERRESTRIAL	3	3
TERRESTRIAL COMPLEX	13	6
FRESHWATER	18	9
MARINE	10	6
TOTAL	74	11

Freshwater: 08 Subalpine Lakes, 09 Lentic Env. Apennines, 10 Lake Sardinia

Marine: 11 North Adriatic Sea, 12 Gulf of Naples, 15 Lagoon of Venice

Terrestrial: I T02 Forests of Alps, I T03 Forests of Apennines, I T04 Mediterranean Forests, I T05 Lowland forests







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SOME BACKGROUND INFORMATION

GMES

GMES (Global Monitoring for Environment and Security) is a European initiative for the implementation of information services dealing with environment and security.

GMES will be based on observation data received from Earth Observation satellites and ground based information. These data will be coordinated, analyzed and prepared for end-users.

Through GMES the state of our environment and its short, medium and long-term evolution will be monitored to support policy decisions or investments.

GMES is a set of services for European citizens helping to improve their quality of life regarding environment and security.

GMES will be built up gradually: it starts with a pilot phase which targets the availability of a first set of operational GMES services by 2008 followed by the development of an extended range of services which meet user requirements.

SOME BACKGROUND INFORMATION

SEIS

The Shared Environmental Information System (SEIS) is a collaborative initiative of the European Commission and the European Environment Agency (EEA) to establish together with the Member States an integrated and shared EU-wide environmental information system. This system would tie in better all existing data gathering and information flows related to EU environmental policies and legislation. It will be based on technologies such as the internet and satellite systems and thus make environmental information more readily available and easier to understand to policy makers and the public.

The underlying aim of SEIS is also to move away from paper-based reporting to a system where information is managed as close as possible to its source and made available to users in an open and transparent way. According to the SEIS concept, environmentally-related data and information will be stored in electronic databases throughout the European Union. These databases would be interconnected virtually and be compatible with each other. The proposed SEIS is a decentralised but integrated web-enabled information system based on a network of public information providers sharing environmental data and information. It will be built upon existing e-infrastructure, systems and services in Member States and EU institutions.