



Photo © CGIAR Climate | CC BY-NC-SA 2.0

Targets poor/disadvantaged  
Conducted at landscape scale

#### **Intervention type**

Food production  
Restoration

#### **Ecosystem type**

Tropical & subtropical grasslands  
Terrestrial production

#### **Climate change impacts addressed**

Loss of food production  
Drought  
Soil erosion

#### **Instigators**

International  
conservation/environment  
organization  
Local NGO or CBO (eg. indigenous)  
National government/agency

#### **Societal challenges**

Biodiversity conservation  
Climate change adaptation  
Climate change mitigation  
Conflict and Security  
Disaster risk reduction  
Economic and Social development  
Rights/empowerment/equality  
Food security  
Water security

#### **Literature info**

Grey literature  
Case methodology not reported

#### **External case resources**

# Combined climate smart agriculture and ecosystem-based approaches to adaptation

## Burkina Faso 6 villages in Yatenga and Lorum Provinces

---

**Stone bunds, Zaï, and half-moon agriculture techniques have been implemented alongside composting, reforestation, and farmer-managed natural regeneration to reduce the vulnerability of communities to increasingly unpredictable and limited rainfall.**

Nature-based Intervention:

Six villages in the Yatenga and Lorum provinces have worked to reduce vulnerability to unpredictable rainfall and droughts. Sustainable agriculture techniques combined with various nature-based interventions were implemented with the aim of protecting soil, conserving water, and restoring the local ecosystem's ability to retain and regulate water flows. Various farming techniques have been employed to counter the challenges of rainfall variability by improving water infiltration and soil stability and reducing erosion. Stone bunds aligned with land contours were built on 1,045 hectares of land. These stone bunds are able to reduce water run-off and erosion while increasing infiltration into surrounding soil. Zaï has been employed on 2,122 hectares of land involving digging pits in the soil before a period of rain to catch water and concentrate compost. Furthermore, a practice of farming in half-moon shapes has been increasingly embraced to capture water and hold it in place for improved uptake by arid soils. Artificial pools called Boulis were also constructed to collect water run-off, increasing water availability for livestock and crops. These farming techniques have been accompanied by reforestation and farmer-managed natural regeneration (FMNR) where 42,022 seedlings produced in five community nurseries have been planted across the project area. Furthermore, waterbody greening and gully treatment to strengthen riverbank and dam protection, biodigesters transforming domestic waste and cattle dung into biogas and fertilizer, and organic gardening have been embraced as additional interventions to improve the adaptive capacity of communities.

Overview of context and outcomes:

These solutions all help reduce water stress to crops during dry periods. These efforts aim to protect croplands from water and wind erosion while also further facilitating the improved regulation of water flows.

## Case effectiveness on

Climate change

**Mitigation:** Positive

An assessment of project outcomes predicted that the implemented reforestation and farmer-managed natural regeneration likely supports climate

change mitigation by improving the carbon storage potential of the area.

**Adaptation:** Positive

Focus groups with community members found that the interventions had positively affected resilience and local adaptive capacity in relation to inadequate rainfall. Anecdotal evidence reported that agricultural yields had increased where soil restoration practices were implemented. Manure and composting was reported to have improved agricultural productivity and soil fertility. Post-intervention assessments reported enhanced local incomes, improved water availability, and avoided economic losses from disasters. Furthermore, training on environmental protection has strengthened local capacity to respond to climate change.

## Ecosystem health

**Ecological effect:** Positive

Post-intervention assessments reported improved vegetation cover of cropland and the restoration of soil fertility. Furthermore, although not measured explicitly, the assessment concluded that the interventions had likely improved species diversity.

## Socioeconomics

Community members have testified that there is stronger social cohesion within and between villages as a result of exchange visits and increased collaboration.