

EGAP STORIES OF CHANGE

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# CAN CITIZEN MONITORING OF URBAN WATERWAYS IMPROVE THE QUALITY AND MANAGEMENT OF THE WATER?

## LESSONS FROM CHINA

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The Metaketa Initiative is a **collaborative research model** with a mission to improve knowledge about critical governance issues through **rigorous field experiments**. In each Metaketa "round," the initiative coordinates multiple studies on a specific topic or intervention in a variety of countries and contexts.

The third Metaketa round focused on **natural resource governance**, with studies in six countries exploring the roles, responsibilities, and resources of community-based monitors on the quantity and quality of renewable resources. Here we share the story of an experiment in **China** where citizens are monitoring the local waterways in an effort to inform and encourage water resource managers to improve the water quality.

The Metaketa Initiative is led by Evidence in Governance and Politics (EGAP) at the University of California, Berkeley. It is partially funded by the UK's Department for International Development and involves a global network of researchers conducting studies in countries around the world.

## PROJECT COUNTRY: CHINA



## PROJECT TIMELINE

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BASELINE: JULY 2017  
INTERVENTION: SEPTEMBER 2017  
ENDLINE: MAY 2019



Bing Zhang and Mark Buntaine, the study's Principal Investigators, pose in front of a waterway while sporting t-shirts made for the enumerators.

# THE CHALLENGE

Water pollution is one of the most pressing issues in China. Due to massive industrial wastewater discharges and the extensive use of agricultural fertilizer, approximately 70 percent of China's rivers and lakes are deemed unsafe for human consumption (World Bank 2007).

In Jiangsu Province, these challenges are particularly pronounced. Having undergone rapid urbanization in recent decades, small urban waterways suffer from poor water quality, polluted by municipal sewage and garbage. Unlike larger watersheds and rivers, which are subjected to automated government monitoring, small urban waterways are not well-monitored and have not received much attention from water resource managers.

Since 2015, the Mochou Ecological Environmental Protection Association (MEEPA), has monitored the water quality of urban waterways by conducting simple chemical analyses that are carried out by trained volunteers in Jiangsu. This includes assessing odor, taking pH readings from waterways, and measuring Chemical Oxygen Demand (which provides a measure of organic pollutants in waterways). However, under their existing program, data from social monitoring is not disclosed or disseminated systematically.

“CAN CITIZEN MONITORING IMPROVE THE QUALITY AND MANAGEMENT OF URBAN WATERWAYS?”

A waterway in Jiangsu Province that was included in the intervention.





# RESEARCH DESIGN



Mark Buntaine (University of California, Santa Barbara) and Zhang Bing (Nanjing University) partnered with MEEPA to implement a randomized controlled trial (RCT) that systematically monitors the waterways and shares the results of these reports with local authorities. The goal of this RCT then, was not only to study water quality in a controlled setting, but to find a scalable solution to the problem.

Specifically, the intervention included three aspects:

1.) Random assignment of urban waterways in Jiangsu province

to be monitored over the course of 15 months

2.) Recruitment of a monitoring team of three residents that lived near each waterway who filled out a water quality scorecard (e.g., about odor, color) twice a month and collected a water sample for testing by MEEPA

3.) Random assignment of information collected by the monitors to be disseminated to local government agencies, the public, or both

# RESULTS

This study found that when citizen groups monitor the water quality of urban waterways and supply that information to local authorities, pollution decreases. However, they did not find the same effect when monitoring is disseminated to the public. In fact, when information from monitoring was disseminated to the public, the researchers found no effect on water quality, littering, or the attitudes and behaviors of residents living close to the waterways.

This study's results are most similar to the Costa Rica study that formed part of this Metaketa round. The Costa Rica project focused on monitoring groundwater in rural villages. The intervention included training local residents as community monitors who observed the groundwater connections in their neighborhoods for any leaks or illicit water connections, and recorded aspects of the water itself (e.g., color, odor) and shared this information with local water authorities and other residents.

While these two studies look at different water sources, their results are similar. In both contexts, when information was shared with local officials, community monitoring was effective in reducing the degradation of the water resource being observed and increased citizen satisfaction with the management of waterways and groundwater. Additionally, in both studies, dissemination to the public didn't work as well, which shows the importance of NGOs' need to work with governments to achieve outcomes.

80

Number of waterways assigned to the monitoring condition.

160

Number of monitors trained to observe waterways on a bi-monthly basis.

# LESSONS + IMPACT

One of the most important lessons learned from this project is that holding local resource managers accountable matters. That is, for interventions to work, community monitors must provide information that makes local officials accountable to higher authorities and thus, incentivizes them to act on the information shared. In the case of China, community monitoring improves resource management when it addresses misaligned incentives between authorities that set rules and that enforce rules.

As a next step, researcher Bing Zhang and his team at Nanjing University along with MEEPA officials plan to use the monitoring reports and results from this study to set up a series of round table discussions with government officials and NGOs, as well as local citizens and companies operating in the province to find sustainable, long-

term solutions to the water quality issues that plague the area.

Key takeaways from this project and the other studies that form this Metaketa round suggest that community monitoring can be effective at yielding less resource consumption and more empowered communities but can be costly and requires sustained support. Furthermore, sustaining community monitoring over time may lead to larger gains as citizens become more familiar with the program and monitors become more confident in their efforts to observe the natural resource. Finally, and perhaps most importantly in the case of China, considering who should be the primary targets of monitoring dissemination, communities or management authorities, will go a long way in determining the success of a community monitoring program.

## QUESTIONS FOR FURTHER CONSIDERATION

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As researchers and practitioners continue to study how to manage natural resources effectively, here are a few questions for further consideration:

- What are the effects of natural resource governance when communities' capacity is enhanced to monitor resource use?
- What are the costs and benefits to communities to sustain community monitoring efforts?
- Do the costs outweigh the benefits?
- What role can local NGOs and CSOs play in increasing natural resource governance?



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## LEARN MORE

For additional information about this study, visit the [project webpage](#).

Explore other projects in the [Metaketa III round](#).

## KEY CONTACTS

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