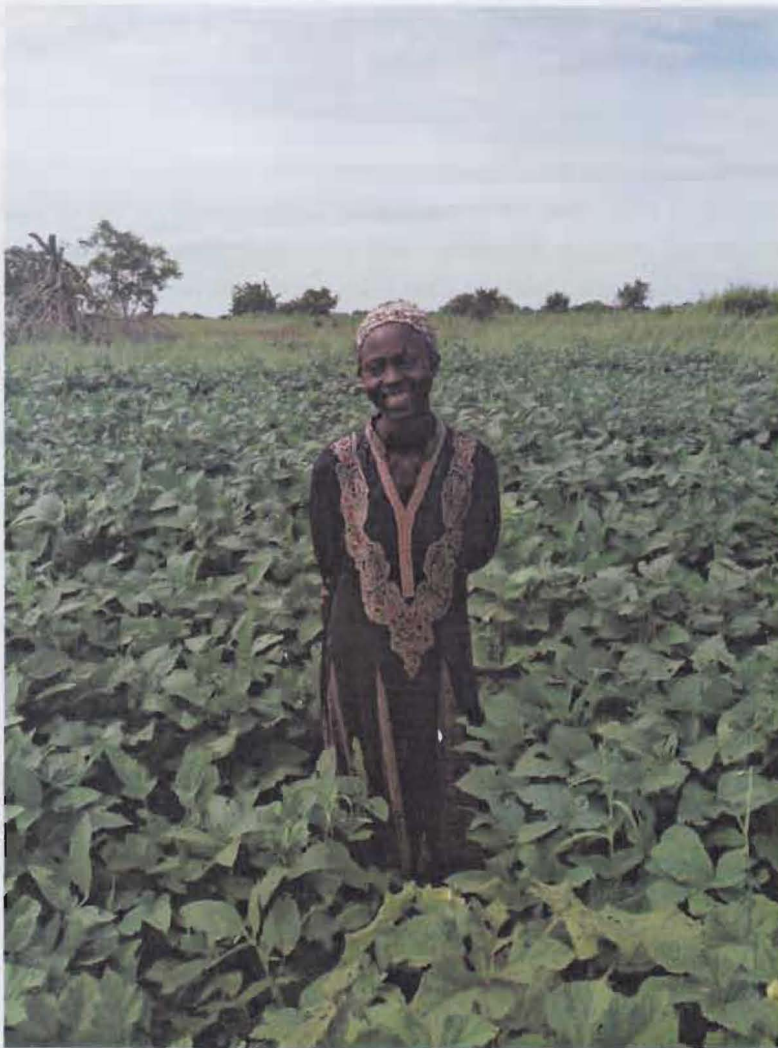


Options for Sustainable Agriculture in the Chereponi District

A Multidisciplinary Research Report
2016



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Options for Sustainable Agriculture in the Chereponi District

Executive Summary 2016

Purpose of Report

Sabab Lou has been working with the Anoshe Women's Group (AWG) to intensify soybean production in 5 communities within the Chereponi District, in Ghana's Northern Region. Previous inter-disciplinary research groups have conducted research pertinent to the development of the organization, in addition to carrying out soybean specific field trials to determine best management practises. The goals of the 2016 group members were to improve pathways to the adaption of agronomic improvements, develop a locally adapted participatory monitoring system for rainfall distribution and to further improve agronomic measures by analyzing the effect of soil ridging and organic matter addition to soybean yield.

Crucial Problems

While past studies have generated some institutional change, there is a clear lack of implementation of the prescribed agronomical measures in the fields of the AWG. Soy production remains low-input and low-output – thus earning the women too little to significantly invest in the improvement of their farms or material wellbeing of their families. Simultaneously, inadequate ploughing practises expose soils to massive erosion and widespread dry-season burning deprives the land of much needed organic matter (OM), raising serious concerns about ecosystem degradation thus endangering food security. Additional challenges to sustainable production include a lack of reliable weather and rainfall data as well as scarcity of competent extension agents to train the women in improved agronomical practises.

Recommendations

The staff of the AWG have stated there are not enough tractors at the beginning of the rainy season to ensure ploughing services for all. Sacrificing quality in order to obtain timely service is not, however, a sustainable strategy. The AWG needs to rent extra tractor service as necessary, but also make it clear to drivers that they are being paid for quality as well as quantity so they must adjust their technique accordingly. Most importantly, it must be made absolutely clear that they are to plough in a perpendicular angle to the main slope of the land.

Due to time constraints and manpower needed to construct the ridges (approximately 6 hours to ridge one acre), it is not advisable to ridge via raised bed practise. The time spent constructing ridges would be better spent implementing other agronomical recommendations such as proper planting procedures, timely weeding, micro-dosing TSP and maintenance of organic matter. When the AWG is able to maintain these previous recommendations and ploughing practises improve, it would be possible to

ridge off the plough lines rather than the current practise of flattening the field and thus the increase in labour would be minimal and economic.

A thorough weeding at 3-4 weeks after sowing was adequate to reduce weed pressure before canopy closure. The 2016 trials were conducted at a higher planting density with 200,000 plants per acre (achieved by planting 40cm between rows and 5cm between plants). The new row spacing is advisable, as only one weeding was required due to early canopy closure. Weeding and TSP micro-dosing were carried out simultaneously which maximized the availability of the fertilizer and assured it was not going to waste feeding weeds.

Burning crop stubble must end if sustainable production is to be achieved. No significant differences in yield were detected between the different OM treatments or application rates. Thus, 1 ton dry weight of organic matter per acre was sufficient in creating a fertilizer response in unresponsive fields. The first step in achieving sustainability in these farming systems is to maintain crop residues in the fields. This will naturally be a long term proposition, but one that can only be achieved through education. Knowledge is not transferred by osmosis. In order for women to change their farming habits they must be trained in new techniques in order to understand why they are changing habits generations old. This training is much more clearly received when promoted within small groups in the villages rather than large. Those smaller group sizes are important for workshops in order to promote innovations, improvements or actions to be taken. It is important to encourage the participating women to share knowledge with others who are not participating. It is not necessary that all individuals of a village are a part of a training group, as knowledge gained by the participating group-members in intensive workshops/ trainings will be shared throughout the village.

Regular meetings and extension offers are also of central importance – at least once in a month - the more the better. This will also strengthen the affiliation to the project and the group cohesiveness.