"Structural Funds in support of Research Infrastructures – Synergies with Cohesion Policy and the role of Smart Specialization Strategies: LIFEWATCH – example of beneficiary"

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MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD

Symposium on European Funding Instruments for the development of Research Infrastructures

Institute of Health Carlos III

Madrid-Spain, April 19th 2016

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PART I

Introductory Context:

LifeWatch in a Nutshell

LifeWatch

E-Science European Infrastructure for Biodiversity and Ecosystem Research

LifeWatch ESFRI (European Strategy Forum on Research Infrastructures) is a pan-European e-Science distributed Infrastructure focused on how to measure the impact of Global Change issues on Earth **Biodiversity and Ecosystem Research.**

Ecosystems

Species

Time and evolution

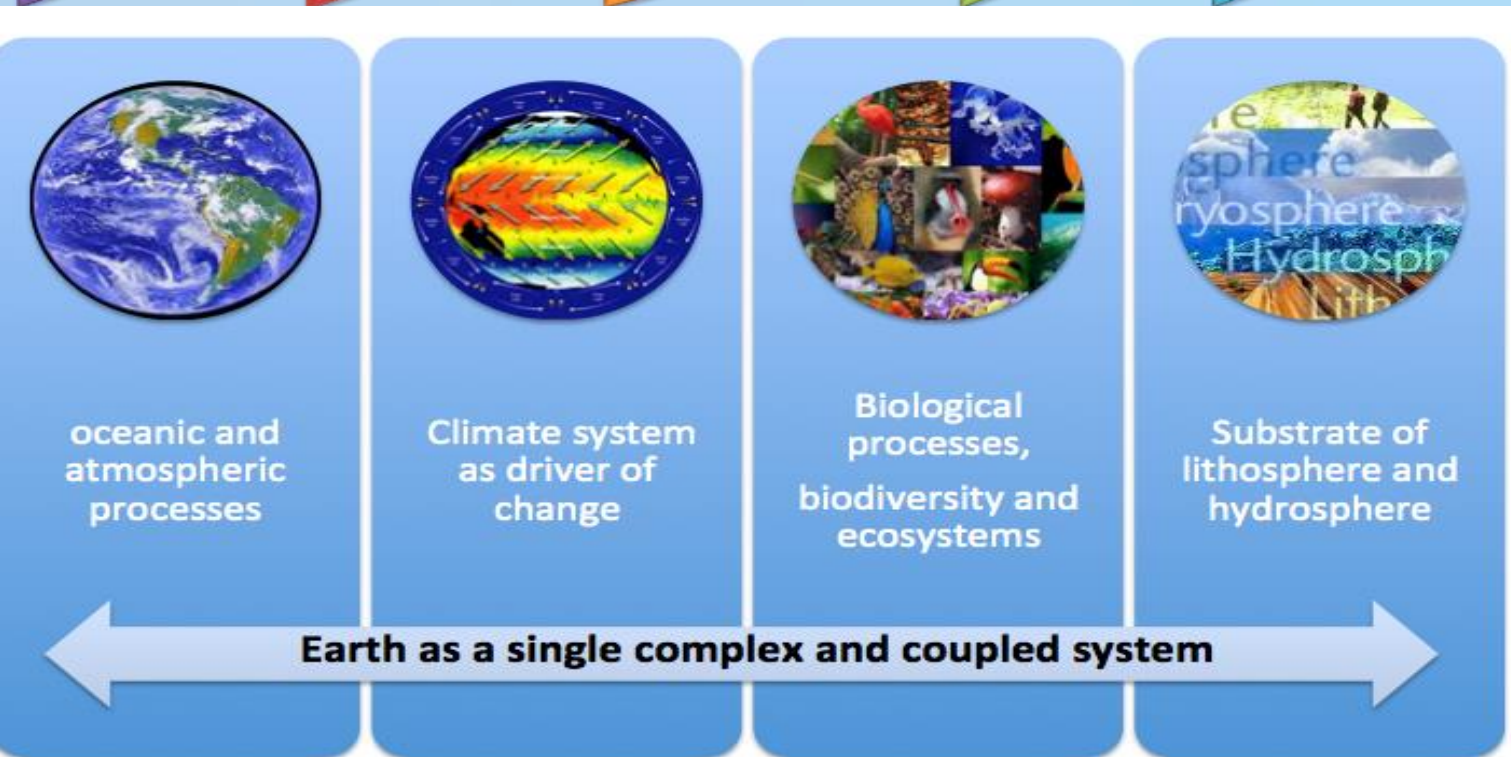
Scale

DNA, proteins and genes

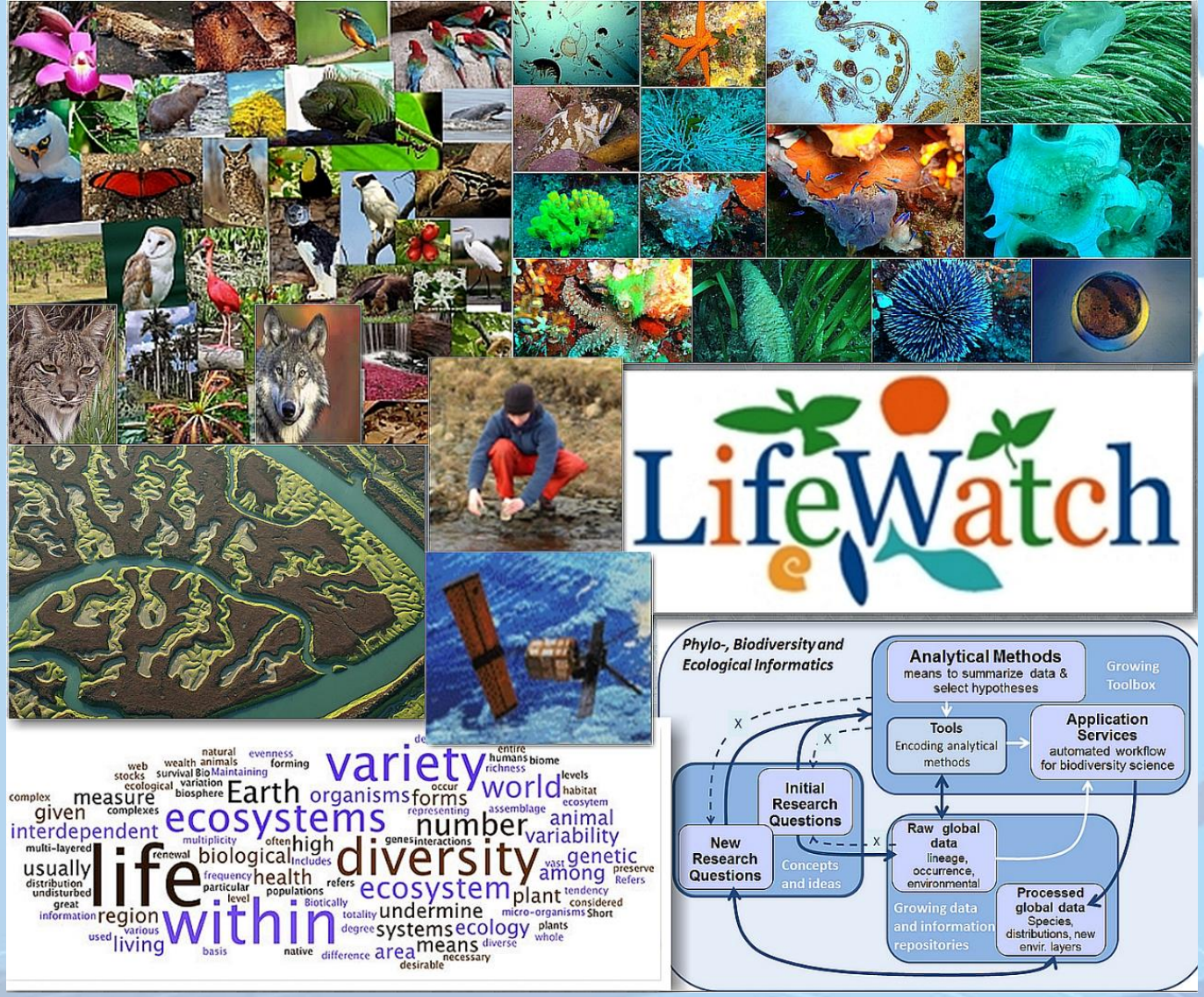
© Robert Guralnick & Andrew Hill (Univ Colorado)

addresses the big environmental challenges and support knowledge-based strategic solutions to environmental preservation.

Hot Ecological Topics (The Big Five)

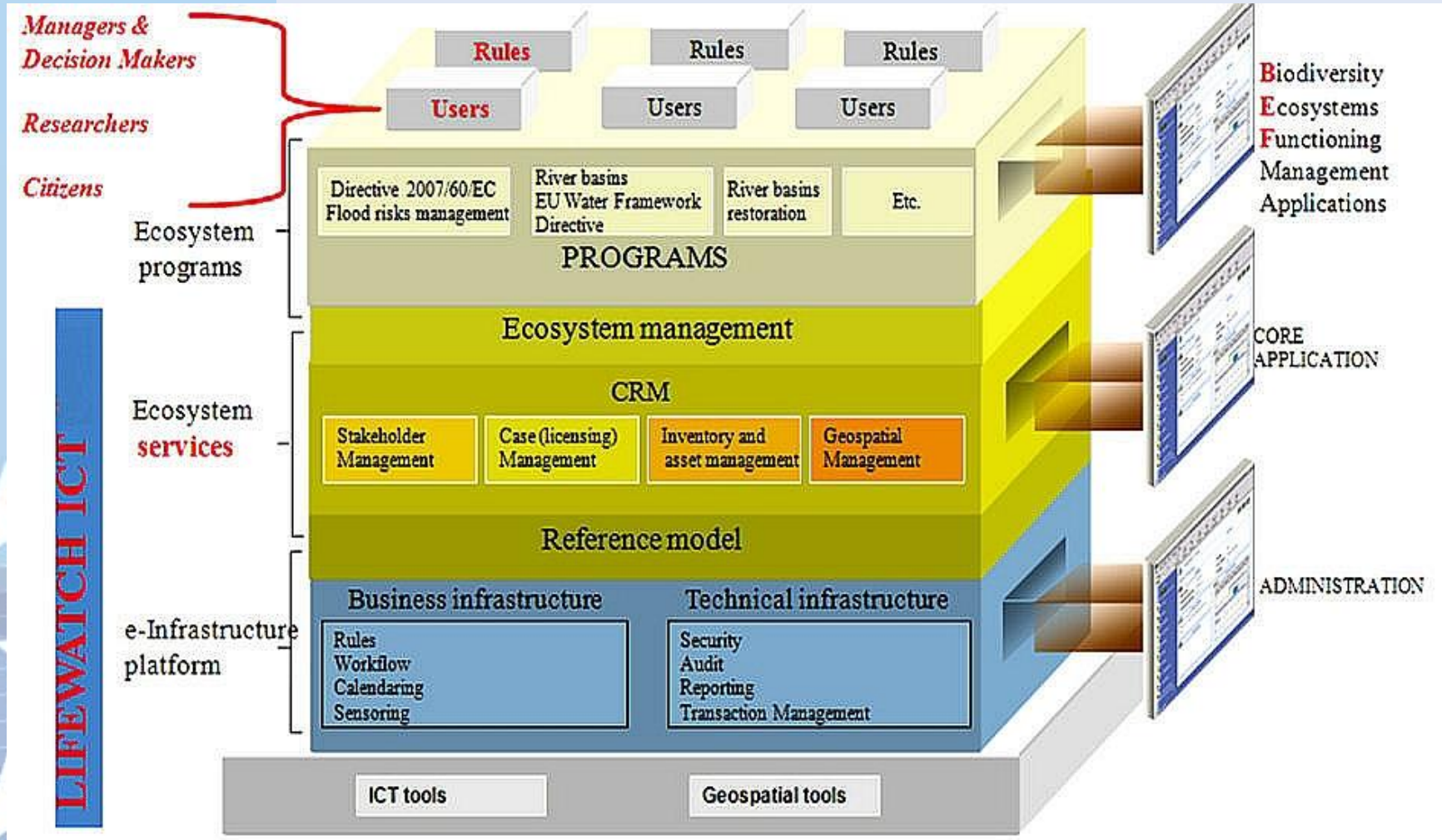


Challenges



Tackling complexity of big scientific and societal biodiversity challenges requires BIG DATA analysis from many origins.

This **mission** is achieved by providing access to a multitude of data sets, services and tools enabling the construction and operation of **Virtual Research Environments** which provide the environments for integrating data, software and computation as developed in European infrastructure cooperation.

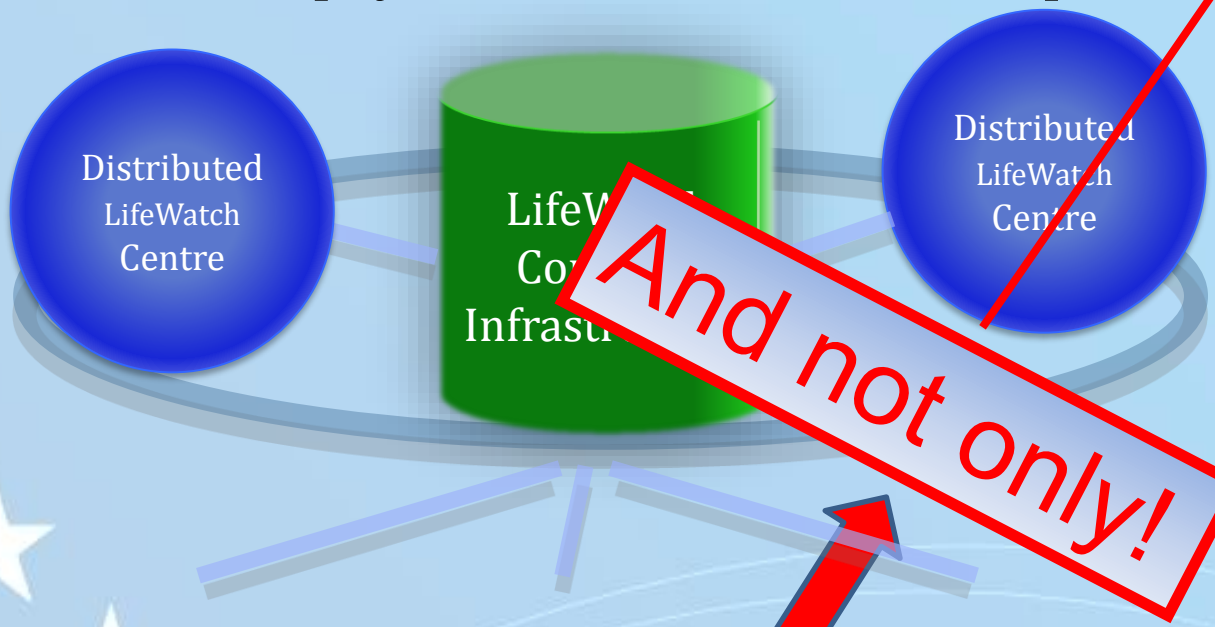


PART II

Moving from “satellite” projects contributions to the construction of a pan-European distributed & federated e-Infrastructure.

ESIF LifeWatch case study

To this end, LifeWatch is cooperating with "distributed" Centres in cooperating countries (including their REGIONS). These Centres are developing and operating virtual and physical media and other components.



TYPE: distributed
COORDINATING COUNTRY: ES
MEMBER COUNTRIES: BE, EL, ES, IT, NL, PT, RO
* March 7th, 2016 update
PARTICIPATING COUNTRIES: FI, FR, HU, NO, SE, SI, SK

TIMELINE
- ESFRI Roadmap entry: 2006
- Preparation phase: 2008–2011
- Construction phase: 2011–2016
- Operation start: 2016

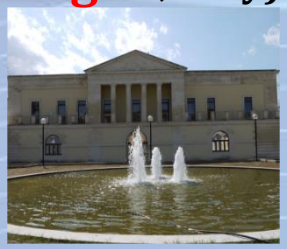
ESTIMATED COSTS
- Capital value: 66 M€
- Operation: 10 M€/year

HEADQUARTERS
Statutory Seat: Seville (ES)
Common facilities: ES-IT-NL

WEBSITE
http://www.lifewatch.eu

Virtual Labs
(Amsterdam, The Netherlands)

Service Centre
(Lecce-Region Puglia, Italy)



Headquaters, Statutory Seat & ICT e-Infrastructure
(Andalusia, Spain)

Workshop on the use of Structural Funds for the construction of distributed e-Infrastractures supporting ENVironment initiatives

May 12th, 2014

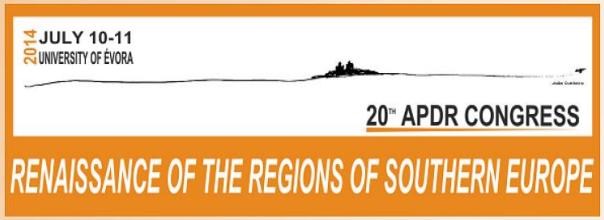
EU Commission - DG CONNECT

Avenue de Beaulieu 25, (room S1), 1160 Brussels

This interest was reflected in the attendance to this workshop, over 80 persons from 15 countries and over 20 regions

ATAS

Proceedings



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Italy, Portugal & Spain regional cooperation results

MAKING A JOINT USE OF EU-FUNDS: OPPORTUNITIES AND CHALLENGES ASSOCIATED TO EUROPEAN RESEARCH INFRASTRUCTURES

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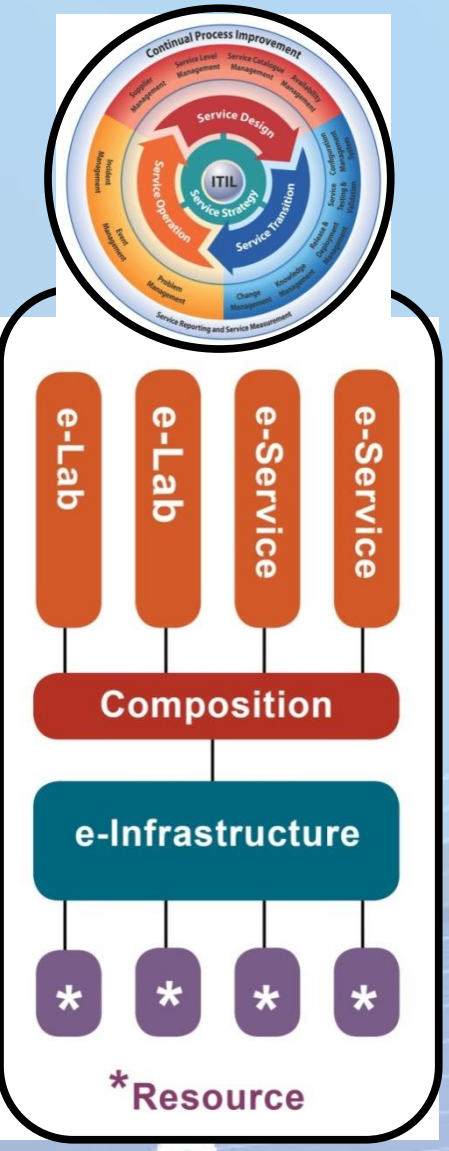
Interministerial agreements (Brussels, February 2011) and Commission Mandate based on ERIC Establishment Cooperation and Integration: PARTICIPATING COUNTRIES "in kind" contributions.



- **"Realistic" Construction and associated Business Plan (from now on CBP) based on "real" needs and users' requirements.**

- **Including a "feasible" Governance Scheme and Funding Strategy in order to guarantee the RI Sustainability based on an early identification of "in-kind" and "in-cash" Member States (including their Regions-RIS^3) contributions, consisting of at least a 5-years period "Cash Flow" Analysis.**

- **The CBP follows a sequence of releases, starting with a down-scaled level and a incremental & iterative construction methodology ("Agile"-based) with a proper Quality Assurance & Risk Management Plan associated. Establishment of the proper Working Methodologies, including Technical Advisory and Operational Committees.**

LifeWatch ERIC Distributed Construction STRATEGIC PLAN

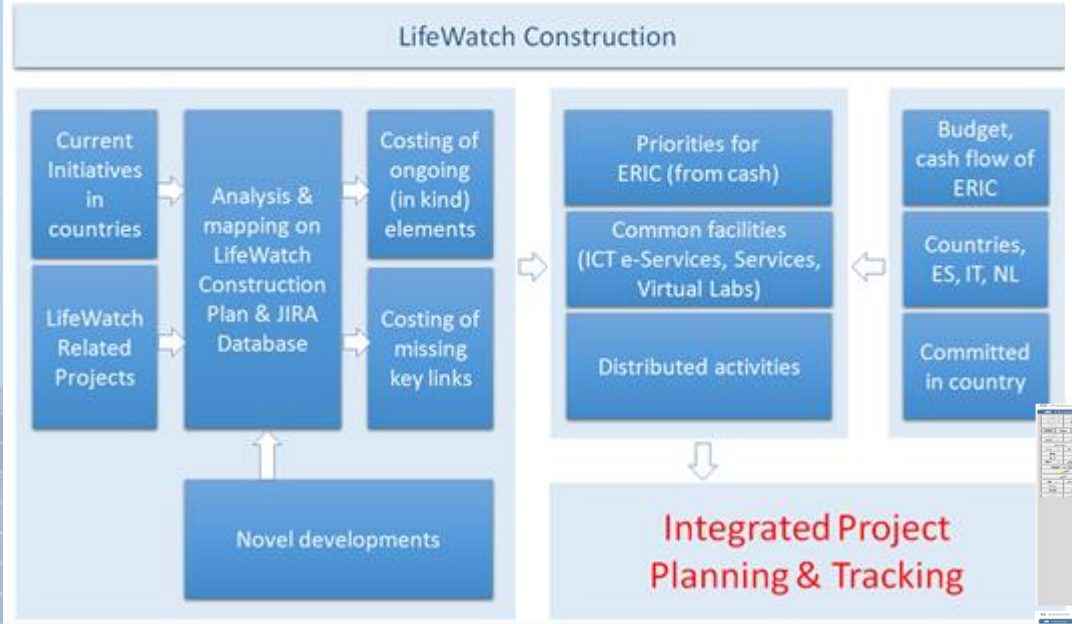
Technical working document in regards to the specific tasks for the coordination and management of the distributed construction operations of the distributed e-Infrastructure, as required by the Article 4 of the ERIC regulations directives

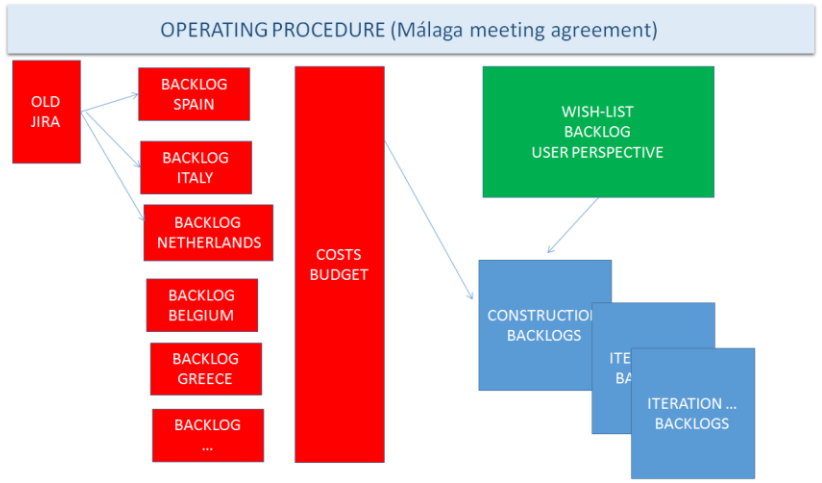
and corresponding mapping of tasks into the http://construction.lifewatch.eu

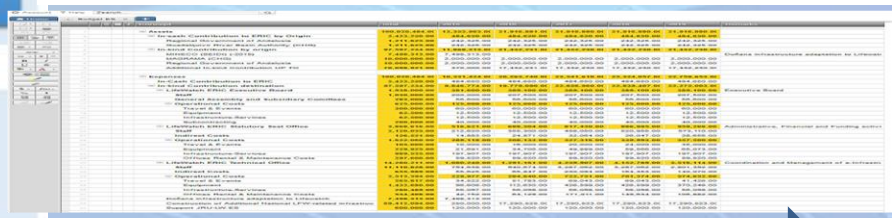
SmartSheet (Financial) & OpenProject (Technical) Intranets

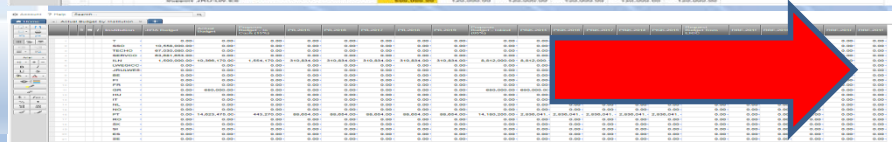
Málaga meeting: Advancing towards construction

A well defined operating procedure









"In-kind" and "in-cash" Countries' Contributions associated to concrete Projects, Components and Tasks

RIS³-related initiatives

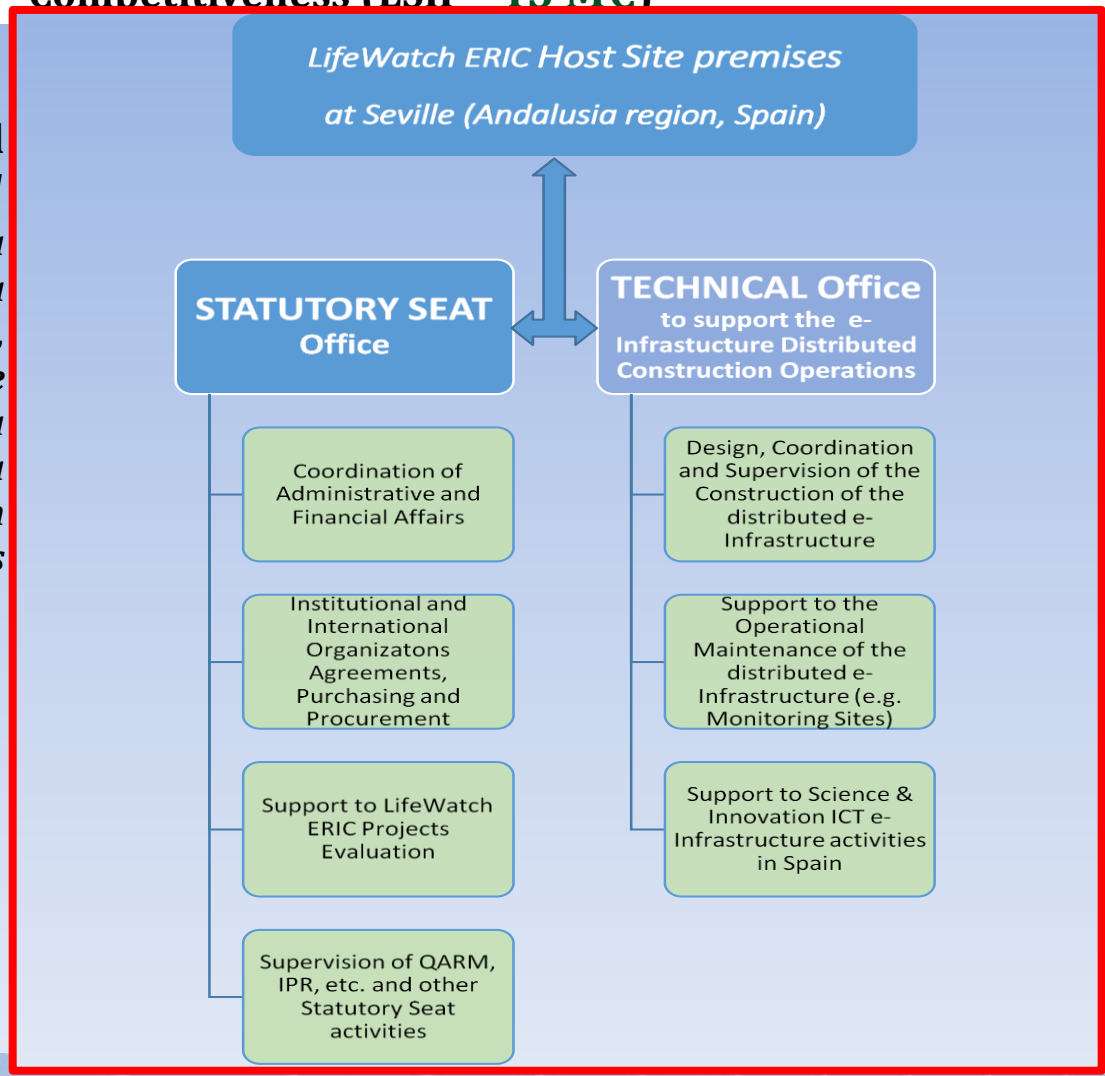
RIS3 ANDALUCIA — Estrategia de Innovación de Andalucía 2014-2020 — Andalucía se mueve con Europa

- **Andalusia Region in Spain (LifeWatch ERIC Hosting Country) includes LifeWatch into its Research and Innovation Strategy for Smart Specialisation-RIS3 (ESIF ~25 M€). Spain Ministry of Economy and Competitiveness (ESIF ~45 M€)**

https://www.paidi2020.es/wp-content/uploads/PAIDI2020.pdf

'Caracterización y diagnóstico del Sistema Andaluz del Conocimiento' (page 34): ***"A nivel europeo, Andalucía participa en el Foro Estratégico Europeo para las Infraestructuras de Investigación (ESFRI), acogiendo LIFEWATCH (infraestructura de investigación de referencia mundial dirigida a la protección, gestión y uso sostenible de la biodiversidad)... y mantiene sinergias con otras iniciativas referidas a Infraestructuras de I+D+I afines como IBERGRID/IBERLIFE..."***

"Objetivos Generales del Plan" (pages 114 & 115),Sections: **'Orientación de la I+D+I hacia los retos sociales andaluces'** and **'Potenciación y consolidación de las infraestructuras de I+D+I de calidad así como el uso eficiente de las mismas'**



- **RETHILAGRO**, "**Portugal-Spain** Network of Excelence for the Biodiversity Preservation and Sustainable Development of Iberian AGRO-Systems"

- **PENVIMA**, "**France-Portugal-Spain** Virtual Research Environments Platform to support Environmental Research initiatives"

Ministry of Economy and Competitiveness of Spain Internationalization Project for updating Doñana Singular Scientific and Technological Research Infrastructure for LIFEWATCH (FEDER – Technological Funds)

80% - 20% **ESIF** Co-funding 5,998,650.40 M€ + 1,499,662.60 M€ = **7,498,313.00 €**

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Una manera de hacer Europa

PART III

SOME CONCLUSIONS

- ✓ **Research Infrastructures-RI are important both for the progress of the European excellence in Science and Innovation, particularly those included in the ESFRI roadmap, as well as for the development of the Regional and Innovation Strategies for Smart Specialization-RIS^3 of the territories that have identified them in terms of economy, high-quality employment and trans-national cooperation (RIS^3 as one of the "ex-ante" conditions for the use of Structural Funds). Therefore, RIs are important targets for both European Regional and RTD&I policies to in turn reinforce Cohesion Policy.**

- ✓ **RIs calls for a synergistic combination of European Structural and Innovation Funds (ESIF) and H2020 funds, as well as of other National and Regional funding. At the same time, this involves particularities related with the investment of ESIF in ESFRI RIs that need to be specifically addressed.**

- ✓ **European Commission and National Authorities should set specific guidelines to the regional authorities interested in mobilizing ESIF in the construction and operation of ESFRI RIs and their use, combined or sequential, in different stages of the RIs construction and operation.**

- ✓ **The creation of new RI must be performed through an iterative and incremental update process involving the existing distributed facilities (e.g. "Agile" Methodology).**

- ✓ **LifeWatch is a particularly relevant case of ENVironment ESFRI from the regional (among others: Andalusia, Extremadura-ES; Regione Puglia-IT; Région Auvergne-FR; Regiões Algarve, Alentejo, Central, CCDR-N Porto-PT; Crete-GR, etc.) perspective:**
  As it is a distributed e-infrastructure, some regions are aware of its potential for:
  - ✓ Capitalizing already existing investments
  - ✓ Improving ICT developments that may be useful for biodiversity research and for other purposes
  - ✓ Special attention must be placed to the expected impact in the regional industrial sectors (Small and Medium Enterprises-SMEs)

- ✓ **As a result, the existing knowledge and services related with biodiversity and environmental information from cooperating initiatives among territories should be better connected. This a real challenge for Environmental RIs which also includes specific topics such as shared ICT developments, Intellectual Property Rights (IPR), Open Access (RDA) and European Open Science Cloud (EOSC) connections. All of these items demand the involvement of the interested regions.**

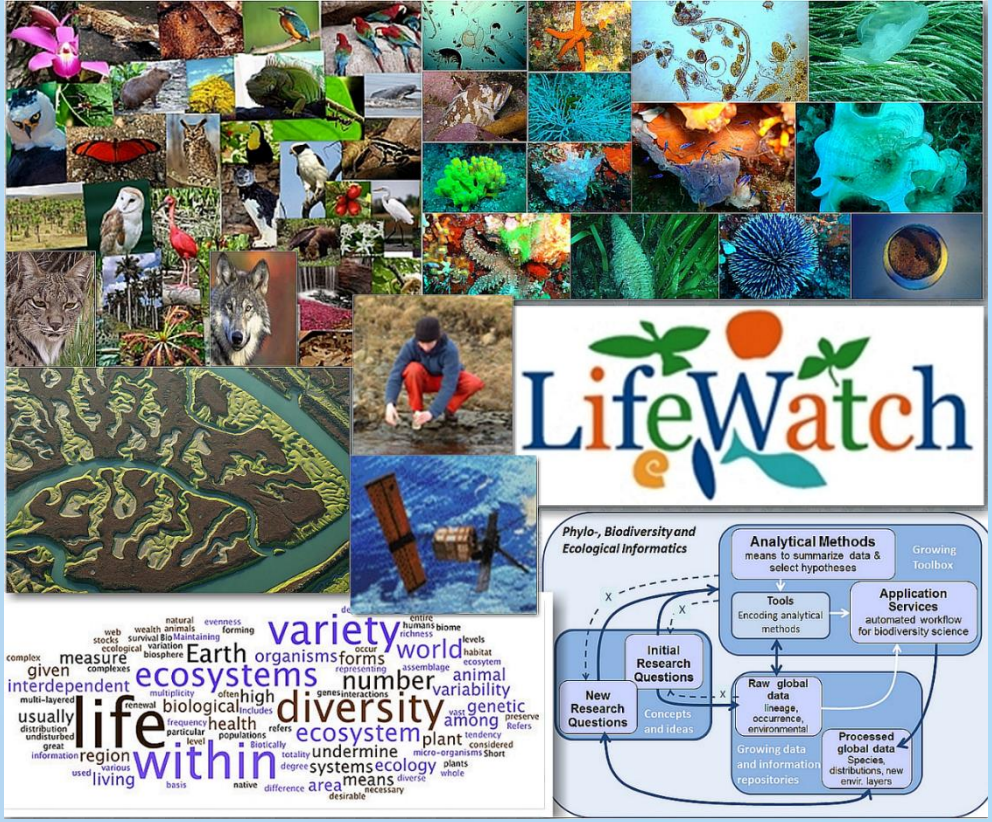
- ✓ **In that sense, above cited ongoing initiatives provide a common ground to reinforce the development of a shared distributed e-Infrastructure. They could be an example of good practices to integrate physical and virtual media through the LifeWatch ERIC.**

…HOWEVER:

- ✓ **The implementation of RIs would be at serious risk if RIS^3 policies are not taken into account during Research Infrastructures construction phases. Their consideration would prevent H2020 funding instruments from being simple extensions of Preparatory Phase projects, enabling "realistic" constructions and granting the sustainable operation of new-born facilities.**

- ✓ **This a crucial issue as normally ESFRI Preparatory Phases are usually conceptual-based exercises and they do not take into consideration the actual commitments of the countries (including their regions). New "drivers/catalysts" should be appointed in order to integrate all the pieces of this complex jigsaw puzzle.**

- ✓ **As presented, concrete & practical case studies were presented based on LifeWatch ESFRI, to explore ways to promote and optimally combine local, regional, national and pan-European (ESIF and H2020) resources. All of these, in turn, in order to nurture innovation clusters (including ICT ones), as there is a clear connection with Europe 2020 Flagship initiative "Digital Agenda for Europe", especially into is Pillar V Research & Innovation (e.g., in Action 53), which emphasizes the important role of e-Infrastructures to equip competitive research environments (including research infrastructures). In fact, advanced ICT tools for compute- and data-intensive processing and management should be developed to this end (e.g., BIG DATA a Virtual Research Environments ones).**



Thank you very much for your attention!

Any questions ?

http://www.lifewatch.eu

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