

### PART III. FARMING SYSTEM CONSTRAINTS AND POSSIBLE SOLUTIONS

The following discussion focuses on the major constraints to the farming system in this region of North Kordofan. The constraints can be roughly divided for convenience of analysis into crop production constraints and other constraints. Crop production constraints are further broken down into natural constraints (wind, erosion, pests and diseases, soil fertility and rainfall) and input constraints (labor and credit, access to seeds, chemical inputs and drinking water). The other constraints include the credit market, procedures for auctioning crops, government price policy, the limited knowledge of farmers, storage and transportation. Each constraint will be addressed separately in the discussion that follows and solutions will be proposed. Whenever appropriate something will also be said about the way farmers have already developed compensating strategies to deal with these constraints.

#### Constraints to Crop Production

##### Natural Constraints

Natural constraints to crop production include those environmental conditions which adversely effect crop output.

##### A. Wind Erosion

High winds in this area often blow away freshly planted seeds or newly germinated crop seedlings in farmers' fields. Millet and sesame are particularly susceptible to such wind erosion. This often forces farmers to bear the time and labor cost of replanting. In addition, such wind erosion removes top soil from farmers' fields which adversely effects crop output.

##### Compensating Strategies

1. Farmers plant sorghum in the same hole with sesame. The firm root structure and sturdy stalks of sorghum make the sesame plant less susceptible to wind erosion.
2. In addition to sorghum, farmers plant a number of other crops with sesame in the same hole. The other crops prevent winds from uprooting the sesame.
3. Farmers often leave trees and bushes in their fields until after the first weeding to protect the soil and newly planted seeds from wind erosion.
4. Farmers plant excessively large amounts of seeds per hole so that the crop germinates as a bush. By increasing the density of plants per hole wind is less likely to blow them away.
5. When farmers clear their fields prior to planting, they sometimes leave cut-up bushes, grasses and crop residue lying on the field to protect the soil from wind erosion. When planting begins, some farmers remove this debris while others plant around it.