

EXPEER

after Anaee

**EXPEER**

**Distributed Infrastructure for  
EXPErimmentation on Ecosystem Research**

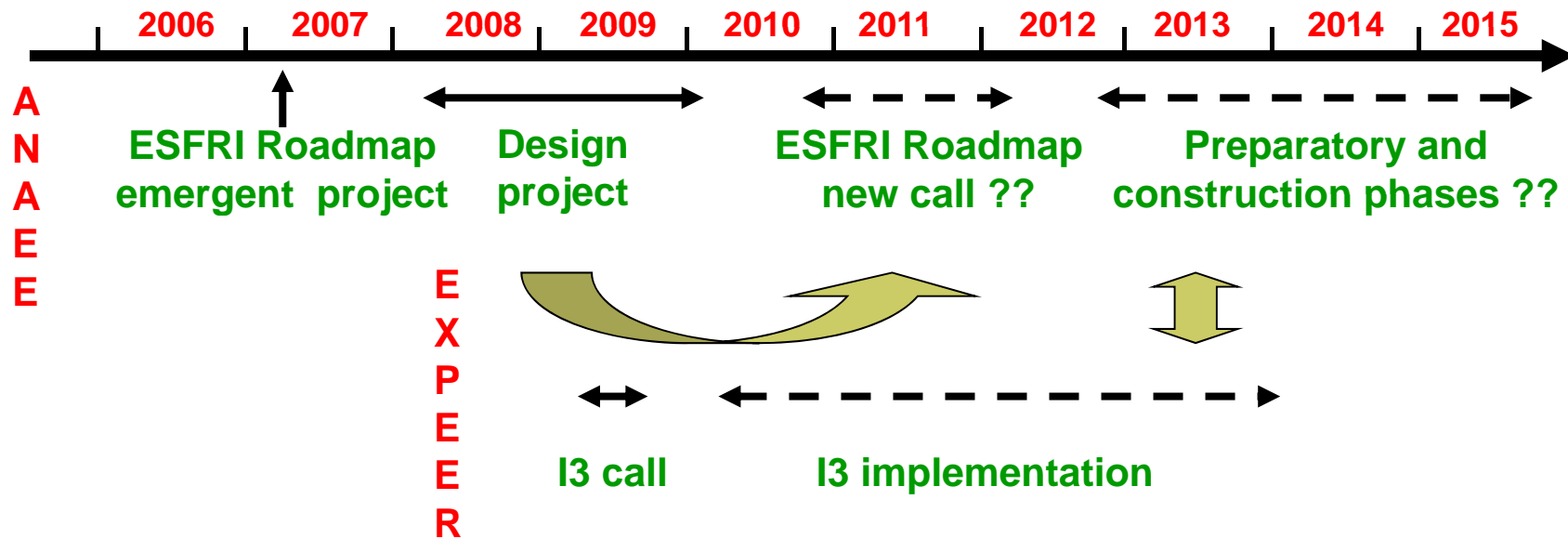
## Sites and experimental platforms for long-term ecosystem research

- ↪ Integrating the key research infrastructures in Europe for multidisciplinary research and data collection;
- ↪ Includes facilities for long-term observation of anthropogenic impacts on ecosystem functioning and biodiversity.

# Objectives of ANAEE/EXPEER

- ↪ Foster the development of infrastructures for the study of ecosystems through specific member state perennial funding thanks to communication activities and lobbying

# FP7 Available tools specific for infrastructures



# Complementary approaches to support infrastructures

CLIMOOR (1998-2000), VULCAN (2000-2004) → I3 INCREASE (2009-2013)(6 sites)

CarboEuroflux, Carbo-Europe (2004-2008)

CarboMont, Medeflux .....

I3 IMECC (2007-2011)  $\simeq$  ICOS

FP7 Carbo-Extreme (2009-2013)  
(WP2 12 sites)

MIND, NITREX, VULCAN, IMAGINE,  
CLUE .....

ESF ClimMani (2009-2013)  
data synthesis ..

- ↪ *current fragmentation between disciplines is a key barrier to putting in place an integrated approach which is needed to solve environmental problems raised by today's society*
- ↪ *problems brought about by global change (climate and land-use changes) needs to be analysed with a long-term perspective in order to take into account ecosystem inertia and feedback-loops for accurate forecasting.*
- ↪ *The research community on continental ecosystems is very fragmented and dispersed across Europe due to the huge diversity of ecosystem types (forests, grasslands, arable lands, marchlands, heathlands, ponds, lakes, rivers...) and the large eco-geographical gradient that led to separated approaches and isolated and separated research facilities.*

- ↪ from numerous temporary experimental sites funded by short term programs devoted to a single process or forcing variable,
- ↪ to a lower number of perennial sites with national and European secured funding providing high standards of experimentation and measurements for the analysis of the coupling between processes and of the interactions between forcing variables,
- ↪ ... to the specificity of EXPEER infrastructures

## of EXPEER infrastructures

↳ to understand and predict changes in ecosystem processes

- **Intensive measurements of ecosystem processes**

(biogeochemical cycles, biodiversity)

- **Experimental manipulation of at least one forcing variable**

(climate, chemistry, biodiversity, land use)

- **Some perspectives for long term functioning** with national / institutional funding



**In situ plot level**

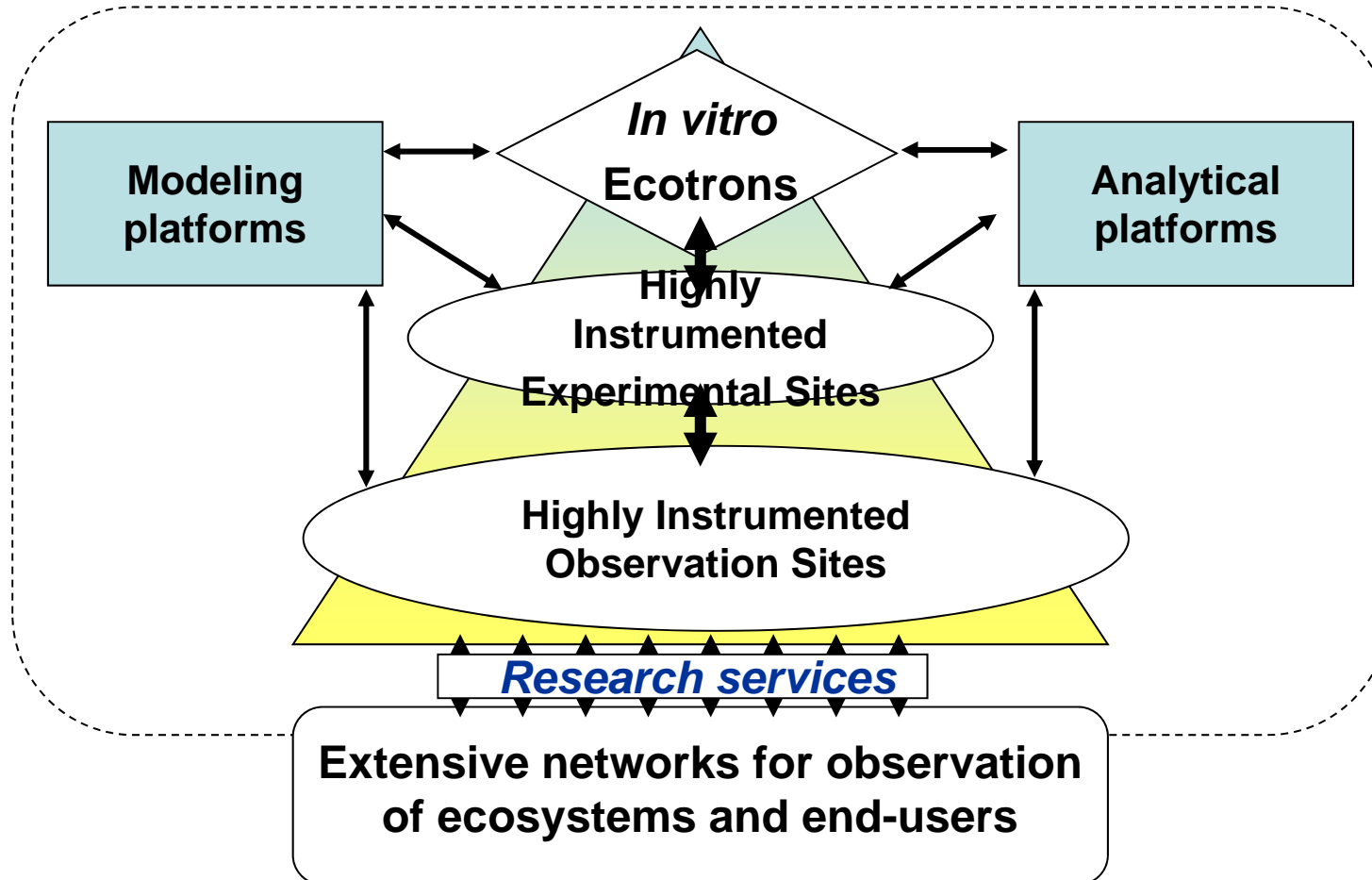
infrastructures

**In vitro large mesocosms**

infrastructures

complemented by **analytical and modeling tools**

# Relationships among the different research infrastructures



- ↙ To provide the EU scientific community with state-of-the-art research infrastructures to enable optimal understanding and forecasting of the impacts of climate change, land use change and biodiversity in continental ecosystem

- ↪ To reduce the fragmentation of existing infrastructures and related research services by structuring and modernizing highly equipped sites across Europe (as defined within ANAEE) in a sustainable manner via the Networking activities;
- ↪ To improve infrastructure performance for the EU research community by developing new methods and tools for molecular analysis, the measurement of variables and the optimization of sampling procedures via the Joint Research Activities;
- ↪ To provide the research community with access to these highly equipped sites backed up by the joint-expertise, services and data of the project consortium to enable each user research groups' needs to be fully addressed via the Transnational Access activities.

- ↪ To define a roadmap and accompanying modus operandi which outlines synergies in terms of instrumentation, models and methods via an analysis of the technical and operational capacities of highly-equipped sites (HIES and HIOS) (NA1),
- ↪ To ensure the quality of data produced by the different infrastructures by developing common standards for site equipment and instrumentation (i.e. sampling protocols, calibrating protocols...) (NA2),
- ↪ To structure and provide common access to existing site databases (NA3),
- ↪ To ensure the sustainability of the infrastructures in the medium/long term by defining a strategy for their future funding (NA4),
- ↪ To promote the infrastructures to the EU scientific community by disseminating widely the calls for access and by evaluating the quality and impact of this access to the users (NA4/5),

- ↪ To develop new sensor and novel technologies for more efficient data acquisition and analysis of ecosystem processes (RA1),
- ↪ To develop innovative methods for environmental control technique for manipulating individual environmental parameters and their feedbacks (RA2),
- ↪ To develop generic biogeochemical models and species competition for describing and forecasting ecosystems responses to environmental and land use changes (RA3),
- ↪ To develop methods for modelling/upscaling biogeochemical fluxes, ecological process and biodiversity and times series analysis (RA4),
- ↪ To improve infrastructure performance showing the value of having and continuing an infrastructure along the lines of EXPEER illustrated by sole concrete examples (RA5)

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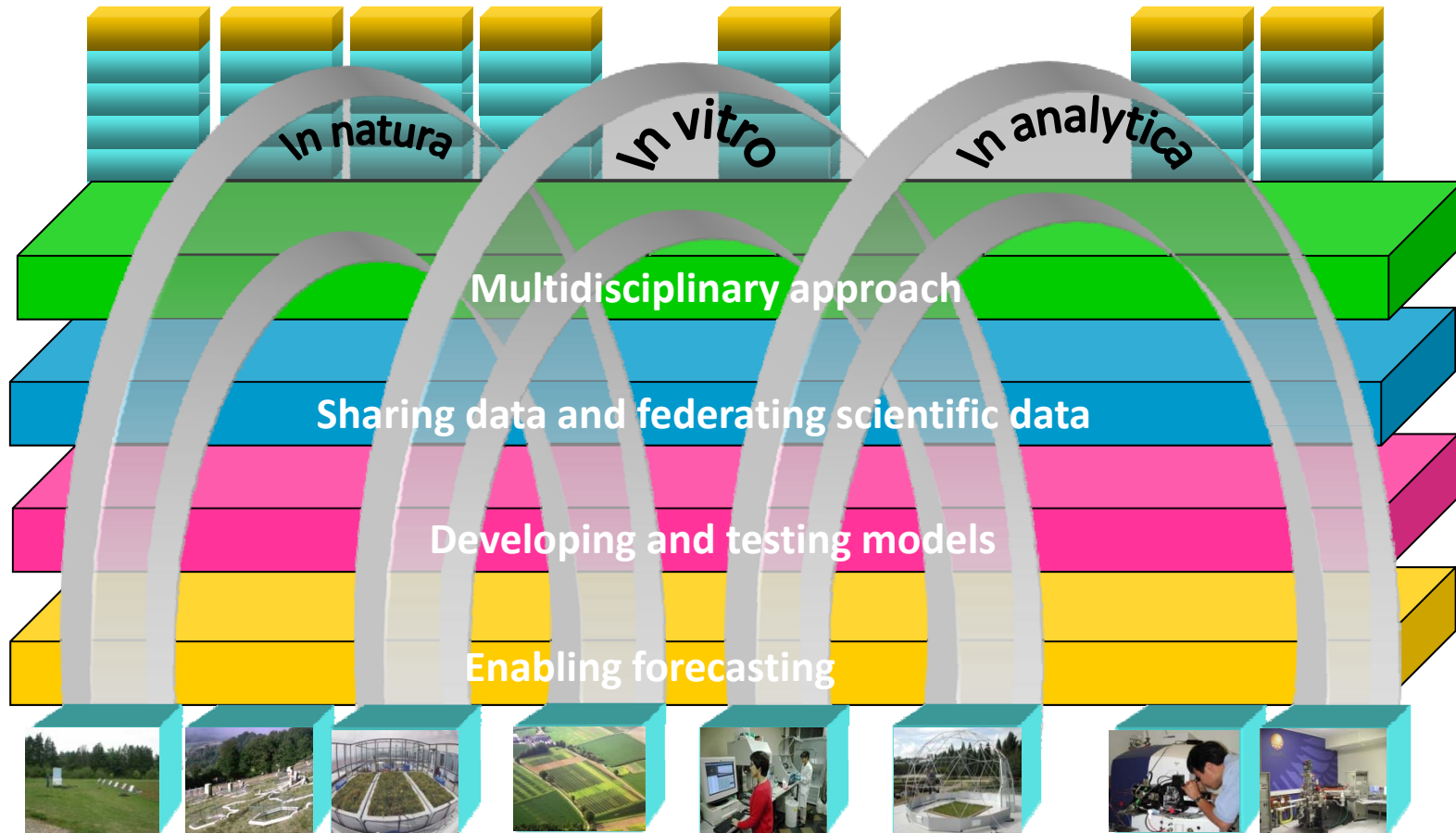
a2

this can be reformulated into an overall objective for the RA in slide n°8

abaker; 21/10/2009



# Infrastructures interconnecting communities



Scientific Platforms Facilities

- ↪ **09 Nov 09: Second draft + draft budget sent to partners**
- ↪ **13 Nov 09: Partners' feedback/input on 1<sup>st</sup> draft proposal + final budget**
- ↪ **20 Nov 09: Third draft + final budget sent to partners**
- ↪ **26 Nov 09: Last feedback and budget validation**
- ↪ **30 Nov 09: Final draft (INRA, IT)**
- ↪ **01 Dec 09: Deadline for any final changes**
- ↪ **2 Dec 09: Final submission**