# Developing an Open Science Commons that can benefit citizen science



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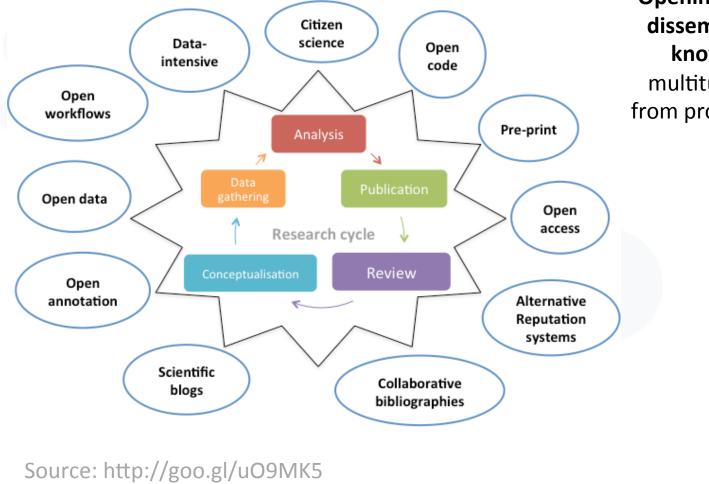


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# **Open Science**

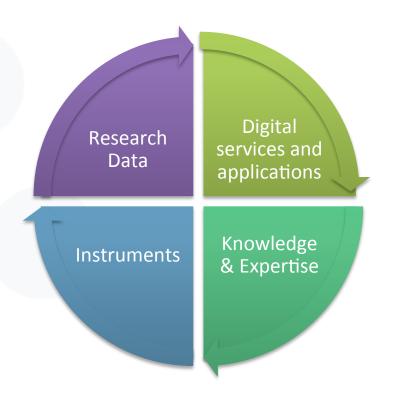
**Opening** of the **creation** and **dissemination** of **scholarly knowledge** towards a multitude of stakeholders, from professional researchers to citizens

> Openness Participation Collaboration Sharing Re-use Greater social value



## Open Science: a Complex Resource System

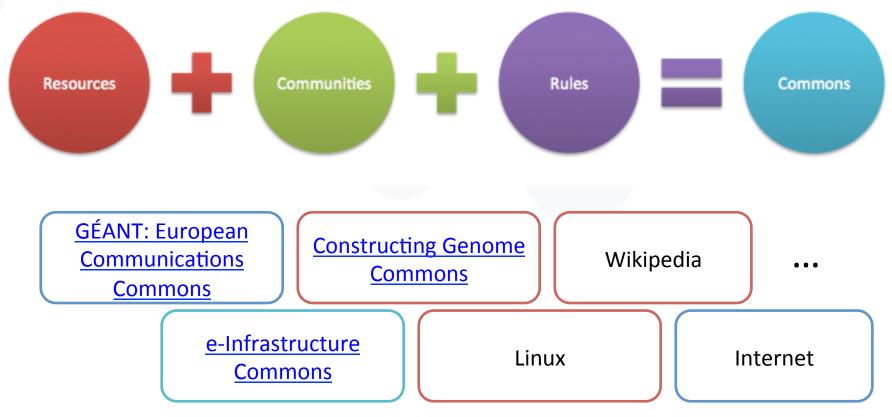
- Shared resources
  - Integrated, easy and fair access
- Engaged communities
  - Participating in the process
  - Culture of sharing
  - Collaborating in the management and stewardship
- Governance
  - Rules to access
  - Rules to resolve conflicts
  - Rules to balance quality vs. openness
- Financial support
  - For long-term availability





### Commons

Institutionalised community governance of the production and/or sharing of a particular type of resource (from natural to intellectual)





### Open Science Commons: Definition

- A set of interrelated resource systems governed as commons that support the open creation and dissemination of scholarly knowledge
- An area of study in the commons theory applied to open science



With this paper, EGI proposes the **Open Science Commons** as a new gaproach to digital research, tackling policy challenges and embracing open science as a new paradigm for knowledge creation and caliabaration. EGI invites organisations from the research lankaque to jain it in this journey to develop these concrepts, and through them to advance the implementation of the European Desearch Area.

### European policy context

The European Research Area (ERA) was endorsed the European Council in 2000 [1] as a way to build "a unified research area open to the world ased on the Internal Market, in which researchers, entific knowledge and technology circulate freeh through which the Union and its Member s strengthen their scientific and technologica es, their competitiveness and their capacity to ectively address grand challenges" [2]. eral actions for the ERA implementation hav en undertaken by many actors with the aim of sing the performance of European research zesing the performance of European research ugh mobility and cross-border cooperation. Pielse are the establishment of the European tegy Forum on Research Infrastructures (ESFRI) the e-infrastructure development for wity, high performance, grid and cloud uting and data. These initiatives sought to major user communities to ensure their White Paper [3] released by the tructure Reflection Group (e-IRG)

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he European Grid Infrostructure (EGI) – <u>http://www.egi.eu</u>



website: www.opensciencecommons.org - paper: http://go.egi.eu/osc

Networking session on Citizen Science, ICT2015



### Open Science Commons: When implemented...

# Researchers (including citizen scientists!) from all disciplines

have easy, integrated and open access to the advanced digital services, scientific instruments, data, knowledge and expertise they need to collaborate and achieve excellence in science, research and innovation.

They feel engaged in governing, managing and preserving these resources for everyone's benefit, with the support of all stakeholders.



### Commons for citizen science: the example of the LifeWatch RI 1/2



### FRAMEWORK

- LifeWatch (lifewatch.eu) is an ESFRI (EU Research Infrastructure)
  - Addressing Biodiversity & Ecosystems
  - An e-Infrastructure to build Virtual Research Environments (VRE)
  - Integrating OPEN DATA information
    - GBIF, LTER, GENBANK, SATELLITE IMAGES, TERRESTRIAL MAPS...
- EGI-LifeWatch Competence Center
  - Framework: EGI FedCloud
  - Dedicated Resources (~5000 cores + few PB, new node in Seville)
- Support LW VRE
  - Marine VRE (marine.lifewatch.eu )
  - Terrestrial + FreshWater VRE
- Pilot projects
  - Ecological Observatories Data Flow and "Big Data" analysis
  - Workflows: Galaxy and TRUFA; Network of Life
  - Citizen Science: Assisted Pattern Recognition



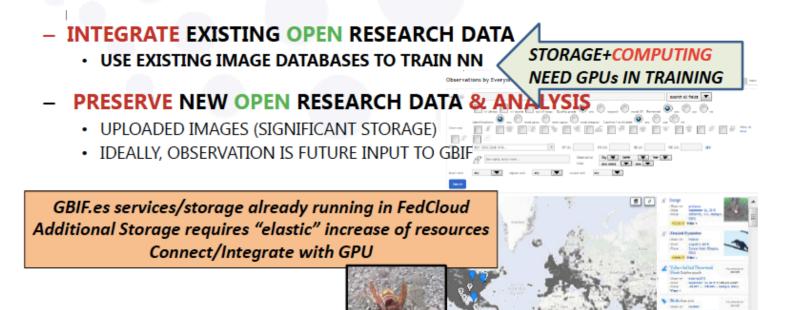
### Commons for citizen science: the example of the LifeWatch RI 2/2



### **EGI-LIFEWATCH CC EXAMPLE 2**

Support to Citizen Science (Assisted Image Recognition)

Citizens collect and upload geo-pos image observations of species using a mobile app (iNaturalist), the image is stored and an initial identification returned



# How can all citizen scientists benefit from the Open Science Commons?

# How can e-Infrastructures and RIs help citizen science?



OpenScience Commons



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