



Environment for Development

RESEARCH BRIEF

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Rainwater harvesting leads to women's empowerment.

This research brief is based on the EFD Discussion Paper: *Alternative Water Use in Promoting the Empowerment of Women in Rural Areas of Nigeria* by Jane Mbolle Chah and Angela Chidimma Igweh.

Research Question

What is the effect of rainwater harvesting on the empowerment of rural women?

Key Messages

- ✓ Rainwater harvesting improves women's empowerment beyond increasing water access.
- ✓ Women's participation in household and community water decision-making increases.
- ✓ Benefits are stronger during the rainy season when water availability improves.
- ✓ Reduced time spent fetching water enables women to engage in productive activities.
- ✓ Gender-sensitive policies can address water insecurity while strengthening empowerment.

Background and Methods

In Nigeria, water insecurity remains a major development challenge, particularly in rural communities where about 39% of households lack access to basic drinking water services. Women and girls bear most of the burden of water collection, which takes up time they could have used for education or participating in economic activities. Rainwater

harvesting (RWH) is increasingly recognised as a climate adaptation strategy that can improve water availability and support women's empowerment.

Methodology

This study used household survey data from rural communities in southeastern Nigeria to compare adopters and non-

adopters of rainwater harvesting. Women's empowerment was measured using indicators from the Empowerment in Women Index (EWI). Econometric analysis controlled for household characteristics.

Results

- Rainwater harvesting households recorded higher empowerment scores across seasons.
- Household decision-making scores were higher among adopters (0.695 vs 0.635 in the rainy and dry seasons).
- Community participation scores were also higher among adopters (0.774 vs 0.670).
- Overall empowerment scores remained higher for adopters in both rainy and dry seasons.

Policy Implications

- ★ Integrate RWH into rural water supply and livelihood programs.
- ★ Promote RWH as a climate-smart strategy for water security and women's empowerment.
- ★ Embed RWH investments within broader poverty reduction and infrastructure programs.

Research and Knowledge Gaps

Further research should examine the long-term impacts of rainwater harvesting on women's leadership roles, resource control, and interactions with other rural water supply systems.

The Environment for Development initiative is a capacity-building program in environmental economics focused on international research collaboration, policy advice, and academic training. It consists of centres in Central America, Chile, China, Colombia, Ethiopia, Ghana, India, Kenya, Nigeria, South Africa, Sweden (University of Gothenburg), Tanzania, Vietnam, Uganda, and the US (Resources for the Future). Financial support is provided by the Swedish International Development Cooperation Agency (Sida).