# ENVEUROPE

LIFE 08 ENV/IT/000399

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

Submitted: November 2008

Approved: November 2009

January 2010-December 2013

# ENVEUROPE

EnvEurope is a Life+ (2008) Project, with some notable peculiarities in respect to the "usual" Life projects:

1) The large partnership (16 Beneficiaries, 11 EC Countries)

2) The high budget

Why has it been approved?

1) Its rationale and aims match up with the main targets of the DG Environment and of the Life + "Environmental policy and Governance" component itself

2) The proposed activities are fully coherent with SEIS and GMES (on which the call focussed)

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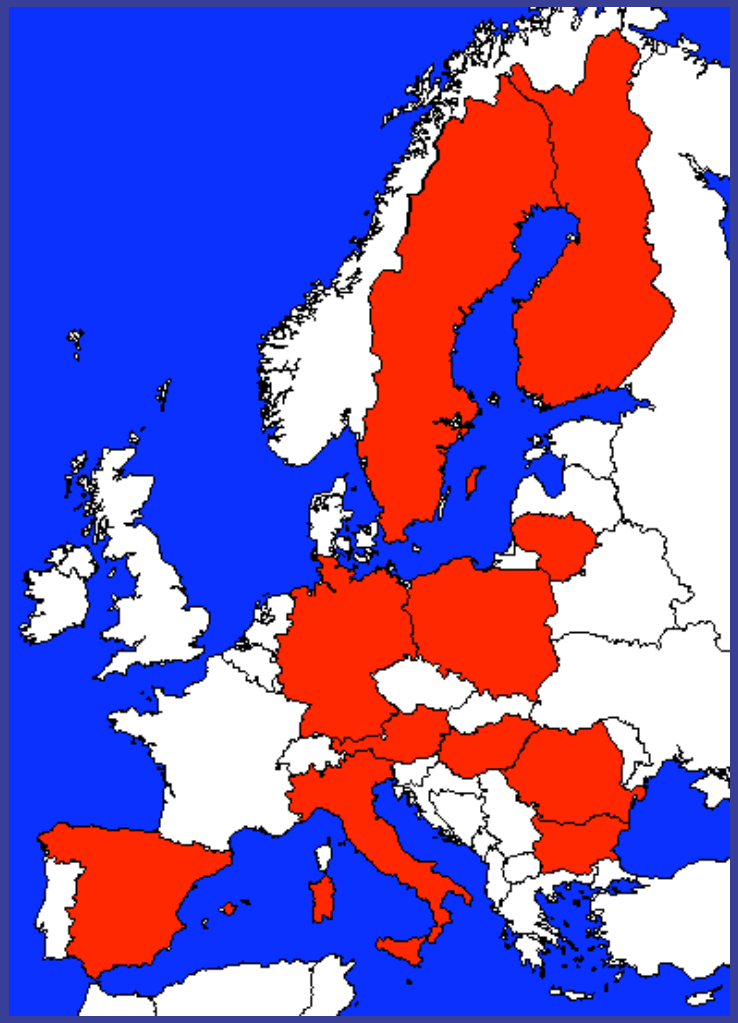
ENVEUROPE PARTNERSHIP



11 LTER countries:

Italy
Austria
Bulgaria
Finland
Germany
Hungary
Lithuania
Poland
Romania
Spain
Sweden

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## COORDINATING BENEFICIARY

## ITALY

### NATIONAL RESEARCH COUNCIL (CNR)

CNR is the major Italian public research institution. It is organized in eleven Departments and it includes more than 100 research institutes.

The "Earth and Environment" Department is directly involved in the present project, with three research institutes:

- the Institute of Marine Science (ISMAR)
- the Institute of Agro-Environmental and Forest Biology (IBAF)
- the Institute for Ecosystem Study (ISE)

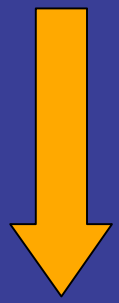
ISMAR: Alessandra Pugnetti, Mariangela Ravaioli
IBAF: Giorgio Matteucci
ISE: Roberto Bertoni

# ENVEUROPE BENEFICIARIES

| | |
|---|---|
| AB2 CORPO FORESTALE DELLO STATO (IT): | ENRICO POMPEI, FRANCO MASON |
| AB3 UNIVERSITY OF JYVÄSKYLÄ (FI): | JUHA KARJALAINEN |
| AB4 SENCKENBERG, RESEARCH INSTITUTES AND NATURAL HISTORY MUSEUMS (DE): | PETER HAASE |
| AB5 HELMOTZ, CENTRE FOR ENVIRONMENTAL RESEARCH (DE): | MARK FRENZEL |
| AB6 UNIVERSITY OF BUCHAREST, DEPARTMENT OF ECOLOGY (RO): | MIHAI ADAMESCU |
| AB7 FOREST RESEARCH AND MANAGEMENT INSTITUTE (RO): | OVIDIU BADEA |
| AB8 UNIVERSITY OF DEBRECEN (HU): | ILONA MESZAROS |
| AB9 HUNGARIAN ACADEMY OF SCIENCES (HU): | MIKLOS KERTESZ, LAJOS VOROS |
| AB10 EUROPEAN REGIONAL CENTRE FOR ECOHYDROLOGY U/A UNESCO, INTERNATIONAL INSTITUTE OF POLISH ACADEMY OF SCIENCES (PL): | KINGA KRAUZE |
| AB11 INSTYTUT EKOLOGII TERENÓW UPRZEMYSŁOWIONYCH (PL): | TOMASZ STASZEWSKI |
| AB12 LITHUANIAN UNIVERSTITY OF AGRICULTURE (LT): | ALGIRDAS AGUSTAITIS |
| AB13 FEDERAL ENVIRONMENTAL AGENCY (AT): | MICHAEL MIRTL, JOHANNES PETERSEIL |
| AB14 SPANISH NATIONAL RESEARCH COUNCIL (ES): | RICARDO DIAZ DELGADO |
| AB15 SWEDISH UNIVERSITY OF AGRICULTURAL SCIENCES (SE): | LARS LUNDIN |
| AB16 CENTRAL LABORATORY OF GENERAL ECOLOGY (BG): | SVETLA BRATANOVA-DONCHEVA |

## "EXTERNAL" PARTNERS

The choice of the Beneficiaries has been made by including always the national network responsibles; however this did not allow completing the whole picture of institutions working in the project and in the proposed sites.



"External" Partners

1) structure and complexity of the LTER network itself and of the organization and management peculiar to each national LTER site;
2) constraints of limiting the number of beneficiaries, due to project management consideration.

# ENVEUROPE  LTER EUROPE

THE PROJECT WAS BORN AND WILL DEVELOP WITHIN THE LTER EUROPE COMMUNITY

IT SHARES WITH LTER-EUROPE

-THE PARTNER CONSORTIUM

-THE SCIENTIFIC VISION

-THE MAIN AIMS

-THE SWOT

# ENVEUROPE ⟷ LTER EUROPE

## STRENGTHS & OPPORTUNITIES

- BROAD PARTNERSHIP
- EXISTING ECOLOGICAL DATA
- EXISTING IN SITU FACILITIES
- INTERDISCIPLINARITY
- BROAD SCIENTIFIC SCOPE
- POTENTIAL SUPPORT TO DECISION MAKERS

## WEAKNESS & THREATS

- HETEROGENEITY
- COMMON LANGUAGE
- COMMON RESEARCH QUESTIONS
- DATA SHARING
- DATA/METHODS/PARAMETERS COMPARISON

# ENVEUROPE

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)

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## PROJECT OBJECTIVES

- Provide and develop an integrated information management system on status and long-term trend of environmental quality → Contribution to the technical components of the Shared Environmental System for Europe-SEIS.

- Provide ecological data and information on long-term trends of terrestrial, freshwater and marine ecosystem quality at the European scale → Scientific support to the EU environmental policy and conservation plans.

- 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 → Joint and interactive knowledge exchange between science and policy.

- Define harmonized parameters and methods, proposed and shared by the whole LTER community

- Strategic actions and interfaces and dissemination towards related networks and institutions. (EEA, ILTER, LifeWatch, EIONET, SEIS & INSPIRE, GMES)

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The existing LTER network provides a series of pilot sites (marine, freshwater and marine) of historical as well as new monitoring data.

| ECOSYSTEM TYPE/COUNTRY | AU | BU | DE | HU | FI | LT | IT | PL | RO | SP | SW | TOT. | Countries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FOREST | 3 | 3 | 1 | 2 | | | 4 | 4 | 1 | 4 | 4 | 26 | 9 |
| ALPINE | | | | | | | 1 | | 1 | 2 | | 4 | 3 |
| COASTAL TERRESTRIAL | | | | | | 1 | 1 | | | 1 | | 3 | 3 |
| TERRESTRIAL COMPLEX | | 1 | 2 | 1 | | 2 | | 2 | 2 | 2 | | 12 | 7 |
| FRESHWATER | 1 | 1 | 2 | 2 | 1 | | 3 | 4 | 2 | | | 16 | 9 |
| MARINE | | 1 | 2 | | 1 | | 3 | | | 2 | | 9 | 6 |
| TOTAL | 4 | 6 | 7 | 5 | 2 | 3 | 12 | 10 | 6 | 11 | 4 | 70 | 11 |

Check and confirmation of these sites has almost been completed in the starting phase of the project, but still in progress!

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## PROJECT ACTIONS

ACTION 1 - DATA COLLECTION AND MANAGEMENT (AU)

ACTION 2 - PARAMETER AND METHOD ELABORATION (DE)

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)

ACTION 8 - MONITORING AND EVALUATION (PL)

# ENVEUROPE

A 1 JOHANNES PETERSEIL
A 2 MARK FRENZEL
A 3 MIHAI ADAMESCU
A 4 ENRICO POMPEI
A 5 GIORGIO MATTEUCCI
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A 6 MARIANGELA RAVAIOLI
A 7 ALESSANDRA PUGNETTI
A 8 KINGA KRAUZE

## ACTION RESPONSIBLES

-The AR is the associated beneficiary identified by the proposal responsible for actions implementation.

-The AR drafts the detailed plan of the action work (Action Plan). The Action Plan will detail activity, responsibilities and foreseen deliverables and milestones for each associated beneficiary.

- The AR coordinates and manages the associated beneficiaries involved in the action.

- The AR shall provide to the coordinating beneficiary all information and documentation regarding the state of implementation of the action and the respect of the action work plan for the technical activity report.

# ENVEUROPE ACTIONS

## Data collection and management (Action 1)

The action aims to support the network of long-term ecosystem monitoring sites with the necessary **data infrastructure** and will serve as a **conceptual test case** for Shared Environmental Information Systems (SEIS):

- usability of the LTER network data to facilitate biodiversity and ecosystem monitoring in Europe
- necessary data flows among sites and between sites and users
- interfaces from the measurements at the sites to the calculation of the state and trends of ecosystem quality as well as cause-effect relationships
- analyze to what extent the chosen approaches in structuring metadata and data as well as the tools used can contribute to the development of the European Shared Environmental Information Systems (SEIS).

# ENVEUROPE ACTIONS

## Parameters and methods elaboration (Action 2)

Starting from the existing metadata and data of participating LTER sites (collected by Action 1):

- Identification of the parameters measured at the selected LTER sites
- Definition of a core set of abiotic and biotic parameters
- Compilation of updated methods and protocols
- Provision of harmonized methods and protocols (for A5 Field Testing)
- Final manual of harmonized parameters & methods

The common (new or old parameters/indicators) will be shared and measured and collected at the selected LTER sites with agreed and harmonized methodologies

Test case for sampling activity coordination across LTER sites

"Testing in the Field" (Action 5)

# ENVEUROPE ACTIONS

## From parameters to indicators (Action 2 and 3)

ON WHICH INDICATORS SHOULD WE FOCUS?

Most of the project results and conclusions will be based on these selections

DISCUSSION ON:

- Which are the main environmental threats that have been faced at the chosen LTER sites?

- Which are the main hypothesis that have been driving the research and monitoring programmes at the LTER sites?

- Which are the core typologies of the measurements?

- Which trend of these measurements can be used as indicators?

- Which are the scientific/managing questions behind the choice of indicators?

# ENVEUROPE ACTIONS

## From parameters to indicators (Action 2 and 3)

The choice of the suitable indicators will be based on:

- Expertise and knowledge on the long-term dynamics of ecosystems gathered by the LTER-Europe sites (including different scales - from community to landscape level)

- The DPSIR framework considering also the socio-economic importance of ecological parameters and the impact of and on management

- A set of environmental quality indicators, based on 10-15 key parameters, (European Commission Communication COM(2006)216 for halting biodiversity loss, EEA SEBI2010 Report 2007, EEA Forest Types Report 2006, SEBI2010 Forest Status Indicator Report, EU Water Framework Directive 2000/60/EC, EEA Core Set of Indicators...).

# ENVEUROPE ACTIONS

## Trends and cause-effect analysis (Action 3)

- Focus on the analysis of historical and newly gained ecological data coming from some of the chosen LTER sites.

- Evaluation of the status, trends and cause-effect relationships at different spatial and temporal scales.

- Formulation of clear, biologically sound hypotheses

- Selection of the appropriate data in the time series

- Application of adequate analytical/statistical procedures

- Communication of the result to the political arena, the relevant managers, the general public, and the scientific community

# ENVEUROPE ACTIONS

## Network design (Action 4)

Produce know-how on organization of monitoring sites at different scales of observation, linking them for better information flow and high quality value of research. This "new" network should provide high quality environmental data for policy makers

- Which are (or should be) the LTER network user requirements?
- Can the main environmental questions be answered by the existing sites?
- Are the necessary measurements already being made?
- Are new sites needed?

# ENVEUROPE ACTIONS

## Testing in the Field (Action 5)

Testing in the field of new and existing parameters

To assess the state and trend of European ecosystems for a set of commonly established parameters

Core set of parameters will be collected at approx. 70 sites, all ecosystem types

Applying agreed and harmonized methodology:

- ✓ different levels/scales of investigation
- ✓ specific monitoring intensities
- ✓ methods adjusted to assessment intensity
- ✓ multi-level and multi-functional approach

# ENVEUROPE ACTIONS

## Testing in the Field (Action 5)

A newly defined set of parameters corresponding to selected indicators will be collected

Manual and methods will be tested and put into practice

The usefulness of data for calculation of indices will be assessed and recommendations included into manuals.

Parameters will be sampled at the relevant level. Some of them will be tested at all levels, from large-scale network to intensive monitoring sites.

# ENVEUROPE ACTIONS

## Strategic Actions and Dissemination (Action 6)

Disseminate EnvEurope goals and results at a large:

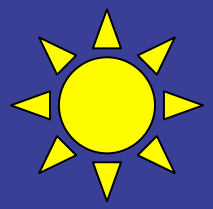
- **LIFE+ commission** and other relevant trans-national **consortia** awarded under LIFE+ in the field of ecosystem monitoring;
- **Strategic network and initiatives:** LTER-Europe, UN/ECE ICP, SEIS, GMES, EIONET, Marbef+, Noe ALTER-Net
- Policy maker and relevant **international stakeholders** in charge for ecosystem monitoring at EU level (EU commission, European Environment Agency, EC Joint Research Centre, etc.)
- General public and scientific community (academia)

# ENVEUROPE ACTIONS

EnvEurope Logo

ENV europe

Environmental quality and pressures assessment across Europe



# Irai

*"I", means "the past" "rai", means "the future"*
*The present is included in these two*
*Irai incorporates the present moment that links past and future.*

*Nichiren Daishonin, 1222-1282*

Through good actions in the present we can step into the future leaving a better past behind us…