

Citizen monitoring in China improves local water quality

NGOs can help remediate severely polluted waterways by sharing monitoring information with local governments.

Based on **Mark T. Buntaine, Bing Zhang, and Patrick Hunnicutt. 2021. "Citizen Monitoring of Waterways Decreases Pollution in China by Supporting Government Action and Oversight,"** [*PNAS*](#).

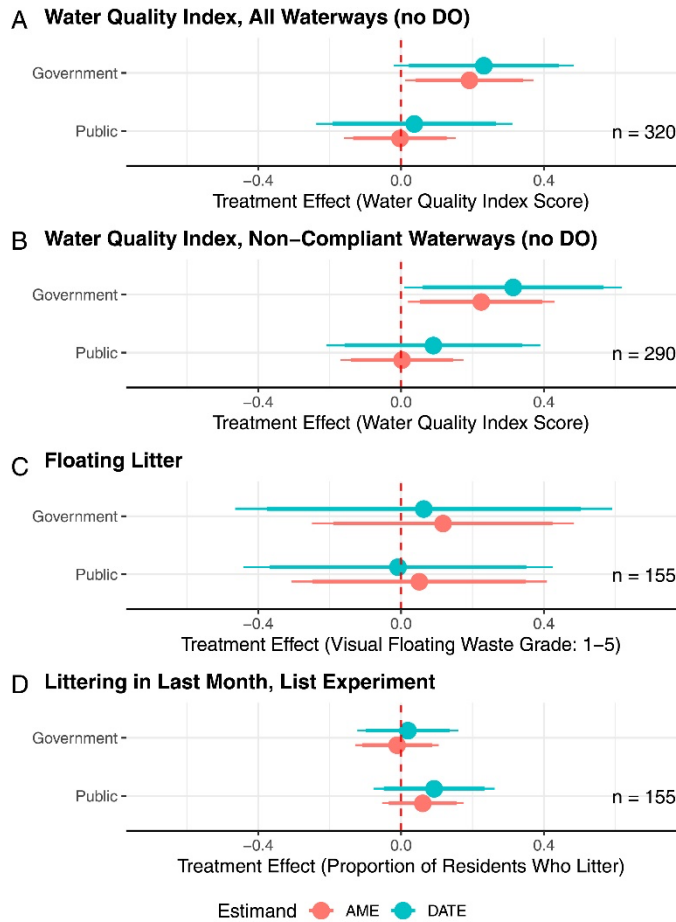
The Policy Problem

In China, water pollution contributes to over 100,000 deaths and USD 1.46 trillion in economic losses each year. A key policy created by the central government, the “black and smelly” rivers program, requires local authorities to remediate severely polluted waterways. Many urban waterways have been slated for remediation under this program, however, despite directives from the central government, local governments assigned to remediate waterways often do not maintain their quality. Independent baseline data suggests up to 91% of target waterways were not in compliance. This may result from a lack of regular central government monitoring. When monitoring is incomplete, local governments lack incentives to meet water quality targets.

Key findings and proposed solutions

- Chinese NGOs can encourage pollution remediation by monitoring and communicating the performance of local governments.
- NGOs should focus on providing information that can help hold local governments accountable for achieving standards.
- By contrast, sharing monitoring with the Chinese public is not a short-term strategy to ensure water remediation targets are reached.

What We Found



When monitoring data was shared with government actors, water quality improved by at least a 19%, on average. By contrast, sharing this data directly with local communities did not have detectable effects on water quality. While citizen monitoring may not shape public actions in China, it does appear effective at improving oversight. These results are consistent with evidence that NGOs in China gain influence by acting in alignment with higher-level authorities.

Figure 2. Effect of monitoring on water quality outcomes (A–D). Thick and thin bars are 90% and 95% CIs, respectively. See paper for additional details.

What We Did

We conducted a field experiment to test whether citizen monitoring interventions could hold local governments accountable for remediating water quality. Local NGOs organized citizen teams, who took twice monthly readings of water quality using inexpensive test kits. We assigned waterways to two cross-randomized treatments: the NGO either shared monitoring information with local and provincial governments through quarterly reports, or shared results with local communities through posters.