

# ECSA & EU-Citizen.Science webinar: Lessons and insights from WeObserve

#### 30 March 2021, 14:00-15:30 CEST



The project WeObserve has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 776740.

# WeObserve in a nutshell Gerid Hager (IIASA)





#### VISION

Citizen Observatories are an integral component of managing environmental challenges and empowering resilient communities

#### **MISSION**

To move citizen science into the mainstream by building a sustainable ecosystem of Citizen Observatories and related activities





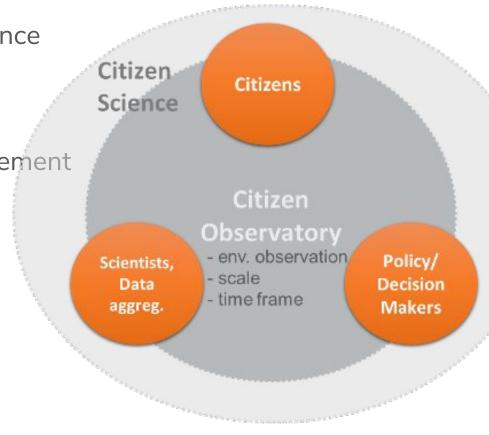
#### WeObserve "sister" projects



#### Horizon 2020

#### Evolution of Citizen Observatory concept

- COs as particular form of citizen science
  - Environmental monitoring, management and governance
  - Place-based participation of citizens
  - Societal relevance beyond science
  - Actions across a network of stakeholders and involvement of policy makers and authorities
  - Use of web and mobile applications
  - Multi-directional flow of data and information
  - Longer-term, or defined timeframe to address a specific issue/situation
  - Range of CO models: contributory, collegial, or collaborative, co-designed



Source: Engage and Impact CoP Inception reports (2018)



#### **WeObserve Objectives**

- Develop communities of practices around key topics to assess the current CO knowledge base and strengthen it to tackle future environmental challenges using CO-driven science.
- 2. Extend the geographical coverage of the CO knowledge base to new communities and support the implementation of best practices and standards across multiple sectors.
- 3. Demonstrate the added value of COs in environmental monitoring mechanisms within regional and global initiatives such as GEOSS, Copernicus and the UN SDGs.
- 4. Promote the uptake of information from CO-powered activities across various sectors and foster new opportunities and innovation in the business of in-situ Earth Observation.

### Key Challenges

AWARENESS

Generating awareness to build and sustain a critical mass to support citizen science

What are COs and how can I participate? What is the use and why should we support it?

ACCEPTABILITY Showcasing the added value of citizen-driven science to decision and policy makers What value can we gain and does it help us to tackle problems? Can we trust the data? Are the methods suitable and ethical and do they comply with regulation?

#### SUSTAINABILITY

Creating an ecosystem that can support and scale-up citizen science to various sectors

How can a CO be sustained? What is required for tech maintenance, community building, transition governance and ongoing funding?



#### WeObserve activities



**4** Communities of Practice **Citizen Observatory Landscape** Topical workshops, Roadshow events and WeObserve conference WeObserve Toolkit WeObserve MOOC (Online course) **3** Challenges at INSPIRE hackathon Interoperability experiment **Open Data Challenge** WeObserve Cookbook WeObserve Publications WeObserve Roadmap WeObserve Knowledge base

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#### Webinar today

- WeObserve Communities of Practice: how to 'do' CoPs and some reflections - Uta Wehn (IHE Delft), Joan Maso (CREAF), Dilek Fraisl (IIASA)
- Accelerating the uptake of Citizen Observatories through MOOCs and open data challenges - Mel Woods (University of Dundee)
- Data interoperability and standardisation: using interoperability experiments and hackathons to address data-related challenges in citizen observatories - Joan Masó (CREAF), Valantis Tsiakos (ICCS)
- WeObserve key outputs and achievements Gerid Hager (IIASA)
- **Q&A session -** Margaret Gold (Citizen Science Lab, Leiden University)



# Key achievements and outputs Gerid Hager (IIASA)

#### Key achievements

- Improved coordination between existing environmental COs at regional, European and international levels.
- Largely expanded geographical coverage and uptake of the CO knowledge base as well as data management and preservation strategies.
- Improved collaboration with SMEs and achieved greater awareness and use of COs by environmental, disaster risk and emergency managers and decision makers.
- Enhanced the integration and uptake of citizen science and Citizen Observatories in GEO/GEOSS and into the SDG framework.



#### Key achievements in numbers

- 4 CoPs, 500+ sign-ups, ~70 active participations, 6 CoP forums and ~40 individual presentations during regular CoP meetings
- 2000+ MOOC learners, ~110 countries worldwide, 750+ downloads of open source tools and resource; Open for another full year on FutureLearn, soon available on EU-Citizen.Science platform
- Publications
  - 14 journal publications (5 published, 1 in press, 3 submitted, 5 in preparation):
     30k+ article accesses, 100+ citations
  - 20+ policy documents, conference papers and posters, other reports and more: 900+ unique views, 600 downloads (WeObserve Zenodo)
- 60+ WeObserve events, conferences and invited presentations, including at EuroScience Open Forum (ESOF), Americas Symposium, UN World Data Forum, UN Science-Policy-Business Forum on the Environment (in the second project half alone)



# Officially launching today...



#### **Explore the WeObserve Cookbook**

Start using the Cookbook by selecting a topic that you are interested in

Find out more about the Cookbook here!





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### WeObserve Cookbook

- Groups or individuals who are leading or will lead Citizen Observatory projects and initiatives.
- Provides best practice examples and guides users through resources such as tools, scientific papers, training materials and networks. Includes key references and additional resources, to dive deeper into topics and application of tools.
- Covering around 30 pages and topics within four overarching themes:
  - Getting to know and understand Citizen Observatories
  - Creating and running a Citizen Observatory
  - Achieving impact with Citizen Observatories
  - Ensuring sustainability of Citizen Observatories

I want to generate insights and results from our data and knowledge by visualising & interpreting the data Home » I want to generate insights and results from our data and knowledge by visualising & interpreting the data ← Back to the start of the Cookbook Why is it relevant? Useful Resources It's important that you can deliver a clear message to stakeholders or policy makers in order to affect any changes that your Citizen Observatory has suggested. Engaging visualisations are one important way to do that. WeObserve MOOC, enrollment is open: The online course Citizen How can this be done? lifference on FutureLearn addresses data analysis and visualisation in more depth including many more examples, A picture is worth a thousand words - this old saying also applies to Citizen Observatories discussing biases in data visualisation where data visualisation can help you and your participants to explore and understand data and providing datasets for you to and to communicate results quickly and in an engaging way. Nevertheless, when it comes to experiment with extracting meaningful information from data and interpreting the data, scientific knowledge may be required so that data interpretation is accurate and meaningful. Data visualisations, VIDEO: "How we did it: Visu besides communicating results, can also be used as a tool for data interpretation by helping Data" provides more examples of data to detect gaps, errors, or inconsistencies in your datasets. visualizations from four Citizen Observatory projects Types of data visualisation F TOOL: WeObserve Toolkit for data - Mapping and visualising location-based data lity and visualisation: a selection of tools that can help you with all aspects There are many tools available to map location-based data and visualise it easily. Some of citizen-generated data management, cost money such as Tableau, PowerBI, Spotfire etc. whilst others are free such as Grafana, including validation, analysis, quality Rawgraphs, and Apache Superset. With these, you can quickly produce a map like this one assurance and visualisation and, also quickly see if sensors are out of place (i.e., in the ocean). Sharing a graph like this with participants can encourage them as they can see the progress of the project FTOOL: The Data Postcard tool is designed for community members and Location of Sensors citizen science practitioners wanting to man Tape . Classes From share the data they collect. It is a creative way to visualise and share data from a citizen science project. Data visualisation applications Matplotlib: For those of you with programming experience, Matplotlib is a popular choice for data visualization, and can be easily integrated in Jupyter notebooks · Leaflet: Leaflet is an open-source JavaScript library for mobilefriendly interactive maps. It works efficiently across all major desktop and mobile platforms. Calibrated Moisture % can be extended with a variety of plugins and it is well documented. Other free tools: Grafana Rawgraphs, and Apache Supe You may also be interested in... MAR MANANA I want to generate insights & results from our data & knowledge... made: The GROW Observatory man of soil sensors across Furr

## www.weobserve.eu/weobserve-cookbook



### **ROADMAP** for the uptake of the Citizen Observatories' knowledge base



Outline the dynamic landscape of Citizen Observatories and provide actionable pathways for research and innovation to further advance their capabilities and impacts in the future.

#### WeObserve Roadmap

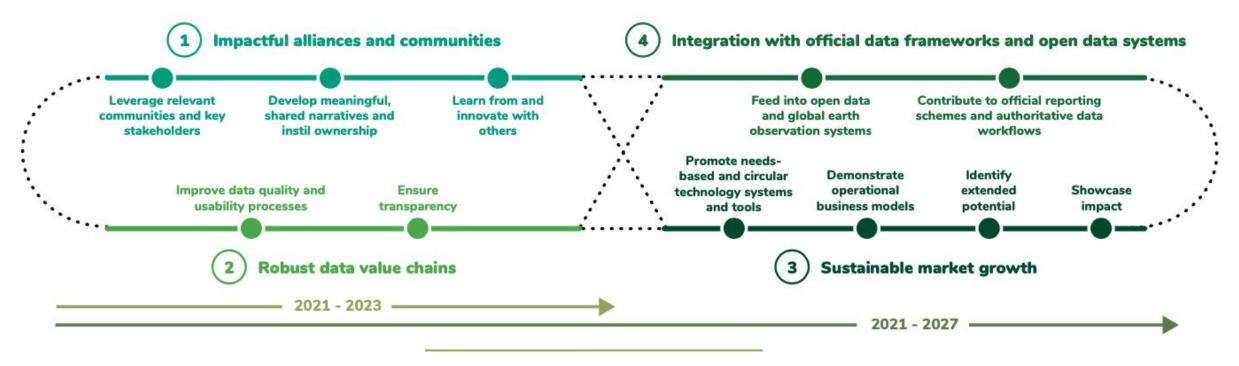
1-2023

- **Practitioners** (research institutions, civil society organisations, public authorities 0 and others) for conceptualising and directing key aspects and R&I plans for future Citizen Observatories and related projects;
- The **European Commission**, to support shaping Horizon Europe funding calls under Ο the European Green Deal agenda;
- **National funding agencies** of EU member states to learn about Citizen Ο Observatories and identify suitable scenarios for funding Citizen Observatories nationally.

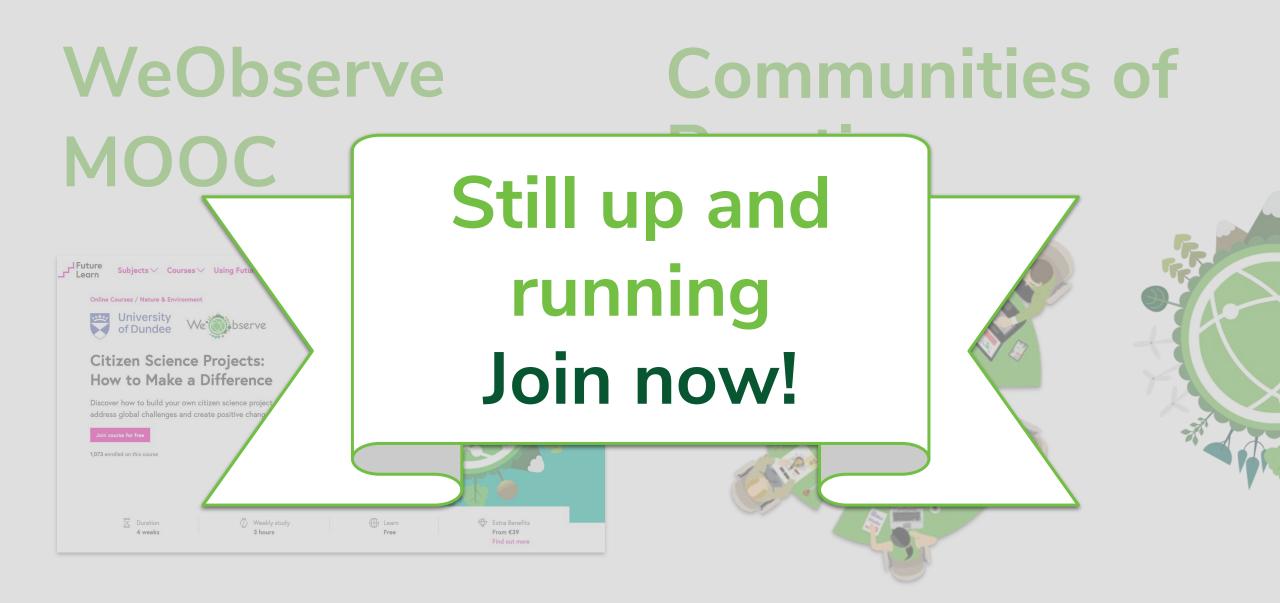
the WeObserve project coordinato	and provision of trustful data and evidence to inform and been explored in the past but it requires more effort for it to	RESOURCES TO BUILD ON: GROW communit report [31]; GROW MOOC programme for t		e funders of Citizen Observatories	Y
brought together four H2020 Citizen (LandSense, Ground Truth 20, GROW (LandSense, Ground Truth 20, GROW and with the WeObserve Expert outline was set up and reviewed by also met in January 2021 for a "Ci workshop", when they shared and in Observerstories in Europe. Additional			are essential to foster an environment for Citizen Observatories that enables them to start, thrive and continue their activities to deliver value and impact across multiple stakeholder groups. Concluding the readmap, we offer several recommendations to funders on conditions that can support the pursuit of proposed	their benefit and to deliver maximum impacts. Other funding options through Faamus - streams or school networks should allow and expand to fund bettorn-up community initiatiest widning to explore more localised Citizen Observationes that could evolve init networks such as the leng-schalisticat	
and enabled the sharing and consolidation est practices to inform practitioners, policy Communities of Practice (CoPs) du	DIRECTION: Sensitisation of policy and decision makers on the benefits of collaborating with citizens and embedding citizen stakeholders, understand key pain and gain points and barriers	RESOURCES TO BUILD ON: WeObserve Cook Sense Framework & Assessment of Particip	Observatories in Horizon Europe as well as advance Citizen Observatories in service of Horizon Europe goals.	<ul> <li>Support diverse and ambitious communication and media plans – Deliberate strategies informed by innovative media intelligence and professional services, prioritised over</li> </ul>	LA
a joint publication of the WeObserv	national planning and management) are essential to reach to address them; Co-develop new data pipeline models and	Guidelines for Citizen Observatories [35]; SO	functions – Often, it takes many years for a Citizen Observatory to become operational and productive and subsequently to lead to scientific and decision-making results. Appropriate funding for such longer-term development	will help Citizen Observatories gain momentum, reach large audience engagement as well as achieve impact, from individual citizens to policy making. Enable Impact alliances – To secure the engagement	
A French State			Observatories will benefit from funding schemes that are flexible, involve cascading funds and employ agile evaluation approaches to allow for iteration, co-design and open	communities and community organisations from the start, carefully composed consortia will be required, that can rally viable support and buy-in across these groups as well as	
A SE AL	ambassadors and employing community managers to ensure local communities are empowered via a spokesperson and best practices to build and secure such roles, especially for	[34]; GROW community champions report [ introductory course in Citizen Science <sup>11</sup> ; Mai	environmental impact, make follow-up or alternative sources of funding available to projects that meet specific targets, support the link and transition into national funding schemes	concept to respective local or national contexts. Deliberate consideration of partner profiles as well as consortium composition will be needed for call design and during the	00
So Col	and emotional shills to link communities to decision makes body and government agredis and vorcemen wy longuage body as the semistration of their communities' concerns, interests and at last amplitudes of their communities' concerns, interests	11 tp://www.clacuk/stot-ourse/stearch-enurse/items owwławiego/maductee			
Alland and			implementation of a mission-oriented process towards the	ECSA, GEO, OGC, UNESCO, etc.).	
	WeObserve? 202 Coordination and Support Action (bc- brought together from 1202 O Clarent Landsman, Growan Thur 2, 2, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman, GROW Lendsman	<text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text>	WebDervel         Proceduration and Support Adding the Muchage magnetic coording the Muchage magnet	<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>

#### WeObserve Roadmap

- Citizen Observatory landscape overview (past, present and future)
- **Research and innovation roadmap**: four main areas, 11 pathways and 35 actions, short-term (2021-2023) and medium-term (2021-2027) time horizon
- **Recommendations** to future funders of Citizen Observatories

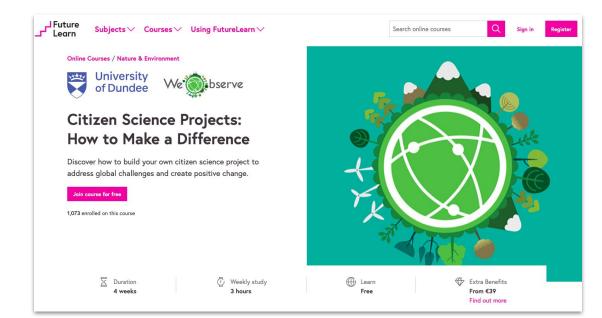


# WeObserve Zenodo



# WeObserve MOOC

## **Communities of Practice**









## Thank you!

#### weobserve.eu

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