An Inventory of Agricultural Water Technologies and Practices in TANZANIA

I. GENERAL	Technology 1= Money Maker treadle pump	Technology 2 = Drip Irrigation	Technology 3 = Roof catchment with above ground tank	Technology 4 = Charco dam	Technology 5 = Small earth dam (*Ndiva*)	Technology 6 = "Fanya Juu" Terracing	Technology 7 = Ridging	Technology 8 = Mulching	Technology 9 = Minimum Tillage	Technology 10 = Ngoro pits	Technology 11 = Cholollo pits	Techology 12 = Silted sandy valley farmig (kilimo cha mchangani)	Technology 13 = Ladder terracing	Technology 14 = Paddy Field bunding
1. Name of water technology or practice	Micro irrigation	Micro irrigation	Rainwater harvesting	Rainwater harvesting	Rainwater harvesting	Soil conservation	Soil and Water conservation	Soil and water conservation	Soil and Water conservation	Soil and Water conservation	Soil and Water conservation	Water harvesting	Soil and Water conservation	Water harvesting
1.0 Detailed description of technology or practice (give technical description, refer to Annexes 1 & 2; attach an illustation/picture if technology is not in the lists)	Work on the principle of sunction using either one or two cylinder(s) and piston(s) to draw waterfrom a resource below ground level with maximum sunction head of 7 m	Make use of limited amounts of water application, possible application of fertilizer together with water to grow high value crops on an area up to 0.4 ha	Rain water is collected from rooftops made of modern materials for storage in tanks	Technogy for impounding runoff water by digging and earth embarkment construction	Water storage structure for crop production, constructed in the highlands	A trench dug along contour while throughing soil upslope of trench to form a bund stabilized by planted vegetation	Technology involving making ridges on contour at a spacing of 0.75 to 2 m	Involves covering soil with cut grass, crop residues, straw, or other plant materials	Generally, this means zero (no) tillage or reduced tillage with herbicides used to control weeds. Crop residues act as mulch and cover crops may be used to mintain fertility and control erosion.	Control of soil erosion by means of pits and ridges on steep slopes (10 % to 75 %)	Conservation of moisture by digging pits on contour and staggering them along slope to store (minimize) runoff	Digging holes to fertile and moist soil below sandy layer in valley bottoms for growing dry season crops	Conserving soil through ladder terraces made by hand hoe on steep slopes	Involves harvesting rainwater by making bands around paddy fields
1.1 Source of technology (Indigenous or Imported)	Imported	Imported	Imported	Imported	Indigenous	Imported	Indigenous	Indigenous in some places and imported in others	Imported	Indigenous	Indigenous	Indigenous	Indigenous	Indigenous
1.2 If imported, any modifications done (Yes or No)	No	No	No	No	N/A	No	N/A	N/A	No	N/A	N/A	N/A	N/A	N/A
1.3 Provider of technology[b]	NGO (KickStart)	Private enterprices (Balton Tanzania Ltd)	NGO, and Government extension worker	Government extension agency	Indigenous knowledge	NGO and Government Extension worker	Indigenous knowledge	Indigenous knowledge or pravite copying from other areas/farmers	Government agency, University, or Extension worker	Indigenous knowledge	Indigenous knowledge	Indigenous knowledge	Indigenous knowledge	Indigenous knowledge
1.4 Who developed/designed the technology package[c]	Shared vision of 2 Americans, Nick Moon and Martin Fisher	Authorized dealers of manufacturer	University/extension worker	University/extension worker	Innovative farmers	Extension Agency	Indigenous	Local innovator farmer	Government agency, University, or Extension worker	Indigenous innovation	Indigenous innovation	Indigenous innovation	Indigenous innovaion	Indigenous innovation
1.5 Who installed the technology package[c]	Farmers themselves	Authorized dealers of manufacturer	Extension worker/NGO	Government agency	Innovative farmers	Extension Agency	Indigenous	Local innovator farmer	Government agency, University, or Extension worker	Indigenous innovator farmer	Indigenous innovator farmer	Indigenous innovator farmer	Indigenous innovator farmer	Indigenous innovator farmer
1.6 Source of water (surface, groundwater, harvested rainwater, wastewater, etc.)	River/Shallow ground water wells	Surface, groundwater	Harvested rainwater	Harvested rainwater	Harvested rainwater	N/A	N/A	N/A	N/A	N/A	N/A	Harvested rain water	N/A	Harvested rain water
1.7 Is the technology used for more than one use (multiple uses)? (Yes/No)	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No
1.8 If yes, what are they?	Irrigation, domestic and livestock water supply, car wash,and block making	N/A	N/A	Domestic and Livestock watering	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1.9 If yes, how is the technical design adapted compared to the design for single use?	Same design no change	N/A	N/A	Bigger storage for multiple u	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1.10 What is seen as advantages of multiple use systems as compared to the design for one single use?	Efficient utilization	N/A	N/A	Normadic life is stopped	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1.11 What are the disadvantages of multiple use systems?	Relatively high frequency of replacing rubber/plastic parts	N/A	N/A	Costly	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Specific location/address & distance from main urban center (km)	Peri-urbarn and Rural areas	Peri-urban	Widespread in the country	Popular in semi arid area	Dry area of Western Pareland	N/A	Widespread	Wide spread in areas where coffee and/or bannana are grown	Babati and Karatu Districts in Northern Arusha	Matengo highlands in Mbinga Dstrict, southern Tanzania	Chololo Village in Dodoma rural district	Villages near Kondoa town on route to Dodoma Muncipality	The North western of the Uluguru mountain slopes,45km from Morogoro Municipality	Widespread practice in Mwanza, Shinyanga, and Tabora regions and seen in some other areas.
3. Main source(s) of income in site	Farming	Farming - mainly horticultural crops	Farming, Livestock keeping	Farming and Livestock keep	Farming, Livestock	Farming, Livestock kee	Farming and livestock	Farming	Farming and livestock keeping	Farming	Farming and livestock keping	Farming and livestock kepping	Farming	Farming and livestock keeping
4. Other source(s) of income in site	Trade, livestock	Livestock keeping, Trade	Trade	Trade, labour	Trade, labour	Trade and labour	Petty trade	Petty trade	Petty trade	Petty trade	Petty trade	Petty trade	Petty trade	Petty trade
5. Type of user (community or individual households)	Individual households	Individual households	Individual households	Community	Community	Individual households	Individual households	Individual households	Individual households	Individual households	Individual household	Individual households	Individual households	Individual households
6. No. of benefitted households; average size of households	Over 13,000 households	More than 15 households; 6 people/households	7 people per household	500 households	50 households	8 people/household	7 people per household	7 people per household	7 people per household	7 people per household	7 people per household	7 people per household	7 people per household	7 people per household
7. Total size for all beneficiaries (ha) -note average size per beneficiary	About 3000 ha	0.25 ha per beneficiary	1 ha	N/A	15 ha	1 ha	1 ha	I ha per household	1 ha per household	1 ha	I ha	0.4 ha	1 ha	0.2 ha to 0.5 ha
8. Profile of beneficiaries (if mostly ultra poor, poor, non-poor or mixed)[a]	Mixed	Non-poor	Mixed	Mixed	mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed
8.1 Was project/program area selected based on available data on comparative incidence of poverty? (Yes/No)	No	No	No	No	No	No	No	No	No	No	No	No	No	No
8.2 If yes, indicate the poverty status of the project area relative to all other regions of the country	Not applicable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8.3 Were particular populations or groups targeted within the project area (e.g., based on baseline socioeconomic surveys or participatory poverty assessment, etc)? (Yes/No)	No	No	No	No	N/A	N/A	No	No	No	No	No	No	No	No
8.4 If yes, indicate the poverty status of the beneficiaries relative to the non-beneficiaries in the project/programme area	Not applicable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8.5 Indicate the proportion of women beneficiaries	More than 50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	more than 70%
9. Month & year technology was introduced	Year 2000	Year 2003	Old technology	1930s	20th century	1973	20th century	1900	1991	Mid 19th century	1989/12/01	Not known but identified in 1998	Late 1920s	About1950s
10. No. of years of adoption	5 years	2 years	100 years	80 years	over 100 years	32 years	More than 100 years	Over 100 years	About 15 years	About 150	16 years	Known for 7 years	About 90 years	About 60 years
11. Is technology still in use (Yes or No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12. If not anymore, why? (STOP here for this technology)	Not applicable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13. Type of technology (water capture such as small dams, rainwater harvesting OR distribution/water use such as treadle pumps, drips, etc.)	Distribution/Water use	Distribution/water use	Water capture	Water capture	Water capture	Water Capture	Water capture	Water capture	Water capture	Water capture	Water capture	Water capture	Water capture	Water capture
14. Describe the counterfactual or the old technology (practice) the new water management technology/practice replaces.	Direct lifting using buckets	N/A	Containers were used to capture rainwater	Normadic life	N/A	N/A	Flat cultivation	None	Conventional tillage	Flat cultivation	Flat cultivation	None	Flat cultivation	None
14.1 Is the change partial or complete?	Complete for those owning the pumps	N/A	complete	Complete	N/A	N/A	Complete	N/A	Complete	Complete	Complete	N/A	Yes	N/A
14.2 If the change is partial, describe the elements of the old system that were preserved and those that were discarded	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
II. Profitability of the TECHNOLOGY														
a. The new technology or management practice (Note: prepare an enterprise or partial budget)														
15. What is the estimated and actual life of the technology? (in years)	10 years	10years	30 years	15 years		10 years with annual maintenance	One year	N/A	3 years	1 year	1 year	1 year	1 year	5 years
16. Was technology given out for free?	No	No	No	No	N/A	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
17. If NOT totally free, what is the capital cost of technology (reference YEAR of cost estimate; separate costs for	Tshs 99,500/= - Year 2005	Tshs 300,000 per 500 square metre system	2000 litres for Tshs 250,000	Tshs 50,000,000 (2005)	Tshs 70,000,000/= (2005)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18. Cost of operation & maintenance per ha (indicate what items are included-- cost of pumping in terms of fuel, energy/electricity, labor costs; maintenance and repair costs, etc.)	Labor, maintenance and repair costs - Tshs. 480,000/= per ha	Labor, and maintenance costs	None	N/A	Mantenance cost - Tshs 15,000/=	Tshs 10,000/= Maintenance and repair	Labour cost, Tshs 50,000/= per ha	Tshs 30,000/= per ha per year; for mulching materials and spreading	Tshs100,000/= per ha; for seeding and weeding only at the beginning	Tshs 200,000/= per ha;forgrassslashin, aligning, tillage, and weeding	Tshs 100,000/= Labor cost for pitting and weeding	Tshs 50,000/= per ha; labour costs	Tshs 100,000/= per ha; labour costs	Tshs 100,000/= per ha; labour costs, tillage, maintenance, and repair of bands
18.1. Does the new technology reqiure more or less labour than the old technology?	More	Less labour	Less labour	Less labour	N/A	More	More	More because of mulching	Less labor	More	More	More	More	More
19. Crops produced (indicate main crops vs. secondary crops)	Horticultural crops and seedlings	Water melon, Tomato, onions and other horticultural crops	N/A	N/A	Maize and Horticultural crops	Maize and beans	Maize,groundnuts, tobacco, cassava, cotton,potatoes, and beans	Main crops are coffee and banana and seconday crops are beans, cassava, finger millet and potatos	Main crops are maize and beans; Secodary crops are sorgum, millet, cassava, and bananas	Main crops are maize and beans and secondary crops are wheat, cassava, finger millet, and pegion peas	Main crops are maize and millet and secndary crops are ground nuts,and babara nuts	Main crops are maize and tomatoes and secondary crops are sweet potatoes and cow peas	Main crops are maize, beans, and vegetables. Secondary crops are banana, fuit trees,cassava, pegion peas, green peas, and cow peas	Main crops paddy, maize and cotton, and secondary crops are horticultural crops, groundnuts, sorghum
20. Changes in crops grown (into what & when) & reason for new crops or switching	No change	None	N/A	N/A	Maize during rain season, the Horticultural crops	No	No	None	None, but 1st harvest main crop, 2nd harvest cover crop	None	None	None	None	Paddy and then Horticultural crops
21. Indicate how many croppings per year (1, 2, or 3)	3	3	N/A	N/A	2	1	1	1	1	1	1	1	1	2
22. Increase in production (in kg/ha) due to technology (including amount used for own consumption & amount sold to market)	Not known	1000%	N/A	N/A	Not known	N/A	Not known	Not known	From 0.35 tonnes/acre to 2.19 tonnes/acre for case of maize	Not known	1000 kg per ha	2500 kg per ha.	Increase but not known	N/A
22. Increase in revenues (in local currency) due to technology (less amount used for own consumption)	Tshs 1,200,000/= per ha	Tshs 1,500,000/= per ha	N/A	N/A	Not known	N/A	Not known	Not known	Tshs 500,000/= per ha	Not known	Tshs 300,000/= per ha	Tshs 400,000/= per ha	Not known	N/A
23. Estimated & actual financial profits (gross revenues-costs of all cash inputs)	Tshs 710,050/= per ha	Tshs 900,000/= per ha per year	N/A	N/A	Not known	N/A	Not known	Tshs1,000,000/= per ha per year for banana and 900,000/= for coffee	Tshs 400,000/= per ha;	Tshs 100,000/= per ha	Tshs 100,000/= per ha	Tshs 300,000/= per ha	Tshs 350,000/= per ha of cabb	Tshs 700,000/= per ha;
b. Old water management technology or practice (prepare an enterprise budget) LEAVE OUT QUESTION 24-29 IF NO OLD TECHNOLOGY WAS REPLACED	Petrol/Diesel power pump		Bucket											

na=not applicable
nil=no information available

I. GENERAL	Technology 1= Money Maker treadle pump	Technology 2 = Drip Irrigation	Technology 3 = Roof catchment with above ground tank	Technology 4 = Charco dam	Technology 5 = Small earth dam (*Ndiva*)	Technology 6 = "Fanya Juu" Terracing	Technology 7 = Ridging	Technology 8 = Mulching	Technology 9 = Minimum Tillage	Technology 10 = Ngoro pits	Technology 11 = Chololo pits	Techology 12 = Silted sandy valley farmig (kilimo cha mchangani)	Technology 13 = Ladder terracing	Technology 14 = Paddy Field bunding
1. Name of water technology or practice	Micro irrigation	Micro irrigation	Rainwater harvesting	Rainwater harvesting	Rainwater harvesting	Soil conservation	Soil and Water conservation	Soil and water conservation	Soil and Water conservation	Soil and Water conservation	Soil and Water conservation	Water harvesting	Soil and Water conservation	Water harvesting
1.0 Detailed description of technology or practice (give technical description, refer to Annexes 1 & 2; attach an illustation/picture if technology is not in the lists)	Work on the principle of sunction using either one or two cylinder(s) and piston(s) to draw waterfrom a resource below ground level with maximum sunction head of 7 m	Make use of limited amounts of water application, possible application of fertilizer together with water to grow high value crops on an area up to 0.4 ha	Rain water is collected from rooftops made of modern materials for storage in tanks	Technogy for impounding runoff water by digging and earth embarkment construction	Water storage structure for crop production, constructed in the highlands	A trench dug along contour while throughing soil upslope of trench to form a bund stabilized by planted vegetation	Technology involving making ridges on contour at a spacing of 0.75 to 2 m	Involves covering soil with cut grass, crop residues, straw, or other plant materials	Generally, this means zero (no) tillage or reduced tillage with herbicides used to control weeds. Crop residues act as mulch and cover crops may be used to mintain fertility and control erosion.	Control of soil erosion by means of pits and ridges on steep slopes (10 % to 75 %)	Conservation of moisture by digging pits on contour and staggering them along slope to store (minimize) runoff	Digging holes to fertile and moist soil below sandy layer in valley bottoms for growing dry season crops	Conserving soil through ladder terraces made by hand hoe on steep slopes	Involves harvesting rainwater by making bands around paddy fields
24. What is the estimated and actual life of the technology? (in years)	5	N/A	5 years	N/A	N/A	N/A	N/A	N/A	1 year	1 year	1 year	N/A	N/A	N/A
25. What is the capital cost of technology?	Tshs 450,000/=	N/A	Tshs 2,000 for a 20 litre container	N/A	N/A	N/A	N/A	N/A	Tshs 100,000/= per ha	Tshs 100,000/= per ha	Tshs 100,000 per ha	N/A	N/A	N/A
26. Cost of operation & maintenance per ha (indicate what items are included-- cost of pumping in terms of fuel,	Tshs 924,000/=	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Tshs 100,000/=; labour costs and matrerial inputs	Tshs 100,000/=; labour costs and matrerial inputs	Tshs 100,000/=; lahour costs and material inputs	N/A	N/A	N/A
27. Crops produced (indicate main crops vs. secondary crops)	Horticultural crops and seedlings	N/A	N/A	N/A	N/A	Maize and beans	Maize,groundnuts, cassava, cotton,potatoes, and beans	Main crops were maize and beans and secondary crops were, sorgum,cassava, finger millet, and potatos	Main crops are Maize and beans and secondarycrops are cowpeas, pegion peas, cassava, and potatos	Main crops are Maize and beans and secondarycrops are cowpeas, pegion peas, cassava, and potatos	Main crops are maize and millet and secndary crops are ground nuts,and babara nuts	N/A	N/A	N/A
28. Indicate how many croppings per year (1, 2, or 3)	3	N/A	N/A	N/A	N/A	1	1	1	1	1	1	N/A	N/A	N/A
29. Estimated & actual financial profits (gross revenues-costs of all cash inputs)	Tshs. 231,000/=per ha	N/A	N/A	Service	N/A	N/A	Not known	Not known	Tshs 100,000/= per ha	Tshs 50,000/= per ha	Tshs 50,000/= per ha	N/A	N/A	N/A
III. ROLE OF INSTITUTIONS/ORGANIZATIONS														
30. Support by NGOs (specify the NGO & indicate if international or local)	KickStart - International				TIP (Local NGO)									
30.1 Indicate the total value of the support (in Dollars or local currency)	US $ 1.1 Million	N/A	Not known	N/A	Not known	N/A	N/A	N/A	N/A	N/A	Not known	N/A	N/A	
30.2 Is the support still on-going or withdrawn? (1. Ongoing; 2. Withdrawn)	Yes	N/A	Withdrawn	N/A	On going	N/A	N/A	N/A	N/A	N/A	On - going	N/A	N/A	N/A
30.3 If the institutional support is withdrawn, is the system still functioning?	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30.4 If the system is still functioning, is the pace of technology/practice uptake continuing at the same or better pace than when there was NGO institutional support? (1. Same pace; 2. Better pace; 3. Slowed down)	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30.5 Give reasons for the response to 30.4	N/A	N/A	The advantages of the technology are well known	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31. Specific support provided[d]	Introduction of technology, access to imputs, training users and local manufacturers,	N/A	Introduction of the technology	N/A	Improving canal to reduce water losses	N/A	N/A	N/A	N/A	N/A	Promoting spread of technology to surrounding villages	N/A	N/A	N/A
32. Support by government extension workers & other government agency (specify which agency & whether local or national government) (yes or no)		Government extension workers	Government extension workers	Local government	Local government	Government extension workers			Government agency and Extension worker				Government extension workers, University	
32.1 Indicate the total value of the support (in Dollars or local currency)	N/A	Not known	N/A	80% of the total cost	80% of the total cost	Not available	N/A	N/A	Not known	N/A	Not known	N/A	Not known	N/A
32.2 Is the support still on-going or withdrawn? (1. Ongoing; 2. Withdrawn)	N/A	On going	On-going	On-going	On-going	On-going in some places	N/A	N/A	On - going	N/A	On going	N/A	On - going	N/A
32.3 If the institutional support is withdrawn, is the system still functioning?	N/A	N/A	N/A	N/A	N/A	Yes in some places	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A
32.4 If the system is still functioning, is the pace of technology/practice uptake continuing at the same or better pace than when there was Government institutional support? (1. Same pace; 2. Better pace; 3. Slowed down)	N/A	N/A	N/A	N/A	N/A	Yes in some places	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A
32.5 Give reasons for the response to 32.4	N/A	N/A	N/A	N/A	N/A	Where farmers can afford increased labour the technology continues	N/A	N/A	N/A	N/A	N/A	N/A	It is indigenous	N/A
33. Specific support provided[d]	N/A	System installation in some places	Technical advisory services	Technical and financial supp	Technical and financial su	Introduction of technology, tools and finacial assistance	N/A	N/A	Capacity building, formation of farmer groups, material access	N/A	Promoting spread of technology to surrounding villages	N/A	Research	N/A
34. Support by private enterprises (specify enterprise)	Karam Engineering Works	Balton (T) Ltd												
35. Specific support provided[d]	Manufacture of the technology	System importation, and installation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36. Support by other organization (specify organization - e.g. community organization) or private sector service provider (e.g. manufacturers/dealers/retailers)	Dealers and Retailers			Community Based Organization	Community Based Organization	Community Based Organization								
36.1 Indicate the total value of the support (in Dollars or local currency)	Not known	N/A	N/A	20% of the total cost	20% of the total cost	Not known	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36.2 Is the support still on-going or withdrawn? (1. Ongoing; 2. Withdrawn)	Yes	N/A	N/A	On-going	On-going	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36.3 If the institutional support is withdrawn, is the system still functioning?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36.4 If the system is still functioning, is the pace of technology/practice uptake continuing at the same or better pace than when there was institutional support? (1. Same pace; 2. Better pace; 3. Slowed down)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36.5 Give reasons for the response to 36.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37. Specific support provided[d]	Facilitate access to output market	N/A	N/A	Management of the technology	Management of the technology	Labour and administration	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IV. FACTORS CONTRIBUTING TO PROFITABILITY & SUSTAINABILITY OF TECHNOLOGY (see Annex 3 for sample answers #40-45)														
38. Ease in implementation (Yes & No)	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
39. Ease in O&M (Yes & No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
40. Suitability of technology/How adapted to local conditions (well, not so well, etc.)	Well	Well	Well	Well	Well	Not so well	Well	Well	Well	Well		Well	Well	Well
41. Cultural acceptability	Acceptable	Not full assessed	Acceptable	Acceptable	Acceptable	Acceptable	Highly acceptable	acceptable	Acceptable	Acceptable	Well	Acceptable	Acceptable	Acceptable
42. Effectiveness	Socially, technically and economically effective	Very high	Very high	High	Moderate	High	High	High	High	High	High	High	Moderate	Very effective
42. Environmental impact	None	None expected	None	Overgrazing and localized e	Reduce soil erosion	Reduced soil erosion	Reduces soil erosion,	Controls soil erosion and promotes environment sustainability	Controls soil erosion, promotes environmental sustainability	Controls erosion and conserves moisture	None expected	None expected	Reduced soil erosion	None
43. Other advantages (factors contributing to profitability & Suitability)	Insignificant replaceable parts,need no fuel	Low use and high productivity of water	Lack of public water supply systems	Improved availabilty of water	Improve availability of water for small scale irrigation	Increased soil moisture and availability of fodder on bunds	Improves soil moisture retenti	Conserves soil moisture, maintains high organic matter content, improves soil structure, controls weeds, protects soil against direct sun radiations, and promotes soil fauna activities	Maintains high organic matter content, improves soil structure, controls weeds, protects soil against direct sun radiations, and promotes soil fauna activities	Maintains high organic matterand improves soil structure	Increases rain water that infiltrates the soil	No weeding and fertile soils	Sustains organic matter in soil and conserves moisture	Reliable harvests through harvested water from upper catchments
44. Other disadvantages (factors constraining profitability & sustainability-- e.g. lack of specific support services or supplies of specific inputs, etc.-- be very specific)	Day human labour required	Expensive and require proper maintenance	Relative high cost	Siltation	Very expensive	High labour cost	Low planting density	None	Use of herbicides	Needs other fertility management measures for sustinable productivity on steep slopes	None expected	None	Needs external nutrients inputs in areas where there are no livestock for manure supply	Labour intensive (banding)

KEY:
na = Not Applicable
nil = No information available
[a] 1: ultra poor - extremely poor or most vulnerable engaged in rainfed cereal production, no potential to diversify because of lack of land, no livestock, limited available labor, no off-farm incomes/remittances, or without access to land and resources at all 2: poor; 3: non-
[b] 1: indigenous knowledge; 2: NGO (specify); 3: government agency/extension worker; 4: private enterprises; 5: other (specify)
[c] 1:government agency (extension agency/irrigation advisory services/University); 2: representative/authorized dealers of manufacturers; 3: private consultant; 4: farmers themselves; 5: other (specify)
[d] 1:introduction of technology; 2: facilitated access to inputs; 3: facilitated access to output markets; 4: provision of (or facilitated access to) credit; 5: capacity building such as training (specify what); 6: formation of association (specify: water user assoc., producers