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OZCAR

Sensors and citizen sciences : What contributions for environmental sciences?

The OZCAR Community's case

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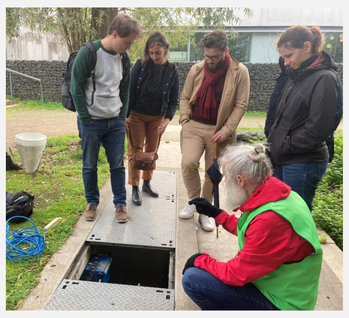
Introduction

The French Critical Zone research infrastructure, OZCAR-RI, gathers 20 observatories sampling various compartments of the critical zone, each having developed their own data management and distribution systems (Braud et al, 2020). OZCAR-RI 's action today is part of the increasingly strong perspective of being a relay of understanding for society on global environmental issues. OZCAR-RI also needs observations that are both long and frequent, at all spatial scales but also which integrate moving territories (population dynamics, environmental and economic migrations). Mobilizing citizen sciences(ESCA, 2025) in support of current organization makes sense.



Experimental description

- Sensors have center stage in OZCAR-RI. Indeed, monitoring of the critical zone relies on a network of stations with standardized sensors, calibrated and tested to support failures and under various conditions.

- How can we respond to societal questions through the development of new environmental indicators mobilizing citizens?
- How to make the data and work of observatories readable and visible to an “uninitiated” public ?
- How to structure participatory research within IR OZCAR ?

Methodologies

Preliminary investigation

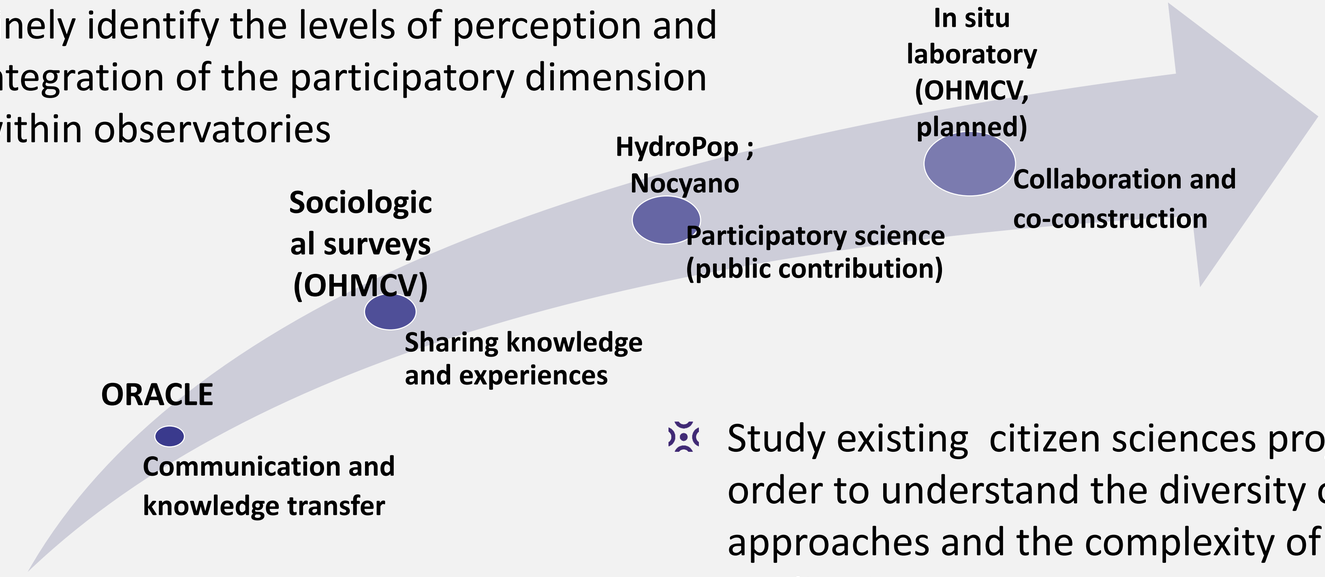
- Inside OZCAR
- From June 9 to July 13 2022
- Identify existing systems
- Collect concrete proposals or suggestions
- Prepare a guideline for participatory science projects within OZCAR

Bibliographic studies

- To specify the forms, interests and limits of citizen sciences

Deep investigation

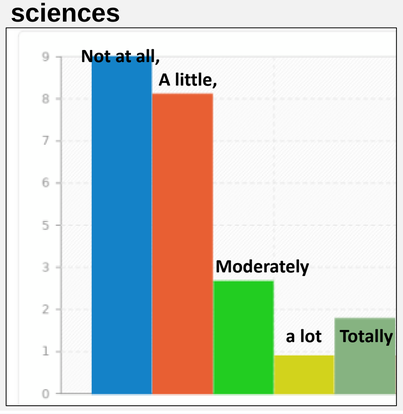
- Finely identify the levels of perception and integration of the participatory dimension within observatories



- Study existing citizen sciences project in order to understand the diversity of approaches and the complexity of their application

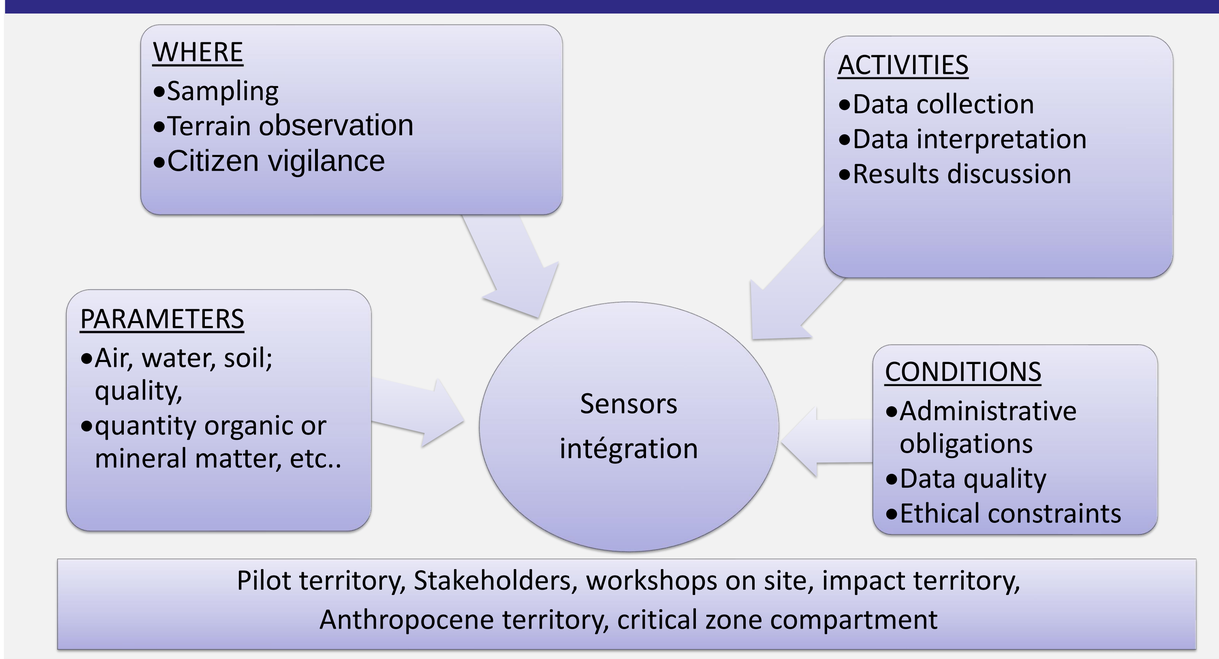
Key constatations

OZCAR members level of commitment about citizen sciences



- Participation in OZCAR: a contrasting general framework: Different levels of consideration and perception of citizen sciences.
- Different levels of integration of participation.
- “Lack” of concrete application
- Public involvement which does not always fall under citizen science

How to give sense to citizen participation?



Conclusion

Citizen sciences mobilization for environmental monitoring purposes using sensors within OZCAR raises numerous questions that are purely practical, methodological or cultural (citizen world and scientific world). However, this cannot be done without prior work on presentation or upgrading and knowledge of and to citizens regarding the instrumented devices already in place in their territories and the objectives assigned to them. Three concrete actions can be considered: (i) making these tools accessible to citizens, (ii) setting up pilot territories or workshop sites, (ii) introduce them by mobilizing digital enablers (Kouadio et al. , 2024).

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