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 amenagement 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 three 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 two ecological and economically valuable tree species (*Faidherbia albida* (*Acacia albida*) and *Adansonia digitata* (baobab)) 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.
Improved Food Production and Water Capture in the Drought-stricken Sahel of West Africa

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