Field Implementation steps: Planting Basins (soil and water conservation) Planned

Comparison – Modified for the 2017 Planting Season

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Introduction

The main purpose of the planting basins action learning/planned comparison is to determine the cost effectiveness of the planting basin designs and associated management practices for varying farm and farmer circumstances. This purpose is fulfilled by comparing different sizes of planting basins, in relation to the associated production costs (manure, labour, mulch) and obtained crop yields. The learning/comparison is undertaken at individual farm level, with each farmer trying out a maximum of 8 treatment combinations in at least one field of not less than one-sixteenth of an acre (0.026ha, an eighth of an acre). Before the implementation of the action learning, and to equip farmers with enough information and knowledge, the farmers should be trained beforehand on approaches and the application of different soil and water conservation practices. The table below shows all the eight treatments that are in the planting basin action learning/planned comparison;

Treatment	Planting hole size (feet)	Soil treatment	
Number			
1	Farmer method	No Manure	
2	Farmer method	Manure	
3	2*2*1.5	No manure	
4	2*2*1.5	Manure	
5	2*2*1.5	Manure + mulch	
6	3*3*1.5	No Manure	
7	3*3*1.5	Manure	
8	3*3*1.5	Manure + mulch	

Step by step on-farm layout of the planting basins action-learning design

1. Participating farmers are expected to select two areas in their farm where they want to conduct the planned comparisons; one for a legume and the other for a cereal (Each

farmer is encouraged to plant both the legume and the cereal but farmers who wish to learn with only one crop type are allowed to do so).

- In either of the two plots, a farmer can do all the 8 treatments, or a minimum of 2 treatments, but can also have a combination of 6 treatments, 4 treatments, or 3 treatments, as he/she wishes.
- 3. Depending on the famers choice of the number of treatment combinations, the following options can be applied and each of the plot(s) subdivided as detailed in the table(s) below:

Treatment Combination option	Number of Sub- Divisions per plot	Options				
8	8	Farmer method + no manure				
		Farmer method + manure 2*2*1.5 + no manure 2*2*1.5 + manure				
		2*2*1.5 + manure + mulch				
		3*3*1.5 + no manure				
		3*3*1.5 + manure				
		3*3*1.5 + manure + mulch				

a. For 8 treatment combinations;

b. For 6 treatment combinations;

Treatment Combination option	Number of Sub- Divisions per plot	Option 1	Option 2	
6	6	Farmer method + no manure	2*2*1.5 + no manure	
		Farmer method + manure	2*2*1.5 + manure	
		2*2*1.5 + no manure	2*2*1.5 + manure + mulch	
		2*2*1.5 + manure	3*3*1.5 + no manure	
		3*3*1.5 + no manure	3*3*1.5 + manure	
		3*3*1.5 + manure	3*3*1.5 + manure + mulch	

Number of Sub- divisions per plot	Option 1	Option 2	Option3	Option 4	Option 5
4	Farmer method + no manure	Farmer method + no manure	2*2*1.5 + no manure	2*2*1.5 + manure	2*2*1.5 + no manure
	Farmer method + manure	Farmer method + manure	2*2*1.5 + manure	2*2*1.5 + manure + mulch	2*2*1.5 + manure + mulch
	2*2*1.5 + no	3*3*1.5 + no	3*3*1.5 + no	3*3*1.5 +	3*3*1.5 + no
	manure	manure	manure	manure	manure
	2*2*1.5 +	3*3*1.5 +	3*3*1.5 +	3*3*1.5 +	3*3*1.5 +
	manure	manure	manure	manure + mulch	manure + mulch

d. For 3 treatment combinations;

Number of Sub- Option 1 Divisions per plot		Option 2	Option 3	Option 4	
3	Farmer method + no manure	Farmer method + manure	2*2*1.5 + no manure	3*3*1.5 + no manure	
	2*2*1.5 + no manure	2*2*1.5 + manure	2*2*1.5 + manure	3*3*1.5 + manure	
	3*3*1.5 + no manure	3*3*1.5 + manure	2*2*1.5 + manure + mulch	3*3*1.5 + manure + mulch	

e. For 2 treatment combinations;

Number of Sub- Divisions per plot	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
2	Farmer method + no manure	Farmer method + no manure	Farmer method + no manure	2*2*1.5 + no manure	3*3*1.5 + no manure	2*2*1.5 + no manure	2*2*1.5 + manure	2*2*1.5 + manure + mulch

Farmer	2*2*1.5	3*3*1.5 +	2*2*1.5 +	3*3*1.5 +	3*3*1.5 +	3*3*1.5 +	3*3*1.5 +
method +	+ no	no	manure	manure	no	manure	manure +
manure	manure	manure			manure		mulch

- 4. After choosing the treatment options based on the tables above, the farmer (with the help of the field monitoring team/lead farmers) should randomly assign the treatment options on the sub-divided plots
- 5. After assigning the treatments on the sub-divided plots, the farmers should then dig the planting basins, (where the sizes of the basins should be based on the selected treatments). The spacing between the 2*2 and 3*3 hole sizes, should be 2 feet. But, the farmer can reduce the spacing to his/her preference.
- 6. The farmer should then plant crops in the sub-divided plots. The number of grains (maize) to be planted in each planting hole size should be as below:
 - a. In the 2*2*1.5 hole, 5 grains
 - b. In the 3*3*1.5 hole, 9 grains
 - c. Number of grains in the 'farmer method' should be based on how the farmer usually plants