Leveraging digital tools and shared digital assets to address rural water security in India

Learnings from use case interviews

CENTRE FOR
SOCIAL & ENVIRONMENTAL
INNOVATION

atree

& India Climate Collaborative

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Ashoka Trust for Research in Ecology and the Environment (ATREE)

Ashoka Trust for Research in Ecology and the Environment (ATREE) is a global non-profit organisation which generates interdisciplinary knowledge to inform policy and practice in the areas of conservation and sustainability.

ATREE envisions a society committed to environmental conservation, and sustainable and socially just development.

For over two decades, ATREE has worked on issues like biodiversity and conservation, climate change mitigation and development, land and water resources, forests and governance, and ecosystem services and human well-being.

ATREE has consistently ranked in the top 20 Environment and Water Security think-tanks in the world.

Centre for Social and Environmental Innovation (CSEI)

ATREE's Centre for Social and Environmental Innovation (CSEI) aims to translate research to enhance human well-being, while also conserving the natural environment.

CSEI aims to co-create scalable solutions working with partners. We hope to build impact ecosystems to address the problems we work on.

Our solutions are rooted in scientific research. CSEI currently focuses on three problems: water & foods, invasive plant species, and climate resilient/green cities.

The Centre's focus is on empowering the 'first mile'- in their role as citizens, producers, or consumers. Our goal is to enable a transition to a more sustainable and fair system.

About India Climate Collaborative

The India Climate Collaborative (ICC) is a first-of-its kind India-led, India-focused initiative bringing together leading private and corporate philanthropies to enable a collective response to climate change in India.

The ICC seeks to connect and strengthen the Indian climate community, build a compelling India-focused climate narrative, and drive solutions that help people and nature thrive.

Mandated to amplify and spread local solutions, ICC aims to inspire and connect governments, businesses, impact investors, research institutions and civil society to work together to solve India's climate crisis with the support of the international climate community.

Contributors

Srushti Paranjpe led the use case interviews with the NGOs, and wrote out some of the context and insights.

Shilpa Swaraj wrote out the sections on the insights and did the sketches you see on pages 17 and 20.

Craig D Souza, Ganesh Shinde and Lakshmi Pranuti reviewed the sections around data, maps and digital tools.

Aparna Nambiar did the visualisations for the entire research brief.

Anjali Neelakantan also added to the sections on the insights, wrote out the recommendations, and coordinated the work.

Anu Sridharan conducted the interviews with philanthropic organisations and reviewed the brief.

Dr. Veena Srinivasan guided the overall research and reviewed the brief.

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Secondly, we would like to thank all the grassroots NGOs who participated in the use case interviews and generously shared their knowledge on the implementation of rural water security programmes and the many challenges involved.

Finally, we would like to thank all the philanthropic organisations we spoke to for their time and for validating our learnings from the use case interviews.

A detailed list of the grassroots NGOs and the philanthropic organisations we spoke to is available in the Annexure.

List of acronyms and abbreviations

API	Application Programming Interface
APPI	Azim Premji Philanthropic Initiatives
ATREE	Ashoka Trust for Research in Ecology and the Environment
BMGF	Bill and Melinda Gates Foundation
CLART	Composite Landscape Assessment and Restoration Tool
CSEI	Centre for Social and Environmental Innovation
FES	Foundation for Ecological Security
GIS	Geographic Information Systems
ICC	India Climate Collaborative
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MIS	Management Information System

List of acronyms and abbreviations

NABARD	National Bank for Agricultural and Rural Development
NGO	Non Governmental Organisation
NRDMS	Natural Resources Data Management System
ODK	Open Data Kit
PRA	Participatory Rural Appraisal
QGIS	Quantum GIS
RWSP	Rural Water Security Programme
WCDC	Watershed Cum Data Cell
WDP	Watershed Development Programmes
WOTR	Watershed Organisation Trust
WRIS	Water Resources Information System

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Executive Summary

We conducted a series of use case interviews with implementing NGOs and philanthropic organisations to understand the role of data, maps, and digital tools in rural water security programmes. Here are our insights and suggested solutions:

01
INSIGHT: 40-80% of resources (time and money) go into manual data collection in the absence of digital tools.

SOLUTION: Build capacity on digital data collection.

02
INSIGHT: NGOs are limited by difficulties in assimilating layers of map data in usable formats to provide a holistic view of the watershed.

SOLUTION: Co-create spatial data layers and remove hurdles to accessing them.

03
INSIGHT: Although NGOs collect a lot of data, it is unclear how the data informs decisions.

SOLUTION: Build capacity to help NGOs use data and digital tools for specific purposes.

04
INSIGHT: NGOs duplicate a lot of work in creating water data and map layers.

SOLUTION: Co-create shared assets and protocols for all types of data.

CONTEXT

Rural India faces a water security crisis.

In India, agriculture is important in terms of

- Livelihoods: over 50% of the population is dependent on agriculture and allied activities.[1]
- Economy: contributes over 15% to the GDP.[1]
- Water usage: consumes over 80% of the total water available in the country.[2]

Of the 160 million ha of India's arable land, 54% is rain-fed.[2] The majority of cultivated land requires irrigation and massive extraction of groundwater. Over the last 15 years, excessive groundwater extraction has resulted in a 61% decline in water levels in wells in India.[1] This has reduced water availability for some farmers and/or made it expensive to get and use water. Groundwater depletion has reduced farmer's buffers against climate variability.
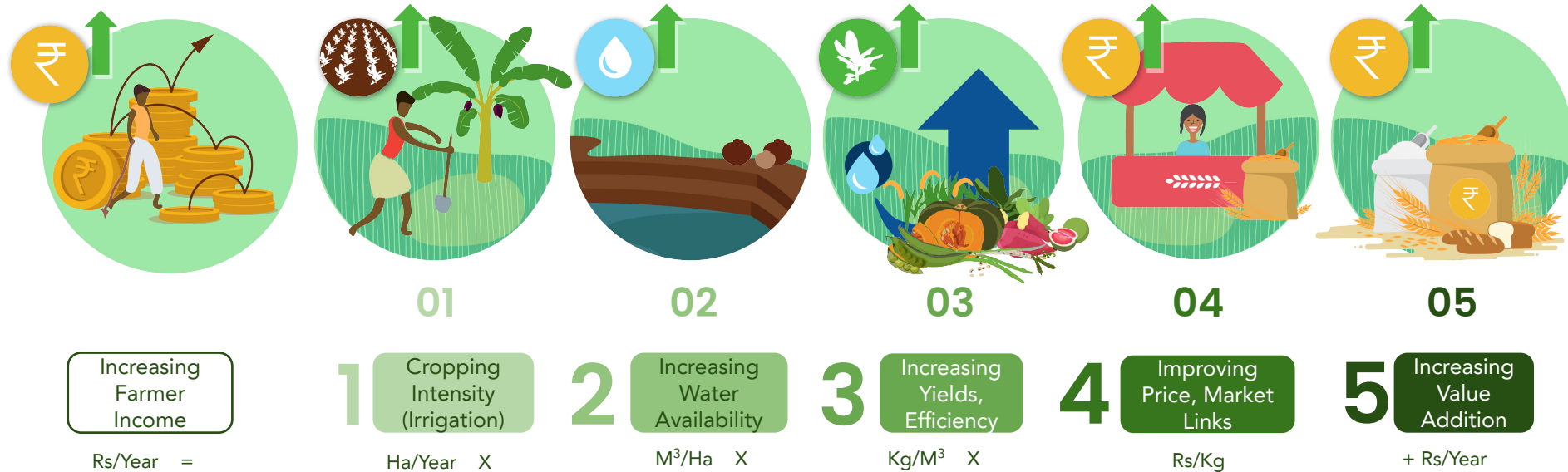
Water use is also highly inequitable. For instance, sugarcane uses about 70% of Marathwada's irrigation water despite covering a mere 4% of cultivated land.[3]

Thus, water for agriculture is scarce, fast depleting and distributed in highly skewed and inequitable ways.

To tackle the rural water crisis, many agencies have implemented a number of Rural Water Security Programmes (RWSPs). These programmes focus on maximising farmer income and agricultural productivity. The role of climate change in the variability of monsoon rainfall over India is not clear.[4] Crop-climate relationships in India are also confounded by other biophysical and socio-economic components,[5] which makes it difficult to build consensus around climate action. Hence, building climate resilience has not been a focus of RWSPs.

Rural Water Security Interventions primarily aim to improve farmer income.

	01	**02**	**03**	**04**	**05**
Increasing Farmer Income	1 Cropping Intensity (Irrigation)	2 Increasing Water Availability	3 Increasing Yields, Efficiency	4 Improving Price, Market Links	5 Increasing Value Addition
Rs/Year =	Ha/Year X	M^3/Ha X	Kg/M^3 X	Rs/Kg	+ Rs/Year

RWSPs encompass a wide range of interventions with different theories of change. RWSPs historically focused on watershed interventions - the "ridge to valley approach" and treatment of drainage lines by constructing water harvesting structures such as check dams. In recent years, their scope has expanded to boosting farmer income more holistically including micro-irrigation, in-situ soil and water conservation, crop diversification, and supplementary livelihoods. In the figure above, 1 and 2 deal with increasing access to water, 3 addresses reducing the demand pressure on the resource via cropping changes or water use efficiency improvements. 4 and 5 contribute to increasing farmer incomes in other ways.

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Use case interviews help understand how data is collected and used.

Our objective in interviewing NGOs was to understand the role of data, maps and digital tools in rural water security programme planning, design, implementation, evaluation, and monitoring.

We wanted to identify gaps and ideate on how they could be addressed.

What we wanted to know about data, maps and digital tools

While the *intended* uses for data and maps is clear, we don't fully understand their *actual on-the-ground* usage:

- What types of data and maps are collected and analysed?
- How is the data collected, stored and used?
- What roles do data and maps play in actual design and implementation of RWSPs?
- Are digital tools currently being used in any part of the data lifecycle? If so, in what ways?
- What challenges do grassroots communities face around data, maps and the uptake of digital tools for RWSPs?

INSIGHTS

Rural Water Security Programmes include the following phases.

Phases	Prepare		Plan			Implement	Monitor
	Define scale and scope	Set up local committee	Collect data for planning	Conduct PRA	Design interventions	Implement interventions	Evaluate impact
Digital tools used	Google Earth		ODK collect, KoBo Collect, Google Forms, Google Earth			None	Google Earth, Well monitoring apps

"As an implementing NGO, our priorities differ for each project and depend on local context. The interventions we design for a region depend on both farmer demands and expert advice." – *An NGO*

"All RWSPs, irrespective of who the donor is, are participatory from start to finish." - all NGOs

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INSIGHT 1

40-80% of time and resources go into data collection in the absence of digital tools.

NGOs still collect a lot of household/ farm data on paper because of lack of capacity and knowledge.

The first step in RWSP planning is village/ household level discussions and surveys. Typical indicators captured include:

- Village demography and assets like population and number of households.

- Household data like income, livestock, landholding size and type.

- Farm-related data like input costs, crop yield, total irrigated area, farm income, number of trees.

- Water sources like irrigation sources, harvesting structures.

NGOs tend to follow donor guidelines and templates for data collection for this.

ONLY
4 out of 19 NGOs
use digital tools for data collection; all NGOs have a strong preference to use paper for surveys.

NGOs collect both baseline data (before programme implementation) and endline data (after programme completion) and compare them to understand the impact of interventions. Third party agencies who assess the impact of an RWSP, also rely on baseline data that the implementing NGOs collect.

Surveys are time consuming, taking anywhere between 3 months to 1.5 years depending on the size of the watershed.

Start   1.5
                                 YRS

3 MONTHS
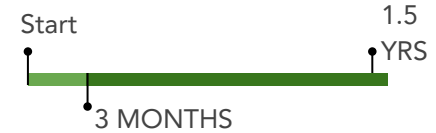
Data collection was reported to be tedious and extensive in terms of the number and nature of the questions. They included both qualitative and quantitative questions.

A subset of NGOs additionally reported installing sensors to collect data on rainfall, rate of soil erosion, run off, and stream flow.

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01

40-80% of resources (time and money) go into manual data collection in the absence of digital tools.

Most NGOs seem to prefer paper-based surveys. NGOs reported two reasons for this strong preference:

1) **Lack of capacity and knowledge among surveyors:** teams that conduct these household/farm surveys also include individuals from within the community. They often have no experience with conducting surveys and require trainings, which is time-consuming.

2) **Fear of information loss and comfort with legacy systems:**

NGOs worry that shifting to digital tools may result in information loss on context, especially for qualitative questions.

NGOs prefer tools that allow for direct export to Microsoft (MS) Excel as it is convenient to use; almost all NGOs store their data in MS Excel. Others use their own or MGNREGA's MIS (Management Information System) portal.

Data collection tools that NGOs use

Google Forms

ODK Collect

KoBo Collect

Forms

KoBoToolbox

01

40-80% of resources (time and money) go into manual data collection in the absence of digital tools.

Most NGOs reported use of mobile smart phones in rural areas, indicating that there is a ready audience for wider use of mobile applications in rural water security programmes.

Only 2 NGOs reported little to no smartphone usage and limited network connectivity – both of these work in remote, tribal areas.

One NGO is developing a "zomato-like" mobile application: farmers can add details on size of farm, weather and water conditions. The app will recommend the best interventions for the farm. Farmers can even place requests for in-farm interventions and advice on farm inputs with this app.

Some NGOs give smartphones to a select few members of the community as part of the RWSP. These 'water-stewards' help the NGO track interventions, monitor water levels, etc. even after project completion. This is usually done via text and image/video updates.

In terms of monitoring applications:

APWELL, involves the community in long term monitoring efforts, after RWSP completion.

MYWELL, is another a app, that allows farmers to update the number of wells and water levels in their area.

Above: MyWell App screen showing the location of wells being monitored.

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02

INSIGHT 2

NGOs are limited by difficulties in assimilating layers of map data in usable formats to provide a holistic view of the watershed.

They use paper maps or printouts of digital maps to help communities understand the watershed.

10 out of 19 NGOs
use digital mapping tools for internal planning.

NGOs use different GIS (Geographic Information System) platforms: ArcGIS, Global Mapper and QGIS for planning projects. Between the three, ArcGIS seems to be the most commonly used, indicating that NGOs have substantial budgets for mapping exercises. ArcGIS requires a license for usage, while QGIS is an open source software that is free for all to use.

A few NGOs mentioned using Google Earth and Google Earth Pro for mapping different layers.

Common map types used include:
- Cadastral maps
- Topography sheets
- Contour maps
- Land Use/Land Cover
- Hydrology maps
- Drainage line maps

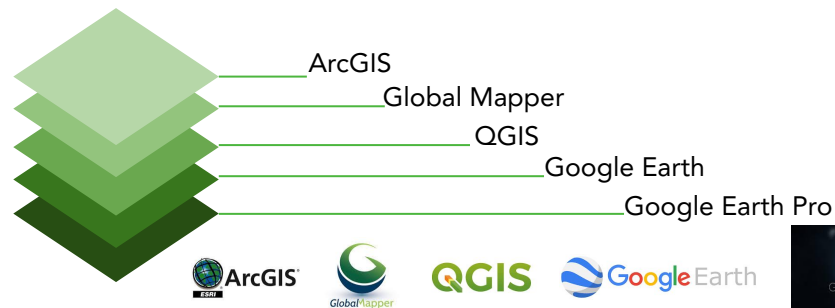Primary sources of data for these maps: Bhuvan, Bhukosh, NRDMS.

NGOs find mapping tools to be useful in internal planning exercises but not as useful for engaging with communities

GIS tools that NGOs use

ONLY
4 out of 19 NGOs
use digital mapping tools for community engagement.

During PRA exercises, they use chart paper or maps drawn with rangoli on the floor. The entire village comes together to identify the plots of land in the village, the boundaries, the water sources in and around the village, and drainage lines and plot them on these maps.

ArcGIS

Global Mapper

QGIS

Google Earth

Google Earth Pro

ArcGIS   GlobalMapper   QGIS   Google Earth   Google Earth Pro

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02

NGOs are limited by difficulties in assimilating layers of map data in usable formats to provide a holistic view of the watershed.

Community engagement - digital tools

Community engagement - paper maps

INSIGHT 3

Although NGOs collect a lot of data based on checklists, it is unclear how the data informs decisions.

NGOs intend to use the data for specific purposes like water budgeting, water security plans or impact assessment but much of it remains unused.

NGOs intend to use the data they collect in the following ways:

a) Water budgeting

Most NGOs do water budgeting exercises. This is often seen as an activity that must be done to check off of the list for RWSP planning guidelines.

The village watershed committee collects crop and water related data through household surveys. Some of this information is verified through ground-truthing during the project.

One NGO gave an example of how the water budget for a village is displayed

on a black board at an accessible point in the village. However, the numbers often remain static. They are not updated to account for the changing water conditions in the village from year to year.

Additionally, while water budgeting exercises are conducted as part of projects, it is unclear how the results are used to inform cropping decisions.

b) Intervention design

Decisions on intervention design (which structure to put where) are often based on experience. Here, NGOs balance farmer demands with the advice of their technical expert. A few rely on local wisdom, e.g. to identify recharge zones.

We found very few examples of how formal data informs intervention design. One notable example is the CLART tool by Foundation for Ecological Security (FES), which uses GIS map layers to locate the best place for an intervention.
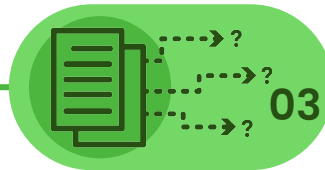
03

Although NGOs collect a lot of data based on checklists, it is unclear how the data informs decisions.

c) Impact evaluation

Evaluating the impact of RWSPs is important to NGOs since it helps demonstrate the benefits of the RWSPs to the village. Some NGOs report that donors require external agencies to be hired for impact assessment of RWSPs, while some others carry out the evaluations themselves.

NGOs face some major challenges when assessing the impact of RWSP interventions.

The attribution challenge:

All NGOs collect baseline and endline data. But this is often not sufficient to assign attribution as there are a number of confounding factors. For example, one NGO built check dams in multiple places. They used Google Earth to identify changes in the surrounding greenery pre and post construction. However, they are unsure if the increase in greenery is due to the check dam or due to good rains in the 2-3 years preceding programme completion.

The timeline challenge:

The outcomes or direct benefits are typically measured 1-2 years after the completion of the project. However, the impact of many RWSP interventions is visible only years after implementation, according to experienced NGOs.
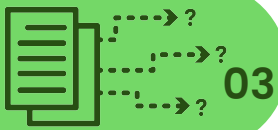
The co-evolution challenge:

History suggests outcomes are not static. Farmers in turn change their cropping patterns when new water is made available. Thus even if groundwater levels rise initially, they may decline later, requiring a longer evaluation time frame.

The hydrologic data challenge:

While household survey data is easily collected, other types of data are more difficult to obtain; for instance, spatial data; on ground, surface water quality and quantity. These involve technical skills, which both NGOs and impact assessment organisations lack.
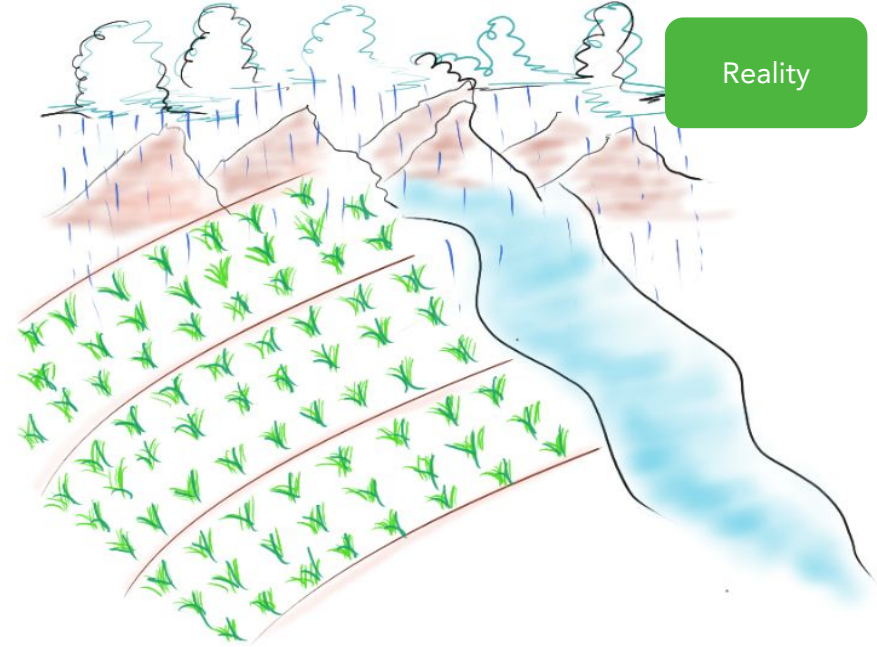
Without scientific backing via data that track resource sustainability over time, there is a concern that the changes may not be sustainable as farmers change cropping over time.

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Although NGOs collect a lot of data, it is unclear how data informs decisions

Is there any improvement in profitability after the project?

Yes, we were able to get multiple crops this year, thanks to the RWSP.

Reality

Impact evaluation interviews suggest increases in income due to intervention.

Crop productivity improved because of a good monsoon.

04

INSIGHT 4

NGOs duplicate a lot of work in creating water data.

This results in loss of time, money and opportunity for cross learning.

NGOs are working in isolation, and this results in multiple challenges:

1. **Lack of convergence** – There are no shared assets or references for data collection and processing.

2. **Lack of accountability** – Since there are no external audits of data collected, the credibility of data is often questionable.

3. **Lack of liquidity** – There are no cross learnings between NGOs, preventing data collected in one programme to be useful for another programme in the same geographical area and/or for similar interventions.

4. **Lack of participation** - There are not enough NGOs participating in collective learning. Platforms either don't exist or have not offered the necessary conditions for NGOs to interact.

These challenges have been echoed by the philanthropic community as well. Philanthropic organisations also have varied data across different grassroots communities, indicators, geographical units and templates. This makes it difficult to make cross-programme comparisons. For example, one of the organisations spoke about how Human Development Indicators (HDI) were available for some districts but not others.

Hence, there is a **strong need for more collaborative work in the water ecosystem** through platforms with shared protocols and formats that can **host all maps and data in one place**. This will avoid duplication of effort and offer significant savings in time and resources to the larger community.

This requires a 'meta-investment' in the sector, rather than just project-level investments.

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04

NGOs duplicate a lot of work in creating water data.

A preliminary literature search on the Cauvery river basin – an area that extends over 80,000 sq.km covering Tamil Nadu, Karnataka, Kerala – revealed that 40 studies were being done simultaneously in 2015. The studies covered interrelated themes including rural water security, climate impact, water-soil assessment and agriculture.

Over the period from 2010-2020, there have been ~ 250 studies in the Cauvery river basin on similar themes. It is unclear if findings and data from one study informed the others.
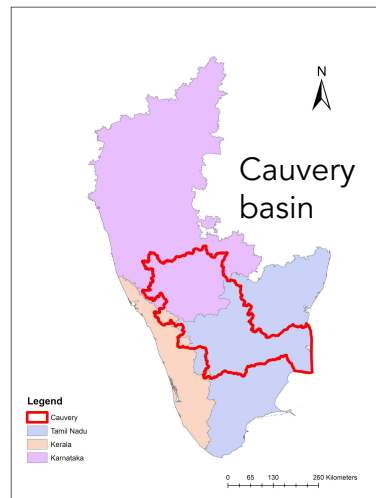
Studies on interrelated themes conducted in the Cauvery river basin

40
studies in 2015

250
studies in 2010–20

Cauvery basin

Legend
- Cauvery
- Tamil Nadu
- Kerala
- Karnataka

0 65 130   260 Kilometers

Common elements in the studies that likely entailed at least some duplication of effort include:
1. Land use and soil maps
2. Groundwater maps
3. Census data
4. Topographic maps
5. Climate data analyses
6. Geological Survey of India maps

Philanthropic organisations are also fully aligned with this need for sharing data. They flagged two needs in interviews:

- Identifying all the datasets and sources most water programmes require – what data is currently available, who owns it, what data is required for programmatic design, and how can we make the data more widely available?

- Bringing legitimacy to the primary data collected, on par with government data that is trusted and used widely. What protocols can we develop to ensure that the primary data collected through projects can be trusted and shared within the larger water community?

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NGOs duplicate a lot of work in creating water data.

RWSP Implementation → Generates data → Generates findings → **But, what happens to the data and findings**

Programme implementation is often linear, and not circular. Data and learnings from projects sometimes inform related projects within organisations. However, they rarely cross the organisational boundary and inform projects outside.

"As we face the climate crisis, there is a need to collaborate on water security projects. We work in one corner of the country at a small scale but our data and learnings can be useful in some other corner too." - Grassroots NGO
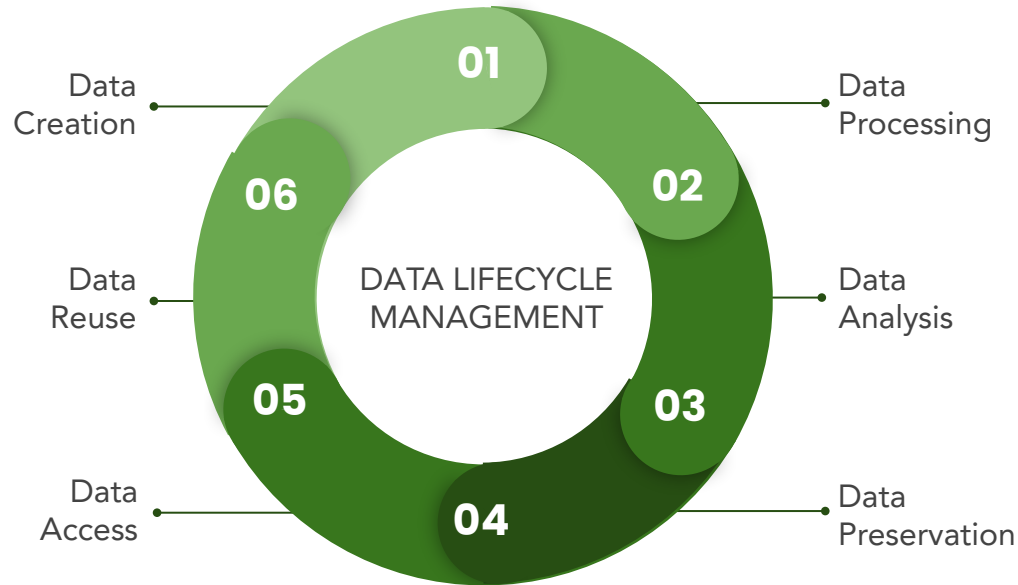
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SOLUTIONS

01

INSIGHT: 40-80% of resources (time and money) go into manual data collection in the absence of digital tools.

SOLUTION: Build capacity on digital data collection.

SOLUTION 1

Build capacity on the digital water data lifecycle

Create training material and conduct workshops for NGOs on how to use digital data collection tools, and how to manage the data collected through its lifecycle.

Data Creation

Data Processing

Data Reuse

Data Analysis

Data Access

Data Preservation

01 02 03 04 05 06

DATA LIFECYCLE MANAGEMENT

What's next?

We propose creating tools, training material and courses on data lifecycle management to build capacity on this. This will include creating metadata standards and guidelines for water-related data as well. This will include topics like pros and cons of various mobile applications for data collection, analysis, archival/preservation, and ways to use this data for learnings both within and outside the organisation.

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CSEI

02 **INSIGHT:** NGOs are limited by difficulties in assimilating layers of map data in usable formats.

SOLUTION: Co-create spatial data layers and remove hurdles to accessing them.

SOLUTION 2

Co-create spatial data layers and remove hurdles to accessing them

Co-create shared map layers that will aid communities in developing a shared understanding of the watershed. E.g., to create participatory resource maps and water security plans.

Data sources available across multiple platforms to be made easily accessible on a single free and open source platform for viewing and decision making.

India WRIS API

Google Earth Engine

ODK

Social Layers API
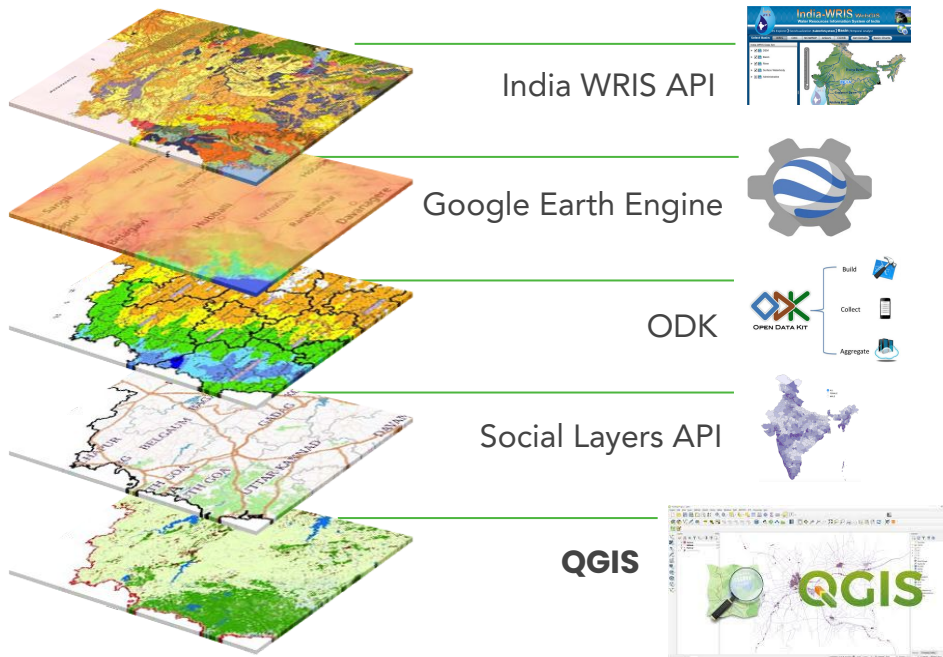
QGIS

What's next?
We propose a QGIS plugin that will allow communities to access common map layers: 1) Administrative boundaries, 2) Land use/land cover, 3) Rainfall, 4) Elevation, and 5) Soil-related indicators. This will require building functionality to aggregate data collected from multiple sources like Google Earth Engine, India WRIS, Census and ODK (for household/farm surveys) into QGIS, a widely-used, free and open source GIS platform.
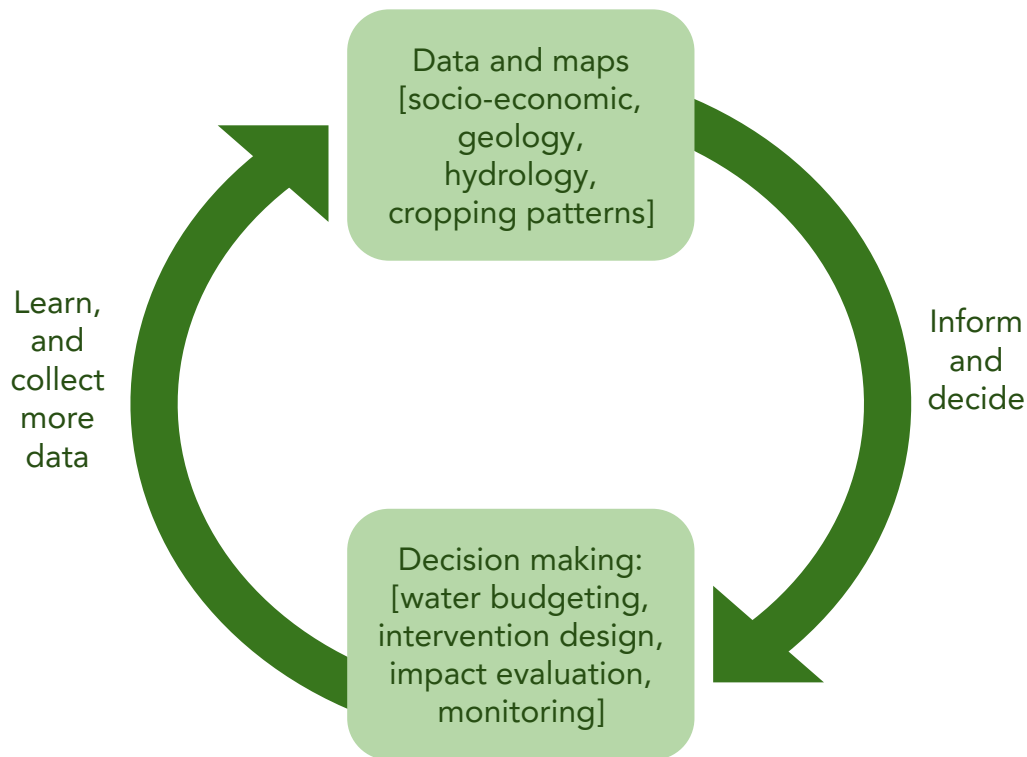
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03

INSIGHT: Although NGOs collect a lot of data, it is unclear how the data informs decisions.

SOLUTION: Build capacity to help NGOs use data and digital tools for specific purposes.

SOLUTION 3

Build capacity of grassroots communities to use data and digital tools to make decisions

Create training material and workshops to help grassroots communities use the data and maps for programmatic efforts.

Data and maps [socio-economic, geology, hydrology, cropping patterns]

Learn, and collect more data

Inform and decide

Decision making: [water budgeting, intervention design, impact evaluation, monitoring]

What's next?
We propose creating training materials and conducting workshops to help communities use data and digital maps for water budgeting, intervention design, monitoring of outcomes and impact evaluation. By demonstrating how data can be used effectively, we hope to create a culture of data-driven decision making.

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04

INSIGHT: NGOs duplicate a lot of work in creating water data and map layers..

SOLUTION: Co-create shared assets and protocols for all types of data.

SOLUTION 4

Co-create shared assets and protocols for all types of data

Co-create common protocols to share spatial digital assets on Open Street Map and other shared platforms to enable cross learnings.

Data sources available across multiple organisations in different formats and templates need to be standardised for larger dissemination.

Open Street Map

Common protocols
Metadata + Primers

What's next?
We propose creating a 'knowledge commons' to aggregate datasets from past, present and future RWSPs. This will require standard templates for metadata, data collection and analysis that anyone can use. It will also require setting up a co-owned digital platform or leveraging existing public commons like "Open Street Maps" to allow for data sharing between communities working in similar geographical areas and/or on similar interventions.

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ANNEXURE

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Methodology

We interviewed 19 NGOs and 13 philanthropic organisations that work closely with rural communities at the village level for implementation of RWSPs. We used snowball sampling to identify the NGOs and philanthropic organisations to interview as use-cases. We interviewed NGOs that ATREE has worked with previously for other water-related projects. Some of our interviewees introduced us to other NGOs working on RWSPs. The ICC community also helped us connect with some NGOs and philanthropic organisations.

In this research brief, we refer to both NGOs and grassroots communities. While NGOs refer to mostly not for profit organisations working on RWSP implementation, grassroots communities refer to all groups that work on RWSPs at the community level, including NGOs, Gram Panchayats (GP), Community based Organisations (CBOs), Farmers Organisations (FOs), Self Help Groups (SHGs) and any other group/institution that works on the ground. Given the vast number of WDPs NGOs have implemented, we have restricted the scope of the use case interviews to include only them. However, the recommendations can be applied to other grassroots communities as well, who can take ownership of some of the proposed recommendations.

Also, please note that we have used the terms RWSPs and WDPs interchangeably in this brief as both programmes seem to be focussing on the same outcomes based on the use case interviews we conducted.

List of NGOs interviewed

1. Jana Jaagriti, Andhra Pradesh
2. Mysore Settlement and Redevelopment Agency (MYRADA), Karnataka
3. Action for Agricultural Renewal in Maharashtra (AFARM), Maharashtra
4. Arid Communities and Technologies (ACT), Gujarat
5. Development of Humane Action (DHAN) Foundation, Tamil Nadu
6. Watershed Support Service and Activity Network (WASSAN), Telangana
7. Society for Promoting Participative Ecosystem Management (SOPPECOM), Maharashtra
8. Modern Architects for Rural India (MARI), Andhra Pradesh
9. Development Support Centre (DSC) - India, Gujarat
10. Accion Fraterna Ecology Centre, Andhra Pradesh
11. Utthan, Gujarat
12. Pragati Abhiyan, Maharashtra
13. Abhinav Bharat Samaj Seva Mandal (ABSSM), Maharashtra
14. Development Alternatives (DA), Madhya Pradesh
15. Gram Arogya Ghati, Maharashtra
16. Professional Assistance for Development Action (PRADAN), New Delhi
17. Development Research Communication and Services Centre (DRCSC), West Bengal
18. Art of Living Foundation, Karnataka
19. Partners in Prosperity (PnP) India, New Delhi

List of philanthropic organisations interviewed

1. Tata Trusts
2. Edelgive foundation
3. Azim Premji Philanthropic Initiatives
4. Arghyam
5. Foundation for Ecological Security
6. Watershed Organisation Trust
7. Bill and Melinda Gates Foundation
8. Overseas Volunteers for a Better India
9. ATE Chandra Foundation
10. The World Bank
11. Swades Foundation
12. Hindustan Unilever Foundation
13. Green Artha

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Interview Guide for grassroots NGOs

Project phases
- What is the typical duration of watershed projects?
- What phases are projects usually divided in? Is this based on what the donor guidelines/ net planning guidelines say?
- How are project areas identified? Focus: rainfed/ irrigated?

Community involvement
- Once the project area is identified, what are next steps? Is the village community involved?
- What are some of the methods you use for community engagement? Are data tools like maps, etc used? If yes, what kind; if no, do you think using such tools will help you to paint a picture of current problems and planned intervention for the community?
- How do communities usually respond to your efforts to include them in the design process? What are the levels of cooperation between the different actors in the watershed?

Intervention design
- What are some common interventions for watershed projects? How do you decide which interventions to select for an area?
- Are interventions designed on a plot-to-plot basis? Who all are involved in the decision making process (do farmers ask for specific interventions or do experts suggest these? Or is it a collaborative process?)
- What kind of interventions are designed for the commons land? Do you require shramdan/ contribution from villagers for these?
- For a majority of your projects, is there a common theory of change? If so, could you describe it for us please?

Data generation, collection and usage
- What kind of data (natural resources, socio-economic and spatial data) do you usually use during the design process?
- How is the data collection carried out and how is the database maintained? What is the average time you spend in data collection for WDP projects?
- How is monitoring data captured? - paper/ excel /mobile apps or any other data/GIS tools used?
- On what scale are the datasets you currently use available? How do you currently use this data in design and community participation when planning interventions?

Impact evaluation metrics
- Is there an evaluation component to your projects? If Yes, how is the impact assessment carried out prior to the project and at the end of project? Who are the people involved in this process? [What role do donors play in this process?]
- Have there been instances where after projects are completed, you have been able to revisit the villages/ communities a few years later to assess the situation and impact of the project?
- Are communities involved in (long term) monitoring of projects? Do you do any capacity building for this?

Scaling – barriers and enablers
- What is the typical scale of your current WDP work - Area? Number of villages?
- From your experience, what are the main barriers to effectively scale the interventions over larger areas? Where do you think are the most critical bottlenecks?

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If you have any questions, or if you would like to collaborate with us on this project, please contact:

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