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Agricultural practice compromising soil cover on farms

Introduction

Repeated ploughing and leaving bare soil is thought to be a good agricultural practice. Uncontrolled grazing usually after the crop is harvested is the usual practice. Undulating and slope areas also cultivated, the sum total of which expose the soil to land slide and severe erosion. Thousands of farm lands are lost due to this conventional practice.

It is strongly believed now a total mind set is necessary in order to save the farm lands and insure sustainable agricultural production. To attain this Conservation Agriculture is the rule of the day. Minimum disturbance of the soil, soil covering and crop diversification are the main pillars of Conservation Agriculture. The Agricultural practice in Ethiopia, is repeated ploughing, open grazing and mono cropping in most places, which all contradict CA.

The undulating and bare agricultural lands especially in the northern part of the country will stop being agricultural fields unless ameliorating steps are taken in time. Farmers should opt to CA, with zero level soil disturbance and selecting the proper soil cover and maintain crop mix taking the particular situation into account.



Free grazing in Ethiopia



Farmers' experience and nearby research centers should be consulted to identify the kind of live and cut cover crops compatible with the kind of crops to be grown in the vicinity. Information could be collected using the table where major crops, potential cover crops, time of planting, harvesting and other pertinent characteristics are tabulated to help the proper major crop and cover crop selection. At least 30% of the soil need to be covered by the residue to call it a CA practice. The appropriate cover will be selected, depending on he particular problem, like soil compaction, erosion, evaporation, e.t.c.

Selection of potential cover crop species

Agro-ecology/site	Major constraints	Major crop	Potential cover crops	N source	Soil builder	Erosion fighter	Weed fighter	Moisture conserving	Pest fighter

CA Capacity Building Manual for Ethiopia Ministry of Agriculture: Module 2: How to maintain soil cover on farms



Measuring degree of soil covering

Plant certain types of cover crops based on your goals



Grasses
Annual ryegrass: nitrogen scavenger, erosion prevention, weed suppression



Legumes
Crimson clover: nitrogen source, erosion prevention



Brassicas
Forage radish: erosion prevention, weed suppression, soil compaction reduction

Photos: Edwin Remsberg



At each site, discussion must be held to come up with the potential for each site for the potential crop, potential cover crops, problems and major constraints on productivity (moisture, erosion, fertility, compaction, pest) thus to select the appropriate cover crop and mode of establishment.