Project/Technology Name: "Zai" traditional technique for land rehabilitation

What it is: *Zai* is a traditional land rehabilitation technology "invented" by farmers in Burkina Faso to rehabilitate degraded drylands and to restore soil fertility to the benefit of farmers living in drylands.

How it works: Small pits 20-30cm in diameter and 10-20cm deep are dug into degraded soils, often hardpans. At the bottom of the pits farmers place about two handfuls of organic material (animal dung or crop residues). Pearl millet or sorghum seeds are planted in these pits as soon as the rainfall starts.

What it does: The poorly available organic matter is placed at the bottom of the pit and not broadcast over the whole field. The organic material used attracts termites, which play a crucial role as they dig channels in the soil and by doing so improve its "architecture". The termites also digest the organic material, making nutrients more easily available to the crops planted or sown in the pits.

The *zai* pits also serve to collect and concentrate water at the plant. This reduces the risk of water stress in a region of low and erratic rainfall. *Zai* therefore combines water and nutrient management into a technology that requires little external inputs and is financially accessible to and manageable by farmers.

Results/Effectiveness: Use of the *zai* technique produces higher grain yields, particularly on highly degraded sandy soils. Though labor intensive, the pits are dug during the off-season when farmers do not engage in other field activities, so labor time is less of a constraint. *Zai* offers a good potential to both increase the livelihood of the rural population in the Sahel and, at the same time, combat desertification.

More information can be found at:
http://www.zef.de/fileadmin/webfiles/downloads/zefnews/No8-9-2001-engl.pdf
http://www.ifpri.org/events/conferences/2003/120103/papers/paper10.pdf
http://www.iwmi.cgiar.org/africa/West/projects/Adoption%20Technology/RainWaterHarvesting/23-Zai.htm

Millet yield under the zai technique