

# Lightning Talks: Citizen Observatories



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GROUP ON EARTH OBSERVATIONS

**INSIGHT FOR A  
CHANGING WORLD  
GEO WEEK 2017**

23-27 OCTOBER 2017  
WASHINGTON, D.C., USA



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- **Citizens' Observatories** are community-based environmental monitoring and information systems. They build on innovative and novel Earth observation applications embedded in portable or mobile personal devices. This means that citizens can help and be engaged in observing our environment.

(EC definition)

<https://ec.europa.eu/easme/en/news/have-you-heard-about-concept-citizens-observatories>



# The four COs



- From citizen-based data collection to knowledge sharing for joint decision-making, cooperative planning and environmental stewardship
- Considers the social and technical dimensions
- Six demo cases



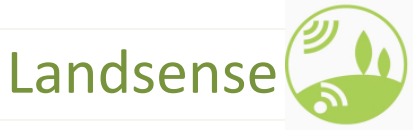
- Sustainable custodial soil
- Meet the demands of
- Calibrate/validate satellite-based soil moisture products with CS in-situ sensors
- Campaign-based approach for engaging

**WeObserve**

- Inventory of citizen observatories and sustainability
- Accelerate the uptake of Citizen Observatories
- Facilitate adoption in EO communities

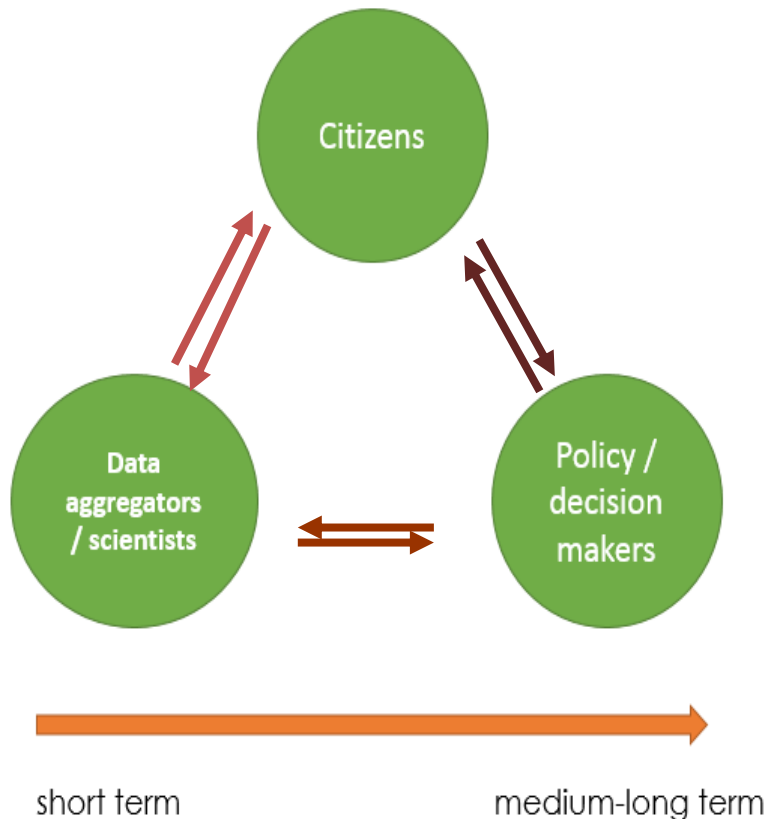


- Crowdsourcing platform used to collect images and text from citizens
- Calibration and validation of satellite data using the crowdsourcing platform
- Demo cases with serious gaming: Kifisos river, Greece; Danube Delta, Romania



- Management platform for landscape services
- Demo cases (pictures in 4 directions), change detection in alerting about bird habitat risks, single sign-on
- Three demo cases on landscape changes, agriculture and habitat monitoring

groundtruth2.0



- Strengthening the full feedback-loop in the information chain...
- ...from
  - citizen-based data collection
- to
  - **knowledge sharing** for joint decision-making,
  - **cooperative planning** and
  - **environmental stewardship**



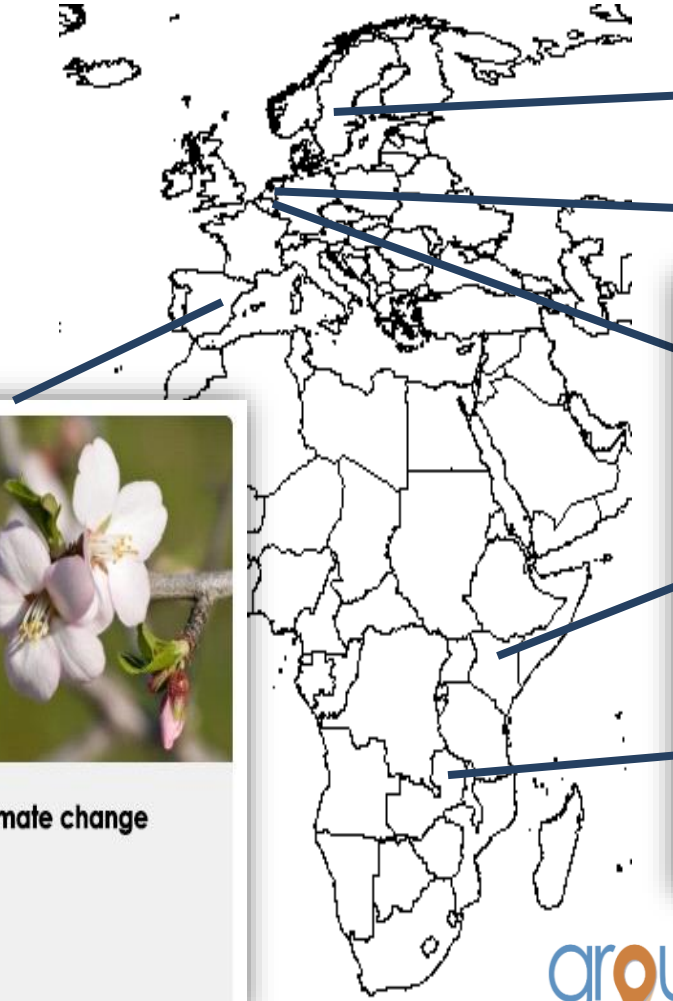


- Six citizen observatories
- Following a participative design approach





# Demo cases



**Water quality management in socio-ecological systems**

Sweden



**Biodiversity conservation**

Kenya



**Sustainable natural resource management**

Zambia



**Preparing for climate change**

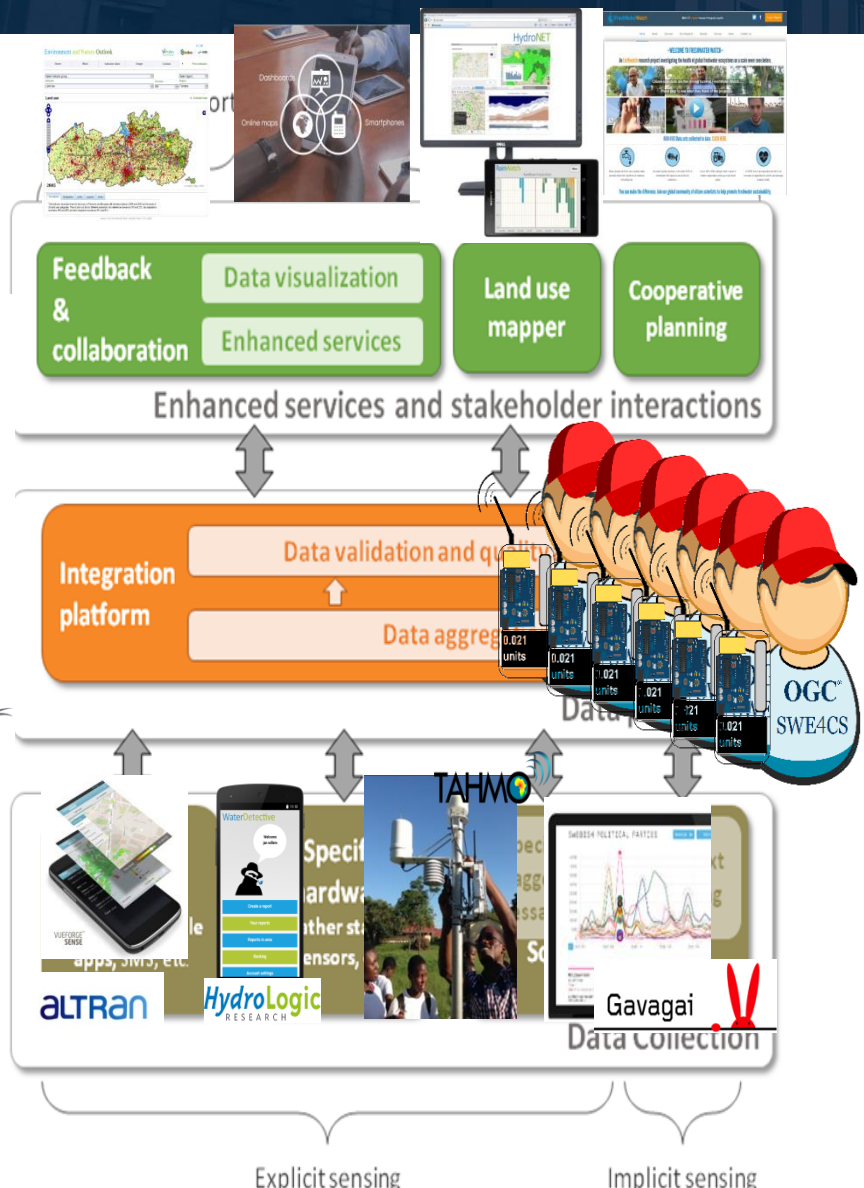
Spain





# As a GEOSS data provider

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Global Earth Observation System of Systems



# SWE for Citizen Science



- If a significant amount of Citizen Science data can be published following this standard

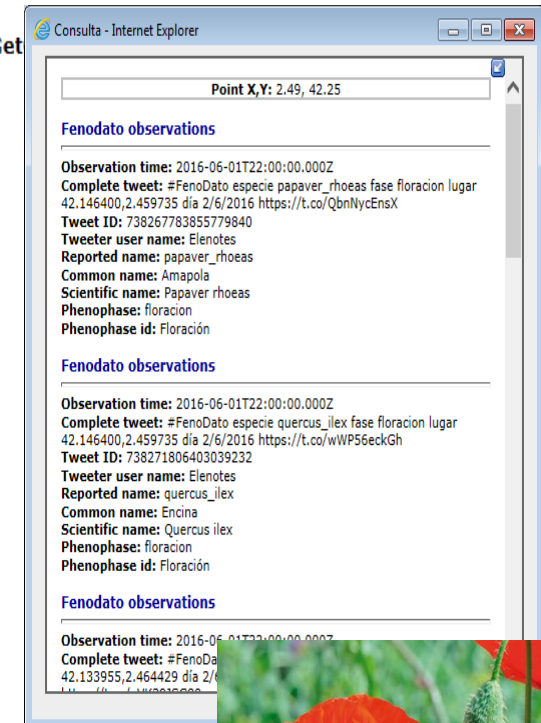
- Data becomes more useful and meaningful
- The same tools can be used and reused
- The costs of integration decrease

**OGC**<sup>®</sup>  
Making location count.



- <http://localhost/cgi-bin/miramon.cgi?VERSION=2.0.0&SERVICE=SOS&REQUEST=GetObservation&featureOfInterest=http://www.opengis.uab.cat/fenodato/featureOfInterest/173>

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<sos:GetObservationResponse xsi:schemaLocation="http://www.opengis.net/sos/2.0 http://schemas.opengis.net/sos/2.0/sosGet
- <sos:observationData>
  - <om:OM_Observation gml:id="fenodato_173_5">
    <om:type xlink:href="http://www.opengis.net/def/observationType/OGC-OM/2.0/OM_TextObservation"/>
    - <om:phenomenonTime>
      - <gml:TimeInstant gml:id="phenomenonTime_fenodato_173_5">
        <gml:timePosition>2016-06-01T22:00:00.000Z</gml:timePosition>
        </gml:TimeInstant>
      </om:phenomenonTime>
      <om:resultTime xlink:href="#phenomenonTime_fenodato_173_5"/>
      <om:procedure xlink:href="http://www.opengis.uab.cat/fenodato/procedure"/>
      <om:observedProperty xlink:href="http://www.opengis.uab.cat/fenodato/observableProperty/K_NAME"/>
      <om:featureOfInterest xlink:href="http://www.opengis.uab.cat/fenodato/featureOfInterest/173"/>
      <om:result xsi:type="xs:string" xmlns:xs="http://www.w3.org/2001/XMLSchema">Amapola</om:result>
    </om:OM_Observation>
  </sos:observationData>
  - <sos:observationData>
    - <om:OM_Observation gml:id="fenodato_173_8">
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        - <gml:TimeInstant gml:id="phenomenonTime_fenodato_173_8">
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        </om:phenomenonTime>
        <om:resultTime xlink:href="#phenomenonTime_fenodato_173_8"/>
        <om:procedure xlink:href="http://www.opengis.uab.cat/fenodato/procedure"/>
        <om:observedProperty xlink:href="http://www.opengis.uab.cat/fenodato/observableProperty/P_NAME"/>
        <om:featureOfInterest xlink:href="http://www.opengis.uab.cat/fenodato/featureOfInterest/173"/>
        <om:result xsi:type="xs:string" xmlns:xs="http://www.w3.org/2001/XMLSchema">Floración</om:result>
      </om:OM_Observation>
    </sos:observationData>
```



Consulta - Internet Explorer

Point X,Y: 2.49, 42.25

### Fenodato observations

Observation time: 2016-06-01T22:00:00.000Z  
Complete tweet: #FenoDato especie papaver\_rhoeas fase floracion lugar 42.146400,2.459735 dia 2/6/2016 https://t.co/QbnNycEnsX  
Tweet ID: 738267783855779840  
Tweeter user name: Elenotes  
Reported name: papaver\_rhoeas  
Common name: Amapola  
Scientific name: Papaver rhoeas  
Phenophase: floracion  
Phenophase id: Floración

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Complete tweet: #FenoDato especie quercus\_ilex fase floracion lugar 42.146400,2.459735 dia 2/6/2016 https://t.co/WWP56eckGh  
Tweet ID: 738271806403039232  
Tweeter user name: Elenotes  
Reported name: quercus\_ilex  
Common name: Encina  
Scientific name: Quercus ilex  
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Observation time: 2016-06-01T22:00:00.000Z  
Complete tweet: #FenoDato especie quercus\_ilex fase floracion lugar 42.133955,2.464429 dia 2/6/2016 https://t.co/WWP56eckGh  
Tweet ID: 738271806403039232  
Tweeter user name: Elenotes  
Reported name: quercus\_ilex  
Common name: Encina  
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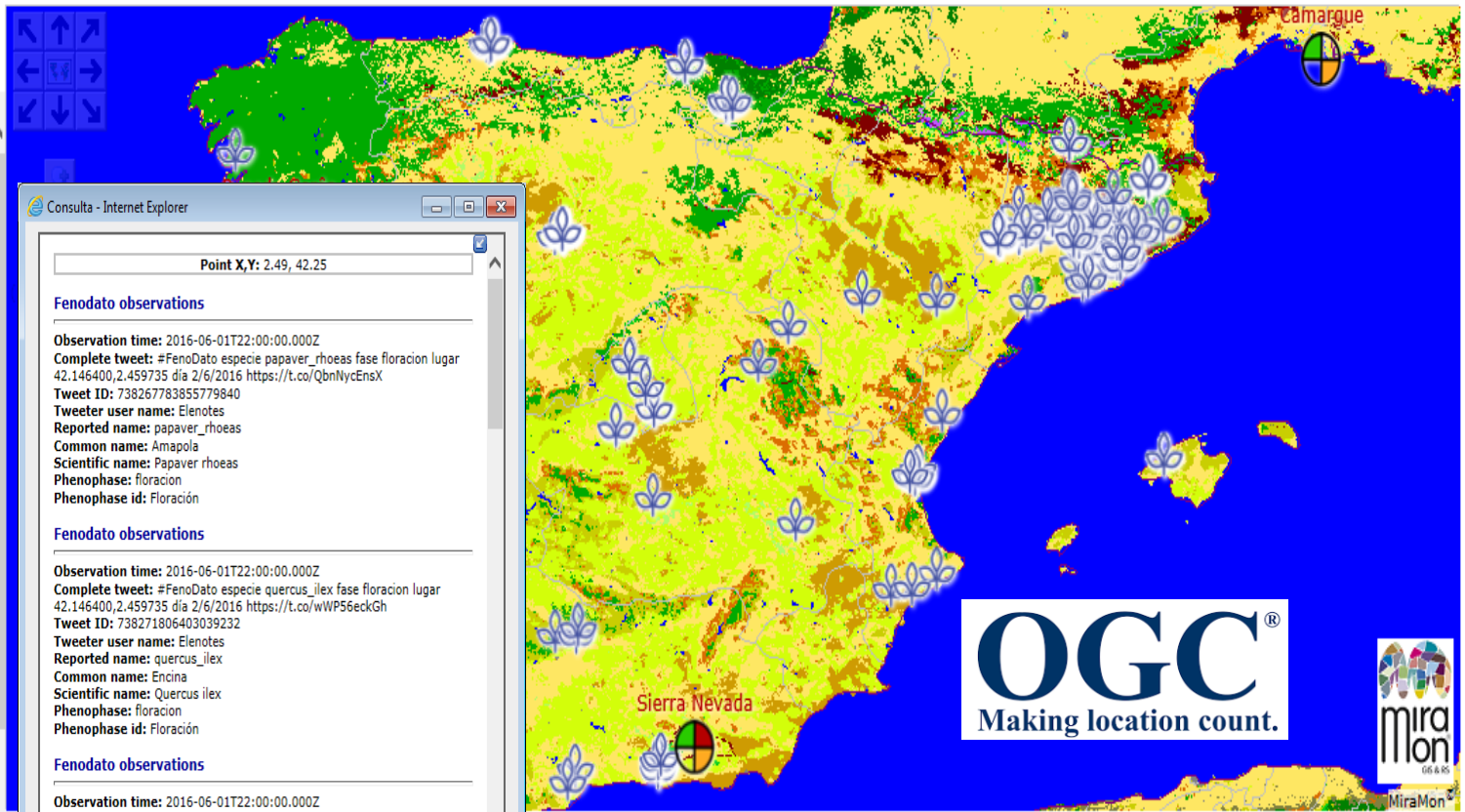


## PROTECTED AREAS from SPACE ECOPotential view



This project is funded by the European Union

automatic (long/lat - WGS84) ▾



Consulta - Internet Explorer

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Tweet ID: 738271806403039232  
Tweeter user name: Elenotes  
Reported name: quercus\_ilex  
Common name: Encina  
Scientific name: Quercus ilex  
Phenophase: floracion  
Phenophase id: Floración

- ### PA Datasets
- Protected Area Location
  - Site type
    - International Marine Protected Area
    - Large Marine Ecosystem (LME)
    - National park
    - Natura 2000 site
    - World heritage
    - Biosfere reserve
- ### Citizen Science
- Fenodato observations
- ### PA Datasets
- Camargue Limits
  - Doñana Limits
  - Montado Limits
  - Peneda-Geres Limits
  - Sierra Nevada Limits
- ### Reference datasets
- Zero level boundaries (country)
  - First level boundaries
  - Land Cover GLCC 30"
  - International Geosphere Biosphere P
  - USGS Land Use/Land Cover System I
  - Simple Biosphere Model

5° (aprox. 400000 m at lat. 40.2°)

oord: X,Y: 3.46, 43.77



# The role of Research and Innovation in the EuroGEOSS regional initiative



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# Follow us on social media

LinkedIn profile for Ground Truth 2.0, a Civic & Social Organization with 39 followers. The profile includes a search bar, navigation tabs (Home, Moments, Notifications, Messages), and a 'Follow' button. The 'About us' section states: 'Ground Truth 2.0 is a 3-year EC funded project set to share data about their environment and to take...'. The 'Recent updates' section shows 11 updates and 39 followers.



[www.linkedin.com/showcase/17982741](http://www.linkedin.com/showcase/17982741)

# Thanks!!

[www.gt20.eu](http://www.gt20.eu)

Facebook profile for Ground Truth 2.0. The profile includes a cover photo of a group of people in white t-shirts, a profile picture of a person with a location pin, and a bio: 'Setting up & validating 6 Citizen Observatories in Africa & the EU. Funded by @EU\_H2020, led by @UnescoCHC. #ctsci'. The page shows 357 tweets, 580 following, and 417 followers. A 'Tweets & replies' section is visible with a tweet from Joan Masó Pau. A 'Fotos' section shows a group photo of the project team.



[www.facebook.com/groundtruth20](http://www.facebook.com/groundtruth20)



[www.twitter.com/groundtruth20](http://www.twitter.com/groundtruth20)

Newsletter #1, July 2017. The cover features the Ground Truth 2.0 logo and a landscape photo. Below the title is a 'Project Coordinator's note' section with a photo of the coordinator and the text: 'Dear reader, Welcome to our very first Ground Truth 2.0 newsletter! The Ground Truth 2.0 project is setting up and validating six Citizen Observatories, in four European and two African Demonstration Cases. Citizen observatories enable citizens (and not just scientists and professionals) to collect and share data and knowledge about the environment. Feedback loop in the information chain: making...'. At the bottom is a 'Subscribe to our newsletter' form with a text input field for 'Your e-mail address' and a 'Subscribe' button.