Traditional soil and water conservation on the Dogon Plateau, Mali

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2. TRADITIONAL SOIL AND WATER CONSERVATION TECHNIQUES.

The best-known are: mounds, terraces, stone lines, bunds or low walls, square basins, and planting-holes.

2.1 CONES OR THE TECHNIQUE OF MOUND-MAKING.

Cone-shaped mounds of earth are constructed by farmers during the hoeing or weeding of their millet and sorghum fields (see diagram 1). The first weeding is done in July, while the crops are still young, and second weeding and mound-making from the end of August to September, as the ears of grain begin to develop. Mounds are set among the millet plants, and vary in size. An average mound would be 35 cm high and have a base measuring 60 cm. The size of a mound is partly determined by the person who makes it (a mound made by a woman, or a child of ten to twelve years old, is smaller than one made by a young or adult man), and partly by the nature of the soil. Mounds built on dry clayey or skeletal soil, are smaller than those on damp, deep, sandy or clayey soils. A man of 20 to 45 years old may be able to build mounds over an area of about 800 m². A woman of the same age group would probably be able to do only half as much. Persons above or below this age group would do even less.

Mound making remains the most common soil and water conservation technique. It is popular throughout the plateau, and is well-known in other parts of Mali.

Mounds slow down the runoff of rainwater and facilitate percolation. They also help to cover weeds, and thus function as mini-compost heaps. The buried weeds turn into organic fertilizer for future crops, since the mounds are designed to carry the next season’s seedlings whose growth will be encouraged by the nutritive elements in them. Mounds also help to protect seedlings from winds and storms, and aid aeration.

Mound making has become increasingly popular over the years. Up to about 1950, the Dogon only hoed their fields. Nowadays they also weed them, as a result of which they have gone back to making mounds during each season’s weeding.
Diagram 1: Mound-making in fields

Diagram 2: Hillside terraces
CONCLUSION

Traditional soil and water conservation techniques have prolonged the arable life of fields by many years. Were it not for these techniques, the steep mountainsides and plateaux would experience a serious shortage of land to farm, and even those areas with gentler slopes would have lost more soil than they have. Without these techniques, many crops would have suffered more greatly from drought.

Traditional techniques are certainly helpful, but their effectiveness is limited, and many fields that have been cultivated for years are now abandoned because of erosion which threatens to destroy the Dogon plateau. We are also aware that traditional techniques on their own will not be able to cope with the erosion that threatens the very survival of the inhabitants of the plateau.

In addition to all the many different problems (demographic growth, drought, rural exodus, illiteracy), the phenomenon of erosion has become more serious. Indeed, it poses such a threat, that traditional techniques alone cannot provide adequate solutions.

The people of the region involved, the government agencies and local NGOs must act urgently and energetically before it is too late. In our opinion, they need to make significant improvements to existing traditional techniques, combining them with new techniques that could help contain the existing problem.

The intensification of soil and water conservation techniques is very much requested by rural people who need the necessary material means to achieve this. The improvement of traditional techniques is essential, because they suffer from a number of weaknesses, given the gravity of the problem. Soil and water conservation projects need to have a strong grass roots base - that is to say, that the views of local people must be taken into account. The awareness of local people of the importance of soil and water conservation is a factor vital to the success of such projects.

We do not wish to be alarmist, but the extent of erosion is very worrying, and unless action is taken promptly, and energetically, it will soon be too late. If the problem of erosion is not tackled properly, all the other development projects (well digging, dam building, cereal banks and savings banks) will be utterly pointless in the long term. If an agricultural community does not have access to arable land in a given area, people will soon abandon it.