

Background

Public Water, Sanitation, and Hygiene (WASH) services play a crucial role in urban areas. However, many of these facilities are frequently unsafe, inadequately maintained, or difficult to access. This lack of clean and secure WASH services disproportionately affects marginalized populations, particularly the homeless, who heavily rely on these facilities.

Homeless populations are frequently excluded from decision-making processes, and their perspectives and needs are often disregarded. Citizen science can be a potentially effective approach to involve marginalized communities, including homeless populations, in scientific and decision-making processes. This method can help amplify their voices and create more inclusive services.



Figure 1. Map of distribution of homeless populations in Mexico City (CENSO,2017)

Methodology

In collaboration with the civil society organization, El Caracol, we developed a co-created citizen science approach, to engage with a homeless community in Mexico City and comprehensively understand their WASH needs. This involved evaluating existing facilities and establishing essential safety criteria based on data collected through surveys and lived experiences.

According to West and Pateman (2017), citizen science can be classified as contributory, collaborative, or co-created. Co-created citizen science projects engage communities in every stage of the scientific process, responding directly to their needs and delivering tangible benefits for participants, society and science.

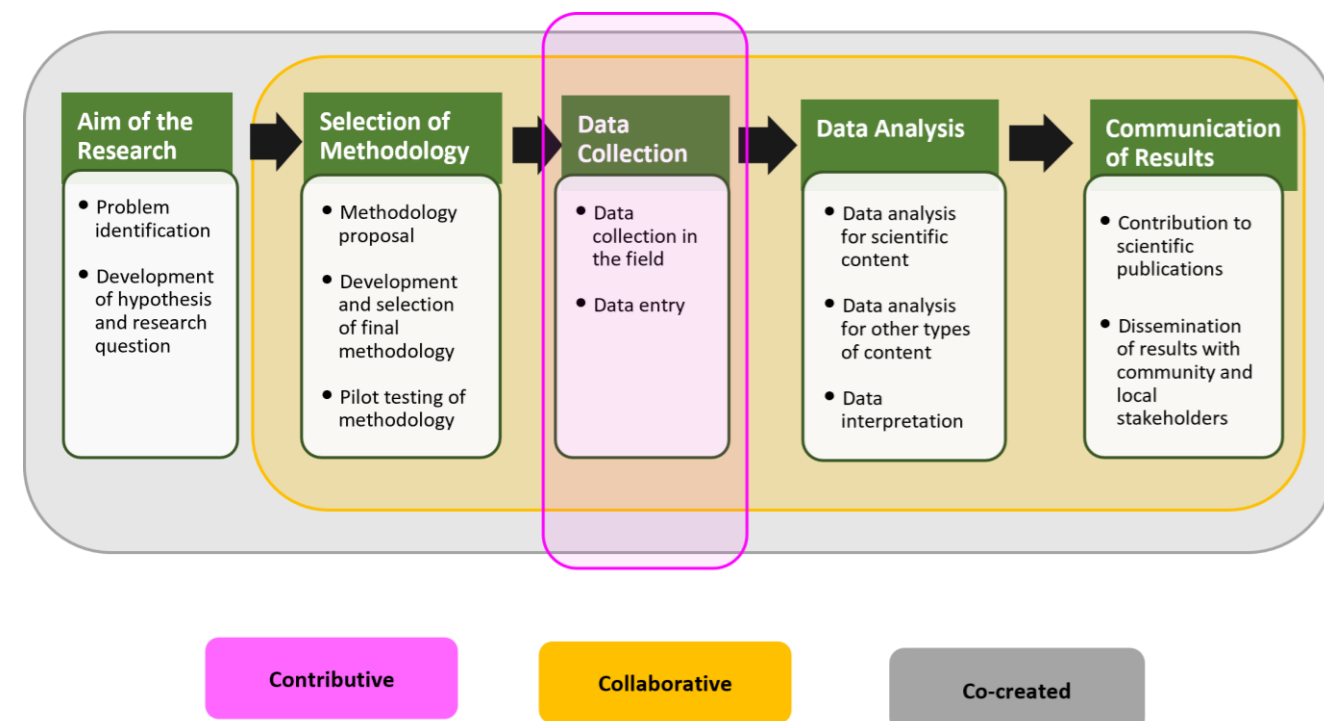


Figure 2. Categories of citizen science across research phases

QR for maps



Co- Created Citizen Science Process

- 1 - Activities to enhance trust and understanding of WASH with citizen scientists
- 2 - Development of scientific tools and data collection skills
- 3 - Group identity
- 4 - Data collection by citizen scientists through surveys and photos
- 5 - Verification of water and sanitation facilities by citizen scientists
- 6 - Rating of WASH services using criteria developed by citizen scientists
- 7- Data analysis workshop: Reflecting on co-created co-created citizen science process
- 8- Communication material production workshop for the community and local stakeholders

Results

Citizen scientists:

- Increased their understanding of water and sanitation issues from a human rights perspective.
- Developed analytical skills through reflection sessions on collected information and map-based rating of WASH services.
- Improved confidence in surveying and conducting effective interviews.
- Expressed gratitude for considering the homeless population and a strong desire to continue co-creating solutions for the identified issues.

"At first, I was sad, I didn't know how to do interviews. I worried that people might get angry or be rude. But watching my colleagues gave me confidence. When it was my turn, I thought, "if they can do it, so can I!"

Pastrana, citizen scientist



"I appreciate that the study focused on homeless individuals, it showed that others are concerned about the needs of this population. Also, since I joined the group, I take better care of water."

Gabriela, citizen scientist



"I've come to appreciate how this process of citizen science has been transformative to our work, from the involvement of the population to the more specific way of looking at the issue of water and sanitation as a human right."

Paulina, staff member El Caracol



Further application of co-created citizen science in Health and WASH sector

- Menstrual health and hygiene practices among different menstruator groups
- Access to WASH services for caretakers and their dependents
- Healthcare challenges for homeless populations living with HIV (citizen scientist's suggestion)

Information about the project

