
Innovation for Prosperity: Sustainable farming techniques, land reclamation and improved livelihoods in Burkina Faso



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The problem

- While global agricultural productivity has increased in response to growing demand for food - about 2% per year since 2000 – land productivity has reached a plateau; satellite images between 1981 - 2003 show 12% of the world's productive land declined in productivity.
- Farmers are increasing productivity by:
 - Extensive farming: expanding the amount of land under cultivation, leading to deforestation, erosion and loss of natural habitat
 - Intensive farming: applying chemical fertilisers and pesticides, introducing mechanisation, leading to the degradation of soils, reduced biodiversity and polluted water resources.



The problem in Burkina Faso

- Successive decades of over-farming and overgrazing have gradually turned once fertile lands into desert, with up to 65% of land degraded in some areas.
- Desertification is one of the biggest challenges facing Burkina Faso, caused by greater land needs associated with population growth, increases in the head of livestock, inadequate methods for exploiting resources, and climatic change (namely rain variability) leading to erosion and flooding.
- The Central Plateau region faced severe droughts between 1968 and 1973 and again in 1982–1984, causing severe food crises.
- As agricultural expansion reached its boundaries, farmers responded by trying to get more out of their land, often leading to further degradation.



The Innovations

In the face of these deepening problems, farmers began to adopt a range of techniques to stem the land loss and recuperate land that had become degraded.

1. Zai: planting pits traditionally used on a small scale to rehabilitate hard, barren land. Innovations included widening the dimensions of the pits and the application of manure and other organic waste.
2. Contour stone bunds: semi-permeable barriers built by placing stones around and within fields trapping rainwater, encouraging its slow absorption into the soil, preventing runoff, reducing erosion.
3. Demi-lunes: ditches dug in a semi-circular shape and lined with cuttings. The hollowed portion collects water, allowing crops planted in the ditch to receive more rain.



Why the innovations were taken up

- Improved on traditional techniques used in the region, emerging from the ‘bottom-up’ participation of local communities and farming leaders in contrast to previous techniques imported from different contexts and implemented ‘top-down’.
- Burkina Faso has one of the most active and diverse civil society networks in Africa. Local organisations, the national farmers’ union and village networks were used to disseminate information on improved techniques and demonstrate their use.
- Poor farmers are more likely to adopt these agricultural techniques where there is assistance in reducing barriers to adoption, particularly in covering the cost of inputs, tools and labour.



Outcomes

- Between 1989 and 2004 some 200,000 to 300,000 hectares of once degraded land was reclaimed.
- An additional 80,000 tons of food crops produced each year has enhanced food security for around 500,000 people and most families have halved their hunger gap.
- Short-term impacts on agricultural yields range from increases of between 30% and 350%, particularly if the improved techniques are used in combination. This avoids long lags between farmers' investment and increased returns.



Remaining Challenges

Further technical innovation is needed to make these innovations more viable for the poorest farmers. Transport of stones, labour requirements and lack of organic inputs in particular.

A lack of coordination among donors, government ministries and NGOs has limited the scale of adoption of sustainable farming techniques.

Strategic investments are needed to address financial barriers faced by the poorest farmers unable to support upfront costs, information and financial support is largely benefiting the richest or those with some social and political power.



PRESSURES

- Population density
- Encroaching Sahel desert
- Climate change affecting rain variability

SOLUTIONS

- Innovative farming methods, mixing traditional practices with new ideas
- Dissemination of information through locally-led initiatives, via strong social networks
- Demonstration of benefits and support with costs and labour - incentivising adoption

RESULTS

OVER THE PAST 3 DECADES



200k to 300k

hectares of degraded land turned into productive land



80,000 tons

of additional food per year produced

Providing food security for an additional



500,000 people

WORK TO BE DONE



More and better targeted finance (domestic and international)



More collaboration to scale-up progress



Continued research to grow success

PROGRESS IS SIGNIFICANT, BUT ALSO FRAGILE



Innovative farming techniques can, in the short-term, increase agricultural yields by as much as:

30% → 350%

