

## Effect of land reform and natural resource management (NRM) on food security and nutrition and health security

Community-driven watershed restoration initiatives have **large effects** on food security and nutrition outcomes by increasing dietary diversity and meal frequency, but none on access to drinking water.

Geographic region: Sub- Saharan Africa

Effect: Large effect (g=0.599)

Confidence in study findings: Medium (1 study with 4 effect sizes)

### Short Summary

Land reform and NRM interventions, such as community-based watershed restoration in Eastern Democratic Republic of the Congo (DRC), aimed to improve environmental security and household economic stability through sustainable farming, reforestation, and Village Savings and Loan Associations (VSLAs). The intervention had a large positive effect on food security and nutrition, with households in the treatment watershed reporting increased meal frequency and greater dietary diversity. No significant improvements were observed in household access to drinking water.

### Long summary

#### *The intervention*

The initiative focused on community-driven watershed restoration to enhance environmental sustainability and socioeconomic outcomes. Activities included sustainable farming training, reforestation, and forest management, implemented via VSLAs and partnerships with local institutions, including schools, churches, and mosques. The program aimed to mitigate environmental degradation and conflict while promoting economic resilience.

#### *How the intervention is expected to work*

The intervention enhances food security, nutrition, and health by improving agricultural productivity through sustainable farming practices, increasing food availability and dietary diversity. Agroforestry and soil conservation measures boost crop yields, while savings groups increase household income, allowing families to invest in healthcare and improved nutrition.

#### *The evidence base*

This cell includes one study which is set in Eastern Congo. Data were collected from 320 randomly selected households across the two watersheds.

### *Evidence findings*

The intervention had a positive impact on food security and nutrition. Households in the treatment watershed reported greater dietary diversity and higher meal frequency. Participatory workshops indicated a reduction in food shortages and an overall improvement in household nutrition..

### *Included studies*

**Sabin (2019)** evaluates the impact of a community-based watershed restoration initiative in Eastern Congo, assessing its environmental, economic, and social outcomes. Using a mixed-methods approach, including difference-in-differences (DID) analysis, participatory workshops, and remote sensing data, the study compares two watersheds—one receiving the intervention and the other serving as a control. The intervention involved establishing Village Savings and Loans Associations (VSLAs), promoting sustainable farming practices, and strengthening community leadership networks to encourage environmental restoration. Households in the treatment watershed experienced a significant improvement in dietary diversity ( $p < 0.001$ ), with an increased variety of food categories consumed, suggesting better nutritional intake. The number of meals consumed per household also increased significantly ( $p < 0.001$ ), indicating improved food security and access to nutrition.

### *Confidence Assessment*

Overall low: The overall rating for this cell is low due to limited number of studies.

### **Other outcomes in the study:**

Social cohesion / willingness to participate or help

Human security / economic security

Human security / education security

Human security / environmental security