

Improved Food Production and Water Capture in the Drought-stricken Sahel of West Africa

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Improved Food Production in the Sahel of West Africa

The US Agency for International Development Soil Management CRSP Project in the Sahel of West Africa

The Soil Management CRSP and partner institutions in Mali, Senegal and The Gambia have achieved important results in the conservation of water in the rain-fed agriculture of the Sahel. The technology, originally called *aménagement en courbes de niveau* (ACN), loosely translated as ridge tillage, is a holistic, landscape approach to managing water and capturing rainfall. The ACN consists of points of the same levels in a given farmer's field connected to form permanent ridges (ADOs). Smaller ridges are annually drawn between the ADOs to complete the system.

Increased capture of rainfall

The increased capture of rainfall has produced four important results:

1. Reduced drought risk to food crops,
2. Increased yields of crops,
3. Increased biodiversity, and
4. Increased drinking water supplies.

Reduced drought risk to crops

The permanent ridges used in the ACN approach capture the first rains and enable earlier planting of the light-sensitive varieties of crops, giving them more time to grow and accumulate biomass before producing grain.

Increased yields of crops

Yields of millet, sorghum, peanut, cotton and maize have increased 20 to 50 percent. Soil carbon has also increased, stabilizing and increasing yields.

Increased biodiversity

Spontaneous regeneration of three ecologically and economically valuable tree species (*Faidherbia albida* (*Acacia albida*), *Adansonia digitata* (baobab) and *Vitellaria paradoxa* (shea butter)) has been observed.

Increased drinking water supplies

Reduction in runoff due to ACN results in more recharge of groundwater (upward of 150 percent). Groundwater is the primary water source for villages, but water availability has decreased with recent climate change, threatening the only source of potable water.



Zan Diarra, Siguidolo, Mali. Permanent bunds can be vegetated with *A. gayanus* for building material and animal feed, protecting soil resources and capturing water for future generations.



Sorofin Diarra irrigates her garden while daughters Batama, Youma and Nieba observe. Currently 80 percent of Siguidolo households have gardens compared to none 12 years ago before ACN was introduced.

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