LESSONS FROM THE NUESTRO RIO APP: REFLECTIONS ON EXPLORING LOCAL PERSPECTIVES ON WATER QUALITY IN THE PERUVIAN ANDES

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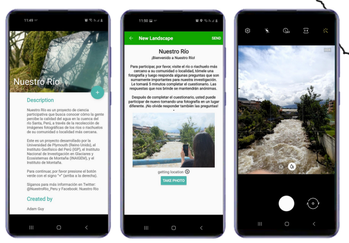
INTRODUCTION

Scientific research around water security and water quality in the Peruvian Andes has been known to **often exclude local perspectives and knowledge**, yet local water users have valuable insights and lived experiences. Furthermore, increasing community involvement and representation is essential for **more holistic, sustainable water resource management**, however more participatory approaches with local communities often have a myriad of logistical and project constraints. Through a short GCRF pilot study, as part of a interdisciplinary research team we created and rolled out a **smartphone photo elicitation app**, "Nuestro Rio" (*Our River*), as a novel tool to gather insights into local perceptions of water quality in the Rio Santa basin, Peru.

THE NUESTRO RIO APP

Nuestro Rio was developed as a collaborative, interdisciplinary and international pilot project (2020-2022). The goals of the research were co-produced in online project meetings.

The Nuestro Rio app was developed using an existing app, Landscape Connect.



The app was designed so that users could take a geolocated photo of their local water body, and answer a few short questions on water quality, perspectives and emotions.

The quantitative and qualitative survey questions were developed with all researchers.

The app was designed in Spanish as the national language for Peru. Instructions and materials were designed for the app launch.

Fieldwork was conducted Summer 2021 to help engage urban and rural communities with the app.

Over 300 entries were analysed (Rangecroft et al., 2023 - **scan QR code**). Dissemination of results was delivered through community meetings and a travelling photo exhibition (2022).

REFLECTIONS

Whilst we were successful in gathering insights and engaging with local communities (see Rangecroft et al., 2023), here we reflect on the challenges experienced in piloting **technological approaches** such as ours.

1 ROLL OUT

App roll out in the Spring 2021 was facilitated with a website, training videos and resources, and student ambassadors. **Participatory workshops for app engagement were not possible** due to COVID-19, but fieldwork in different urban and rural communities helped engage participants. However, use of the Nuestro Rio app outside of fieldwork interactions was low.

2 LANGUAGE BARRIERS

The local dialect was Quechua and the base language for the app itself (Landscape Connect) was English. Fieldwork with a translator helped to **overcome language and technological barriers** in the field, but these language barriers are likely to have contributed to the lower uptake and use.

3 DIGITAL (IN)ACCESSIBLITY

The app was designed and launched to allow an increase in data collection beyond direct fieldwork. However, a lack of familiarity with downloading and using apps within the region might have restricted this. **More research on digital accessibility and use** in the target region would be advantageous when planning future technological approaches.

4 TERMINOLOGY

Exploring concepts such as water quality can be difficult as the term has **different meanings to different participants.** Fieldwork allowed for discussion of terminology, but technological approaches alone do not account for, or overcome these issues.

5 FUNDING & TIME LIMITATIONS

Co-produced, inter- and transdisciplinary research projects require a significant amount of **time for research design and collaboration** at the start, and throughout, as well as for true community engagement and dissemination. However, this is extremely challenging in funded projects which are short in length, and constrained by small budgets.

We **thank all participants** and our fantastic Nuestro Rio research team: Rosa Maria Dextre, Isabel Richter, Claire Kelly, Cecilia Turin, Beatriz Fuentealba, Claudia V. Grados Bueno, Mirtha Camacho Hernández, Sergio Morera, John Martin, Adam Guy

Openly sharing the lessons learnt from pilot projects like Nuestro Rio can help contribute to the growing dialogue on citizen science and participatory approaches, whilst also providing support and guidance for those currently planning or exploring similar research tools and projects.

To learn more visit: https://sigmaperu.wordpress.com/

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