# Co-designing an ecosystem for impactful and sustainable Citizen Observatories

Dr. Uta Wehn, and Ane Bilbao, IHE Delft

Margaret Gold, Leiden University
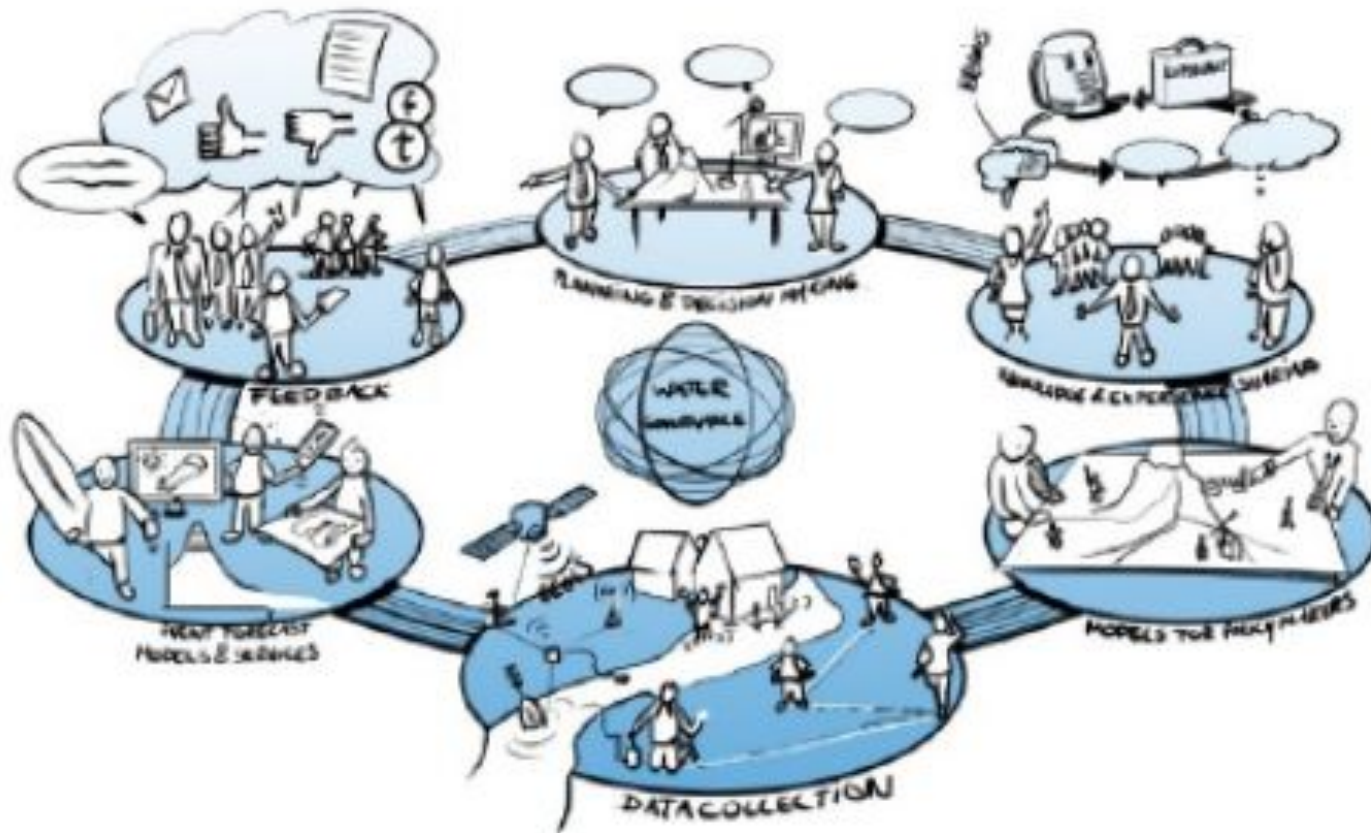
Gerid Hager, IIASA

30 June 2021, 13:00-15:00 CEST

# Plenary Introduction

# What is a Citizen Observatory?



Citizen Observatories (COs) are **community-based** environmental monitoring initiatives

making use of smartphones, sensors, or any other Earth **observation technology**

in which **citizens collect data and are empowered** by the information generated from these data

to **have an impact** on environmental management, policy decisions, local interventions, etc.

**WeSenseIT**
2013

"a method, an environment and an infrastructure supporting an information ecosystem for communities and citizens, as well as emergency operators and policymakers, for discussion, monitoring and intervention on situations, places and events"

**CITI-SENSE**
2014

"the citizens' own observations and understanding of environmentally related problems and in particular ... reporting and commenting on them within a dedicated ICT platform"

**ALAN GRAINGER**
2017

"any use of Earth observation technology in which citizens collect data and are empowered by the information generated from these data to participate in environmental management."

**COMMON ELEMENTS**

- **PARTICIPATION OF CITIZENS 'IN-SITU'**
- **MOBILE + WEB TECHNOLOGIES**
- **ENVIRONMENTAL MONITORING**
- **BI-DIRECTIONAL DATA & INFO**

## Community-based sustainable natural resource management

Zambia



## Balancing sustainable livelihoods and biodiversity management

Kenya



## Water quality management in socio-ecological systems

Sweden



## Preparing for climate change

Spain



## Weather and climate-proof water management

The Netherlands



## Environmental quality of life in Flanders

Belgium

# *Have you heard the term 'citizen observatory' before?*

**MENTIMETER**

Go to www.menti.com

Enter the voting code

# 7911 4768

# *What hat do you wear?*

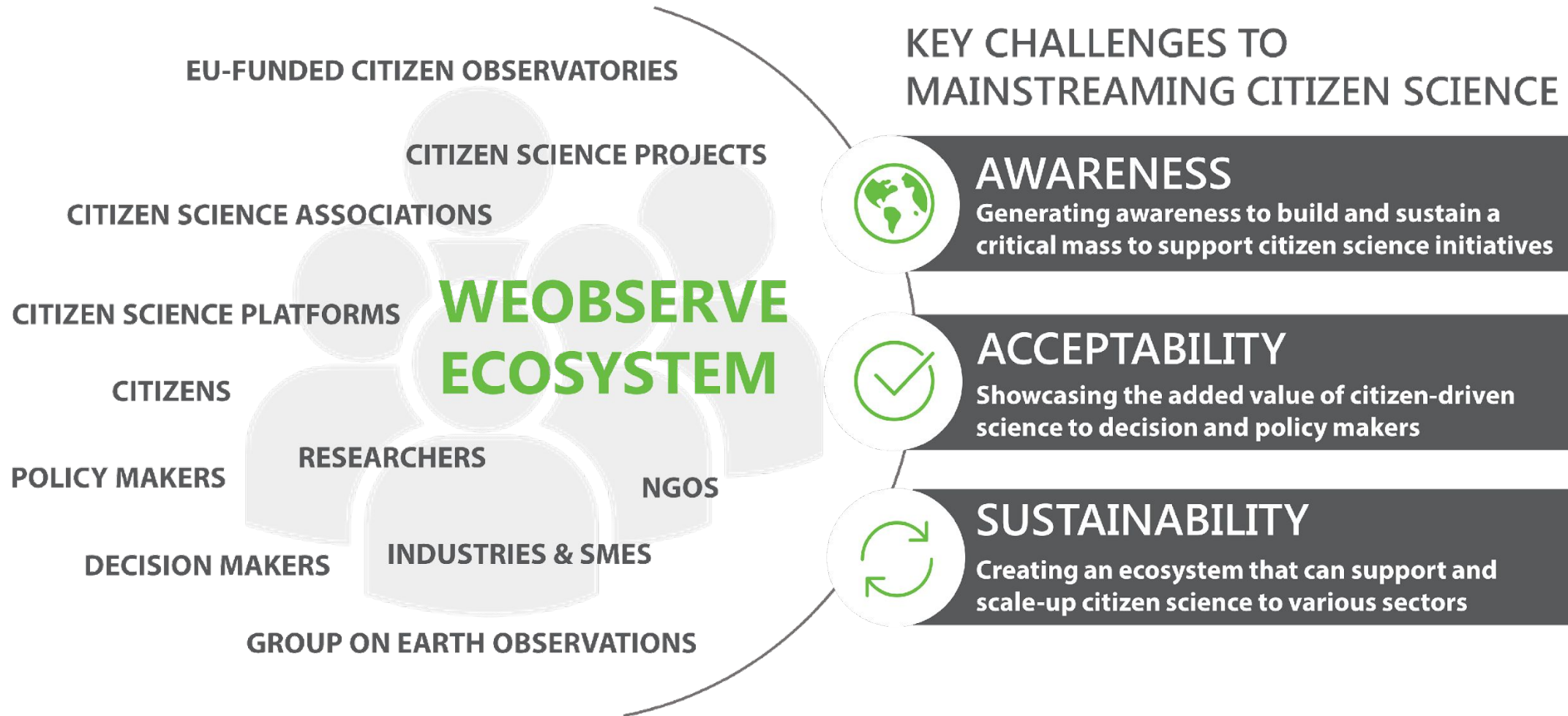# WeObserve: connecting **"sister" Citizen Science** projects
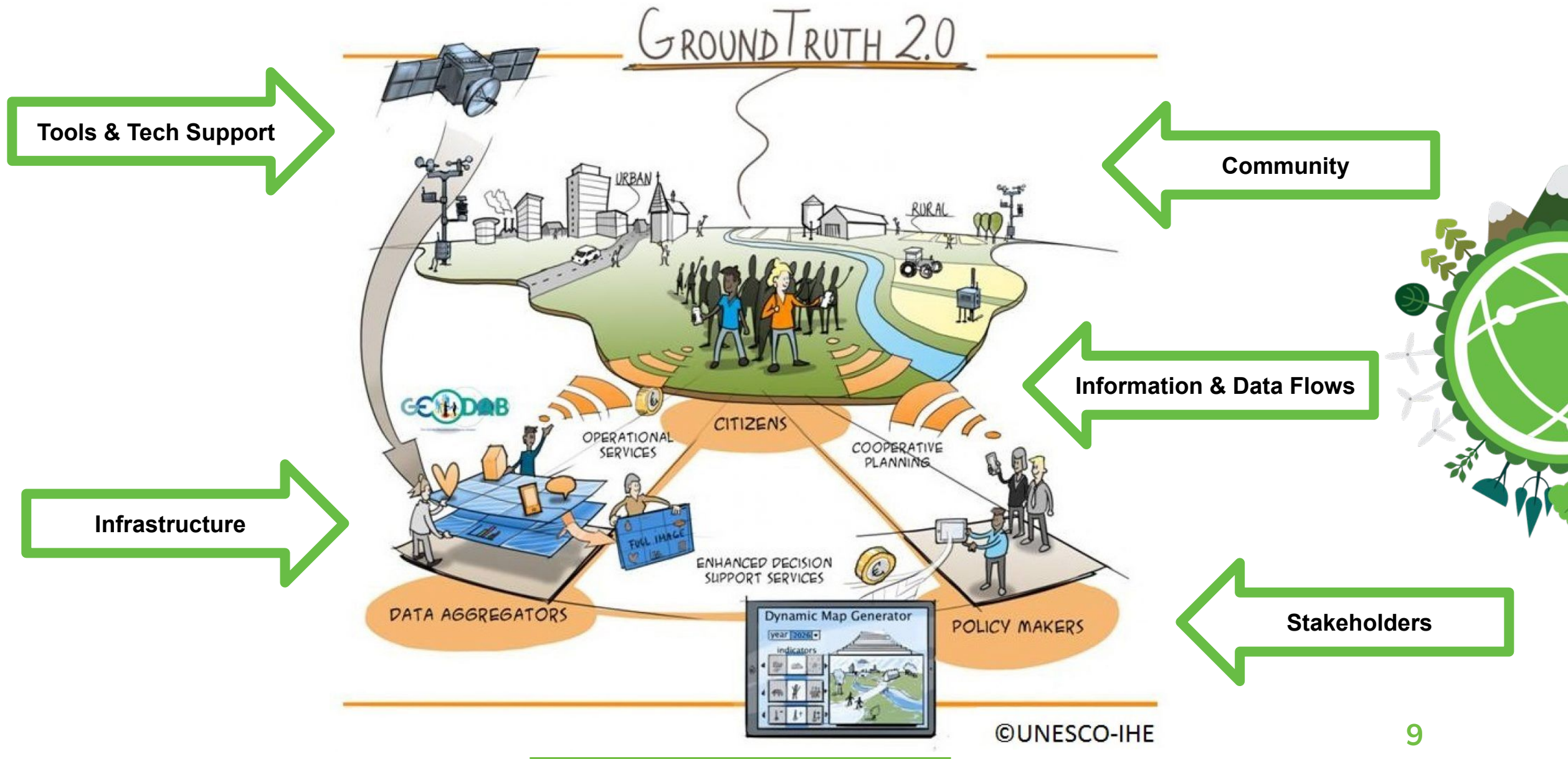


**Horizon 2020**

**FP7 - WeSensIt**

# WeObserve **Overview**



**EU-FUNDED CITIZEN OBSERVATORIES**

**CITIZEN SCIENCE PROJECTS**

**CITIZEN SCIENCE ASSOCIATIONS**

**CITIZEN SCIENCE PLATFORMS**

**WEOBSERVE ECOSYSTEM**

**CITIZENS**

**POLICY MAKERS**

**RESEARCHERS**

**NGOS**

**DECISION MAKERS**

**INDUSTRIES & SMES**

**GROUP ON EARTH OBSERVATIONS**

## KEY CHALLENGES TO MAINSTREAMING CITIZEN SCIENCE

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

### ACCEPTABILITY
Showcasing the added value of citizen-driven science to decision and policy makers

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

# What is an 'Ecosystem' for COs?

# We Observe

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

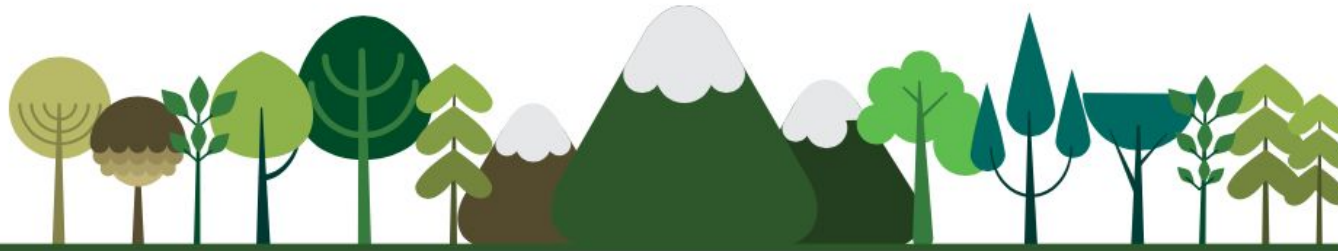Living Knowledge Festival, 28 June – 2 July 2021

**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.**
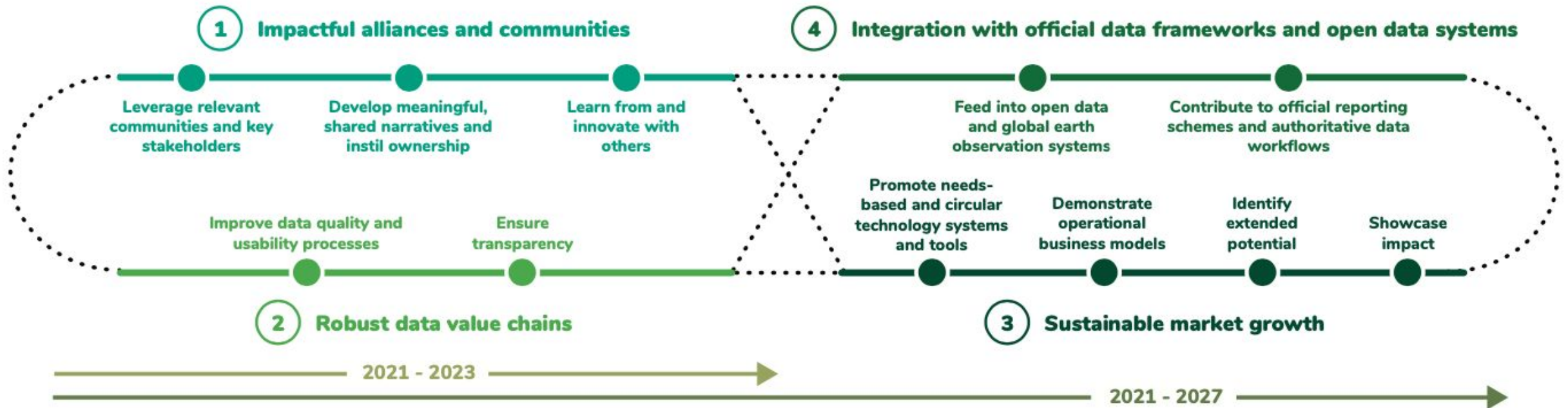
# WeObserve Roadmap

- **Practitioners** (research institutions, civil society organisations, public authorities 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 the European Green Deal agenda;

- **National funding agencies** of EU member states to learn about Citizen Observatories and identify suitable scenarios for funding Citizen Observatories nationally.

# 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

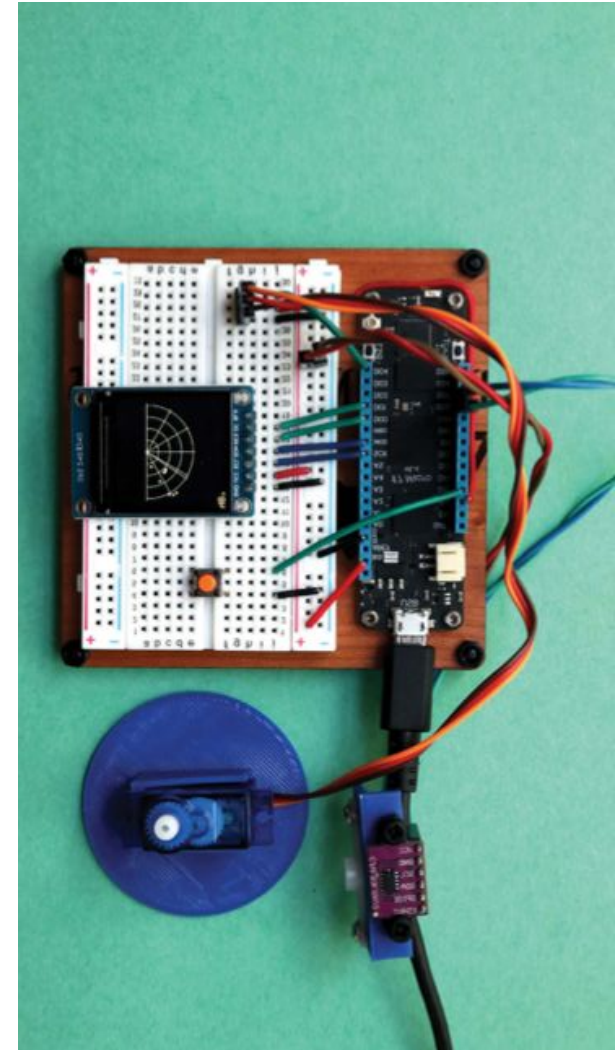- **Recommendations** to future funders of Citizen Observatories

# Area 1: Impactful alliances and communities (2021-2023)

- **Leverage relevant communities and key stakeholders**

  - Engage with **active, place-based communities**, community organisations and citizen-driven initiatives (gatekeepers and community champions); **decision makers, policy and government agencies**; Develop operational relationships with the **media and business/industry**

- **Develop meaningful, shared narratives and instil ownership**

  - Tap into **media expertise and R&D** for audience development and innovative participation models; Ensure strong and **suitable communication and facilitation across stakeholders**; Employ **co-design approaches** to democratise processes and foster ownership and buy-in; Acknowledge and **reward voluntary participation**

- **Learn from and innovate with others**

  - Ensure **transdisciplinary anchoring** and responsible research practice; join/start groups for **knowledge and experience exchange** on relevant topics

# Area 2: Robust data value chains (2021-2023)

- **Improve data quality and usability processes**
  - Improving **semantics and tools for data collection, annotation and review**, incl. description and definition of purpose and value of gathered data across stakeholders
  - Uptake of **existing data standards** and improved **data quality documentation**
  - Providing **high-quality training** to participants and data providers

- **Ensure transparency**
  - Establishing **transparent data policy models** balancing data ownership, privacy and data protection requirements with the mandate for open access data and transparent data governance
  - Deploying a **transparent and integrated ethics framework**
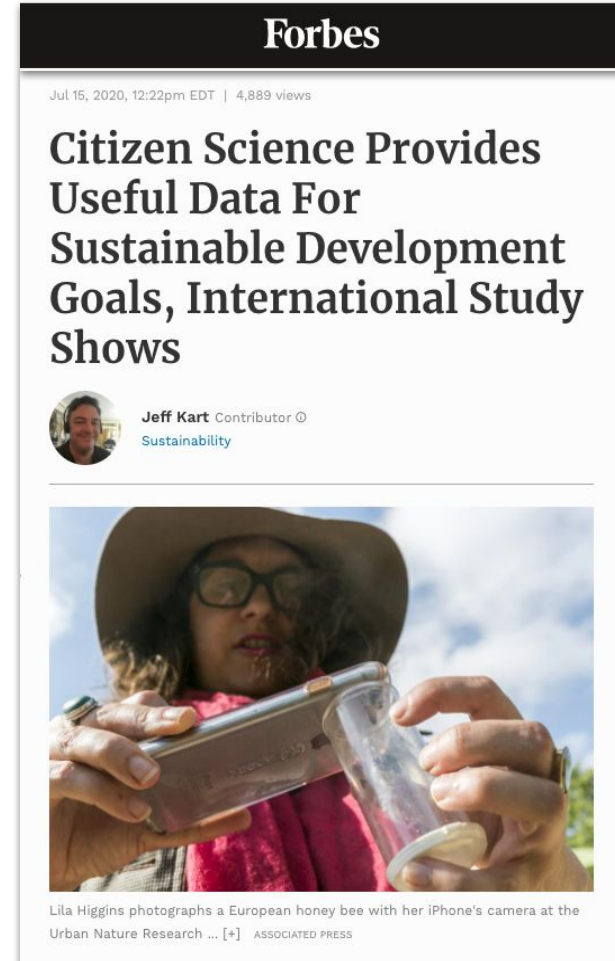
# Area 3: Sustainable market growth (2021-2027)

- **Promote needs-based and circular technology systems and tools**
  - Addressing communities and local authorities with **existing data needs**, providing **enabling technologies/processes**; Advancing existing, **open access technologies** and tools; Zero emission/zero waste approaches, actively tackling **waste issues**

- **Demonstrate operational business models**
  - Explore **service-based business, other commercialisation or long-term sponsorship models** with business partners; Prepare implementation and **handover of CO business models**

- **Identify extended potential**
  - Embed CO ambitions within a **global change context**; Strengthen links to **COs outside Europe** as well as to global initiatives; Leverage use of **COs in new domains**

- **Showcase impact:**
  - Publicise **CO costs and benefits**; Showcase **CO capabilities, success and impact stories**

# Area 4: Integration with official data frameworks and open data systems (2021-2027)

- **Feed into open data and global earth observation systems**
  - Integration with large **open data and open research infrastructures**; Share **interoperable resources and data** through **standardised platforms and services**; Improve **uptake of CO data in GEOSS** and the usability of **GEO services for COs and citizens**

- **Contribute to official reporting schemes and authoritative data workflows**
  - Enable the **uptake of CO data**; Align **data protocols**; Elevate **CO initiatives' capabilities**; Disseminate and support **best-practices**; Secure **investment and engagement**
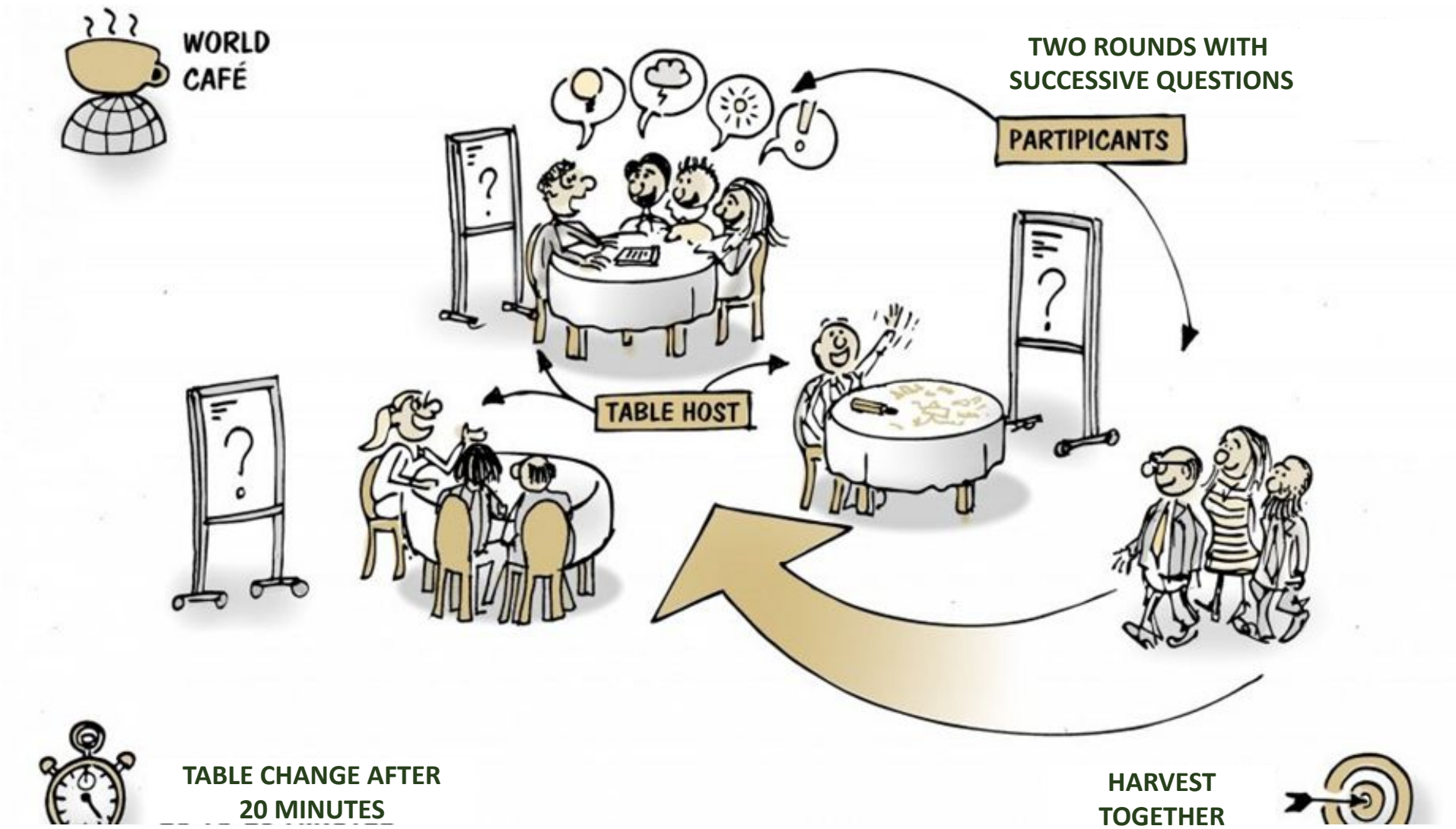


Forbes

Jul 15, 2020, 12:22pm EDT | 4,889 views

**Citizen Science Provides Useful Data For Sustainable Development Goals, International Study Shows**

**Jeff Kart** Contributor ⓘ
Sustainability

Lila Higgins photographs a European honey bee with her iPhone's camera at the Urban Nature Research ... [+]  ASSOCIATED PRESS

# World Café

# How does it work?



WORLD CAFÉ

TWO ROUNDS WITH SUCCESSIVE QUESTIONS

PARTIPICANTS

TABLE HOST

TABLE CHANGE AFTER 20 MINUTES

HARVEST TOGETHER

# World Café

4 breakout rooms (1 per area),
2 rounds (20 min each)!

**1. Impactful alliance and communities**

**3. Sustainable market growth**

**2. Robust data value chain**

**4. Integration with official data frameworks and open data systems**

# Miro Online Collaboration Platform



**General Instructions:**
- Please write one idea per post-it
- Please post as many ideas as you want

**https://miro.com/app/board/o9J_I-6yU78=/**

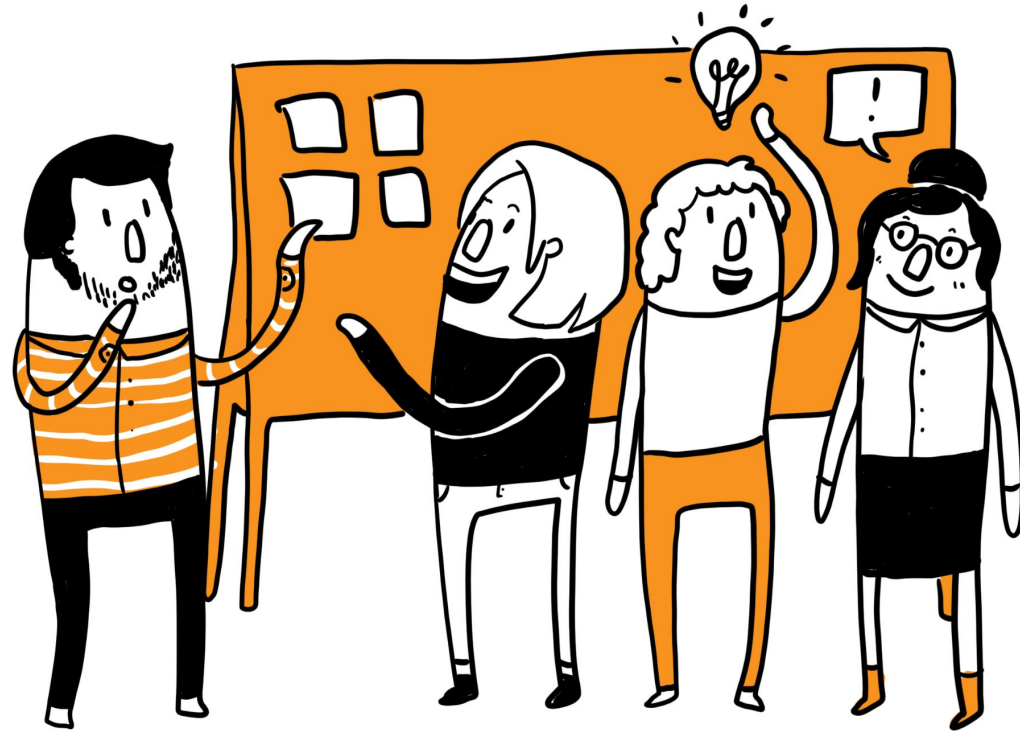# World Café (Round 1)

# World Café (Round 2)

# Final Plenary

Living Knowledge Festival, 28 June – 2 July, 2021

**(1)  What have the facilitators observed in the sessions?**

**(2)  What have the participants learned or observed from the sessions?**

**(3)  What are your top recommendations?**

# Thank you!

**weobserve.eu**

**Dr. Uta Wehn**

Associate Professor, IHE Delft

u.wehn@un-ihe.org

**Margaret Gold**

Coordinator Citizen Science Lab, Leiden University

m.gold@biology.leidenuniv.nl

**Gerid Hager**

WeObserve Project Coordinator, IIASA

hager@iiasa.ac.at